ABET SELF-STUDY QUESTIONNAIRE: Information Technology – University of Cincinnati

2011-2012 Review Cycle

COMPUTING ACCREDITATION COMMISSION

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Self-Study Report

for Information Technology (IT)
School of Computing Sciences and Informatics
College of Engineering and Applied Science
University of Cincinnati

June 1, 2010

BACKGROUND INFORMATION

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B. Program History

Year Implemented – 2004
Date of Last General Review – 2007/2008

Since last general review, based on student interest two of the primary specializations/tracks within the program have been merged. The Software Development and Web Technology tracks have been merged to form the Software Application Development track.

On July 1, 2010 the university merged the College of Applied Science (where the degree was previously housed) with the College of Engineering to form the College of Engineering and Applied Science (CEAS). This merger also coincided with the merger of the Department of Information Technology with the Department of Computer Science to form the School of Computing Sciences and Informatics (CSI) from which the Information Technology undergraduate program is now being offered. These mergers resulted in the loss of three full-time IT faculty members.

C. Options

The program currently requires all students to complete both a primary and secondary track/specialization. The primary track consists of eight courses while the secondary track consists of three courses. The choices for primary track include Networking/Systems and Software Application Development. The choices for secondary tracks include Networking/Systems, Software Application Development, Database, and Digital Media. The courses for these tracks are as follows:

Networking/Systems
20IT317 Network Infrastructure Development
20IT316 System Administration II
20IT319 Network Security
20IT488 Routing & Switching
20IT361 Computer Forensics
20IT415 Systems Integration
20IT411 Enterprise Network Administration
20IT461 Special Topics in Networking

Software Application Development
20IT345 Contemporary Programming I
20IT321 Client-Side Web Development
20IT421 Enterprise Web Development
20IT346 Contemporary Programming II
20IT420 Web Server Application Development
20IT302 Systems Analysis & Design II
20IT475 Programming for Mobile Devices
20IT463 Special Topics in Software Development

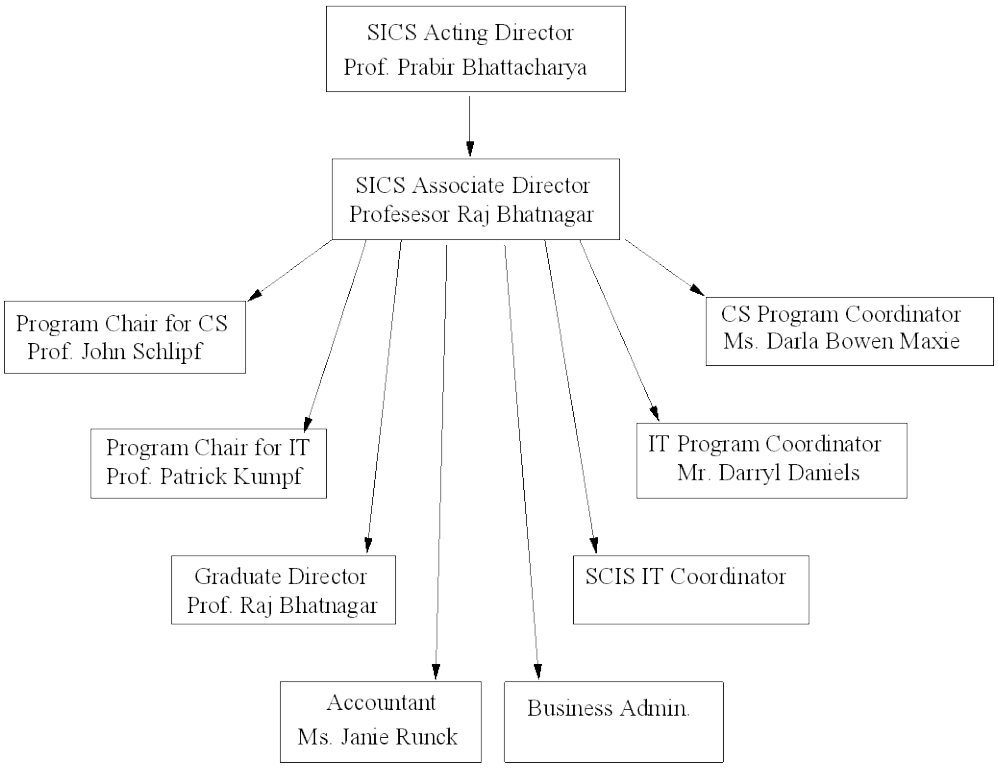
Database

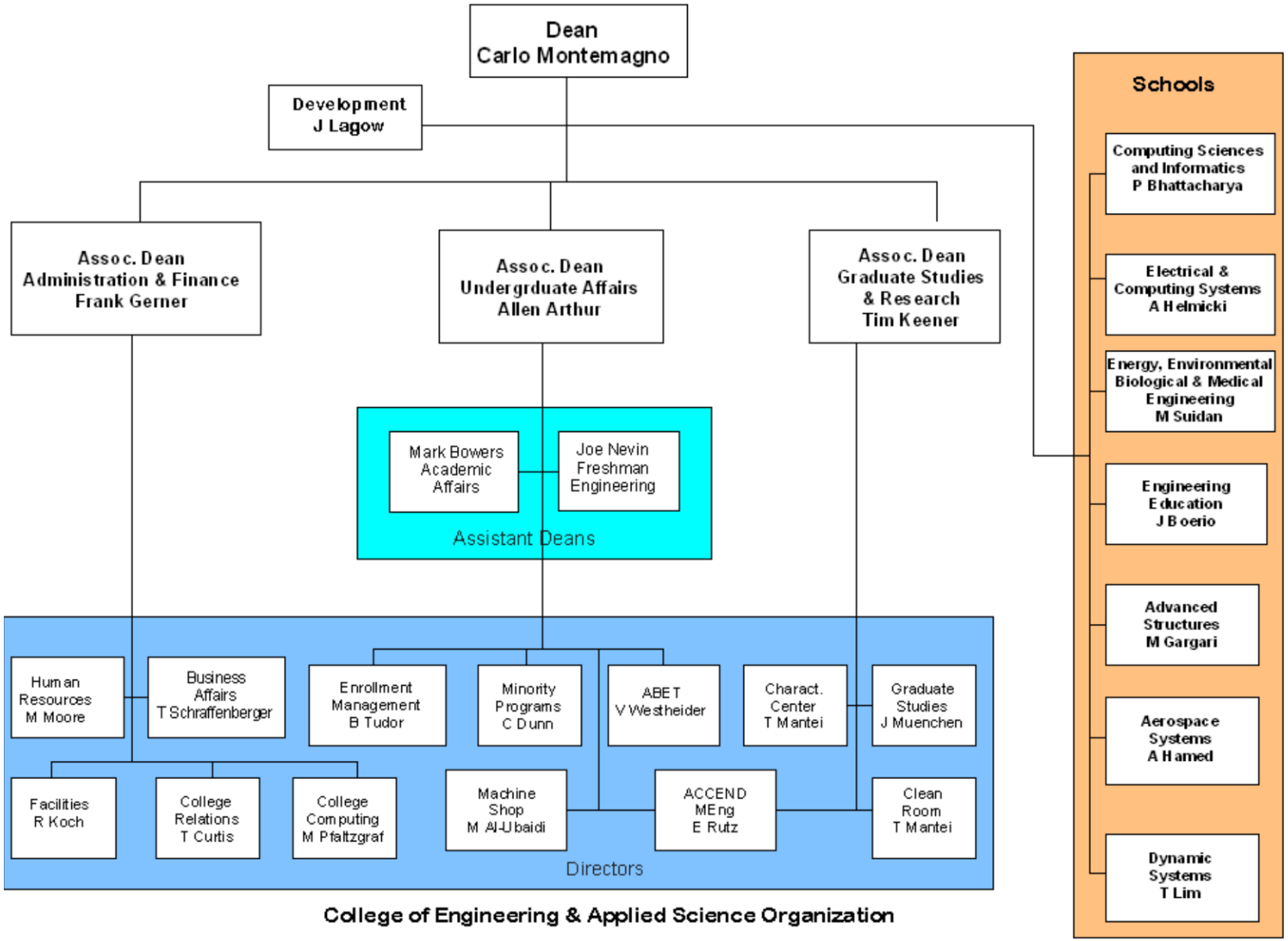
20IT311 Business Intelligence
20IT477 Database Design
20IT480 Database Administration

Digital Media
20IT330 Digital Image Development
20IT332 Digital Audio Development
20IT333 Digital Video Development

D. Organizational Structure

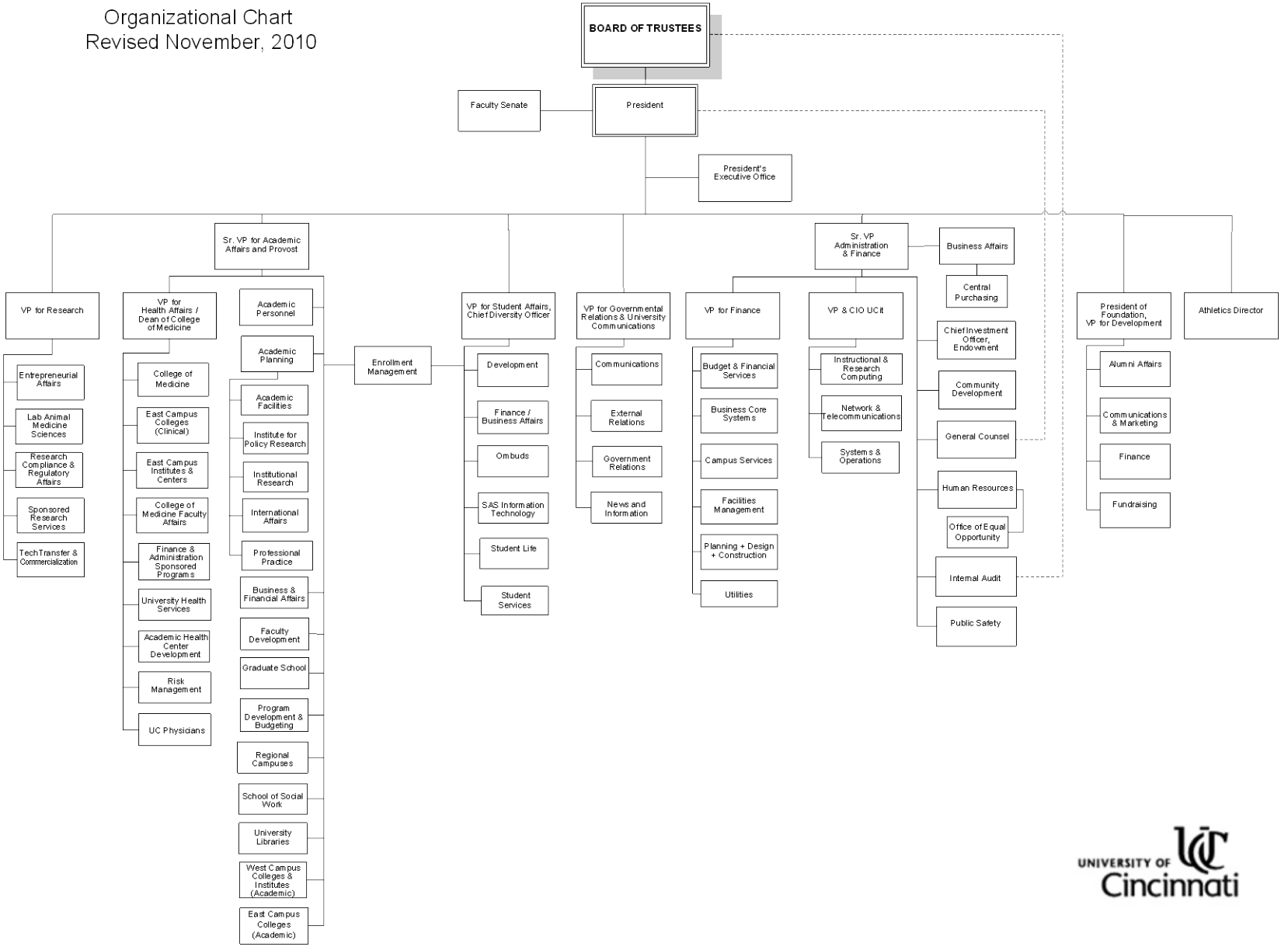
The IT program is coordinated by the Undergraduate IT Program Chair who reports to the School of Computing Sciences and Informatics Director. The School of Computing Sciences and Informatics is one of seven schools in the College of Engineering and Applied Science.





College of Engineering & Applied Science Organization

Organizational Chart
Revised November, 2010



E. Program Delivery Modes

This is a BS program that is delivered face-to-face and available during the day (full-time students requiring five quarters of co-op work experience) and evening (part-time students requiring no co-op). Most courses contain both traditional lecture and laboratory time. A few courses have begun to implement online methods of delivery for some offered sections.

F. Program Locations

The IT program is in a transition towards being offered totally on the "main" or Clifton campus of the University of Cincinnati. During the 2010/2011 academic year, freshman-level courses were offered in Clifton with the remainder on the Victory Parkway/Edgecliff campus. Starting in the Autumn Quarter of the 2011/2012 year, it is anticipated that all courses will be offered in Clifton. Before the merger of colleges, the program was in total being offered only on the Victory Parkway/Edgecliff campus (3 miles from Clifton).

Free shuttle service between campuses is available to students and faculty running on 15-minute intervals each weekday.

G. Deficiencies, Weaknesses or Concerns from Previous Evaluation(s) and the Actions Taken to Address Them

The Final Statement from the 2009-2010 cycle Interim Evaluation reported no shortcomings.

H. Joint Accreditation

N/A

CRITERION 1. STUDENTS

For the sections below, attach any written policies that apply.

A. Student Admissions

Students can apply to the University of Cincinnati through an on-line application process or with a traditional paper application. All applications are sent to a central admissions office for review. The entire application process is handled by the UC Office of Admission. The Undergraduate Student Enrollment office in the College of Engineering and Applied Science (CEAS) acts as liaison to the Office of Admissions and is instrumental in setting admission criteria and making admission decisions for borderline applicants.

Requirements for new students entering the IT program are:

- High School GPA of 2.7 or Greater
- High School Rank in the top 60%
- ACT Scores of 24 Math and 22 Composite or SAT Scores of 590 Math and 1020 Total
- 4 Units of High School English
- 3Units of High School Math
- 2Units of High School (1 of which must be Physics or Chemistry)
- 2Units of High School Social Studies
- 2Units of High School Foreign Languages

Students who do not meet the High School Rank criteria or are deficient in the entrance examination minimums (but still getting at least a 22 Composite ACT or 1020 Total SAT) are offered admission into the college under the EASE Engineering and Applied Science Entrance Program. At the completion of their freshmen year these students can enter the IT program if they have achieved at least a 2.3 cumulative GPA.

B. Evaluating Student Performance

Students are evaluated in each course on a letter grade basis (A, A-, B-, B, B+, C-, C, C+, D-, D, D+, and F). An A counts as a 4.0, a B as a 3.0, down to F as a 0.0. A plus may be added to B, C, and D grades, while a minus may be added to A, B, C, and D grades. A plus adds .3333 to the numeric score, while a minus subtracts .3333.

Students are given audits of their progress in terms of completing curriculum requirements. Students who have not taken pre-requisite courses are identified during this review. Ann Hoehn in student services is responsible for reviewing students in academic difficulty and making a determination regarding probation/suspension. Those placed on probation were told to meet with their academic advisors.

Students who are at risk for not succeeding in their degree program requirements are identified and actions are suggested to the Committee on Academic Standards. Of the possible options, the program representative chooses what action should be taken. Students are usually required to see their advisor, and the additional actions include being warned,

voluntarily reassigned to a different class year, demoted, put on probation, suspended, or dismissed from the CEAS. Each of these decisions can be appealed.

When registering for classes students are shown the prerequisites required for the courses they choose. Advisors inform students to pay attention to these alerts and not sign up for courses in which they do not meet the requirements. Faculty also regularly announce in class and post on syllabi the prerequisites for the course, some go so far as to ask students to sign documents stating that they have met the prerequisites for the course. Advisors pay attention to courses that students sign up for and contact students who make it a habit of signing up for courses for which they have not met the prerequisite. If students follow the published curriculum, all prerequisites will be satisfied.

C. Transfer Students and Transfer Courses

For students seeking to transfer into the IT program (from other College programs, from other programs in the University of Cincinnati, or from other institutions), the IT Program Chair works with the students to ensure that they meet the transfer requirements and to plan their future course of study in order to meet all program requirements for graduation.

Students seeking to transfer into IT from other institutions are handled on an individualized basis. Advanced Standing can be obtained for college-level courses taken at other accredited institutions for courses in which a C- grade or better was earned can be transferred, as well as courses designated as passing (for pass-fail credit) if the criterion for passing is C- or better. In addition, in compliance with the Ohio Board of Regents (OBR) requirements, all courses earned toward an Associate of Arts or an Associate of Science degree with a cumulative GPA of at least 2.0 can be transferred with a grade of D or better. Credit hours are granted on a quarter basis (1.0 semester credit hour counts as 1.5 quarter credit hours.) The ITProgram Chair, works with the student's academic records from previously attended institutions. The Program Chair looks up allcourses in the institution's course bulletin and determines correspondences to the program curricular requirements where possible. Applicants who have completed OBR Transfer Assurance Guides (TAGs) courses (groups of foundational courses that represent a commonly accepted pathway to a bachelor's degree) courses are credited in accordance with the OBR guidelines.

Students need to hold a 2.75 college GPA to transfer into the IT program.

D. Advising and Career Guidance

The IT program has a staff academic advisor available to students, Darryl Daniels. Overseeing all advising is the IT Program Chair. The Program Chair, along with IT faculty, work with the advisor and aids in solving any problems that may arise. Prior to the 2010-2011 academic year, IT students were assigned faculty advisors rather than a staff advisor. Because of this change to a staff advisor, several upperclassmen continue to reach out to faculty for advising in addition to or in lieu of the staff advisor.

The Career Development Center (CDC) at the University of Cincinnati offers assistance to graduating seniors to help prepare them for post-graduation destination job interviews (primarily with corporate industry and government agencies). The assistance consists of job

seeking strategies, resume writing, interview preparation, information gathering and job negotiating skills. Assistance is provided to individual students and/or through formal classes, such as Professional Development II. CDC also organizes and communicates employment opportunities through on-line job postings, and six career fairs, which enable national, regional, and local employers to identify and recruit UC CEAS talent through traditional on-campus venues, as well as state of the art "virtual" gatherings. Students also seek advise regularly from IT faculty concerning career choice and direction.

E. Work in Lieu of Courses

Students in the IT program are eligible to gain credit by experience for up to 18 credit hours of IT coursework, all courses except the Senior Design capstone courses are eligible for obtaining credit in this manner. This is done through the University of Cincinnati's Transfer and Lifelong Learning Center (TLLC) by the student petitioning to have a Prior Learning Assessment (PLA) performed by IT faculty for courses in which they believe they have already attained the outcomes.

The requirements and process are documented online (http://admissions.uc.edu/transfer/transfer_prior.html) and summarized here:

Requirements

- Student must be matriculated in a college at the University of Cincinnati with a declared major.
- The student must also be currently enrolled and in good standing – with a 2.00 or higher cumulative grade point average.
- The student must be aware that the evaluation process for Prior Learning Assessment can sometimes be a lengthy process. As such, the student should be at least two quarters away from graduation or willing to accept the possibility that the evaluation may not be completed by the time of expected graduation.
- The student must prepare a competency statement or other appropriate documentation to show evidence of having attained special knowledge or skill in the desired course. This statement must be submitted with the application for the Prior Learning Assessment.
- The student may seek evaluation only for those courses for which he/she is not currently registered or has not previously audited or failed.
- Prior Learning Assessment, as with other advanced standing credit, generally will not be considered toward the college residency requirement.

PLA Procedure

1. Student contacts the TLLC for information. TLLC provides information and an application packet.
2. Student completes the application packet and returns it with the entire fee for the evaluation to the TLLC.
3. TLLC will submit the completed application packet to the appropriate college for approval.
4. The department responsible for the course will complete an initial review of the applicant's packet. The department will follow-up with the TLLC and indicate whether the applicant's packet is accepted or rejected, and the type of evaluation to be conducted.

If rejected, the TLLC will send a letter stating that the application has been rejected and the evaluation fee, minus a $50 application fee, will be returned.

5. If the application is accepted, the student will be contacted by the faculty evaluator and the formal review process will begin. Upon completion of the evaluation by the faculty evaluator, the TLLC is notified of the decision. TLLC will notify the student of the outcome of the evaluation.
6. A positive outcome (pass) results in the awarding of credit which is posted as advanced standing credits. A negative outcome (fail) results in no award of credit. The evaluation fee covers the cost of completing the evaluation and, as such, is non-refundable, regardless of the outcome of the evaluation.
7. The student's file will then be forwarded to the student's home college and become part of the student's permanent record.
8. The awarding of credit for PLA occurs at the discretion of the faculty evaluator. The decision is final.

The faculty member assesses the prior learning through various methods depending on the student and courses. These assessments include such things as: written examinations, lab/hands-on examinations, demonstration of past/current work projects.

F. Graduation Requirements

Degree Awarded:
Bachelor of Science in Information Technology

Total Credit Hours:
They must earn the minimum of 183 credit hours, and meet the following requirements:

Cumulative QPA (CQPA):
They must earn a cumulative grade point average of 2.0000 or higher in all work taken while matriculated in the College of Engineering and Applied Science. (Note: the College uses the term "quality point average (QPA)" synonymously with "grade point average".) Four decimal points are deliberately included beyond the decimal to clarify that rounding will not be used to meet QPA requirements, e.g., QPA of 1.996 might be interpreted as satisfying a requirement of 2.00, but not a 2.0000 standard.

Students must earn a cumulative grade point average of 2.0000 or higher in all course work (required and elective) taken in their major area, as defined here:

Course Requirements:
Students must complete all courses individually required on their curriculum check sheet as specified by class and by major. They must also complete the required number of credits in each category of electives as shown on the Degree Program Audits as specified by class and major. The courses must be completed either by:

1. Earned grades of “A”, “B”, “C”, or “D” with appropriate +/- grading , except for the Mathematics prerequisites that require a grade of “C” or better;
2. “P” grades (only as permitted by the College or the student’s academic unit);
3. “Advanced Standing (AS) or Advanced Placement (AP) credit;
4. A course substitution made by means of an approved petition; or
5. A waiver of credits approved upon transfer into the College or in conjunction with subsequent approval of Advanced Standing (subject to several strict limitations, including a maximum of two credits overall).

Students must complete all professional practice quarters available to them from their time of initial co-op placement through the Sumner Quarter of the senior year. This is normally five quarters, but can be more if a student is reassigned or demoted prior to the senior year and can be less for transfer students or those whose entry into the co-op portion of their curriculum is delayed or quarters are waived due to equivalent IT work experience. The minimum requirement is satisfactory completion of the last four available practice quarters prior to graduation.

The College Office of Academic Affairs reviews each senior’s records to insure that all required course work, all Humanities/Social Science requirements, total elective hours, and QPA requirements are satisfied for each student. Curriculum check sheets and Degree Program Audit (DPA) printouts are maintained for each student for this purpose. The Degree Program Audit (DPA) is University-purchased and maintained software designed to track students’ progress toward their degrees. Each college works with the University Registrar’s Office to adapt the DPA to its programs. Duplicate copies of the DPA’s for each senior are sent to the departments (now schools) for use by the students and their advisors. In addition, the former Departments (now Schools) maintain check sheets and are also responsible for tracking the progress of their students. In particular, they must inure that elective requirements and design hours as specified by their programs are satisfied. Throughout the senior year, the College Office, working with theDepartments/Schools, monitors the students’ records and notifies students, through their advisors, of potential graduation problems. All students are encouraged to contact the College Office, or their departmental/school office, if they have any questions concerning their check sheets or Degree Program Audit printouts.

In October or November, the College sends an informational mailing to each senior. In addition to general information about graduation and degree requirements, the letter contains an “Application for Degree” form. These are filled out by the students, collected by the departments and returned to the College Office. Applicants are checked off a roster of seniors and the senior advisors are notified of any missing applications. The applications are sent to the University Registrar’s Office, which compiles a University-wide list and then provides the College Office with a list.

G. Transcripts of Recent Graduates

The program will provide transcripts from some of the most recent graduates to the visiting team along with any needed explanation of how the transcripts are to be interpreted. These transcripts will be requested separately by the team chair.

CRITERION 2. PROGRAM EDUCATIONAL OBJECTIVES

A. Mission Statement

The University of Cincinnati serves the people of Ohio, the nation, and the world as a premier, public, urban research university dedicated to undergraduate, graduate, and professional education, experience-based learning, and research. We are committed to excellence and diversity in our students, faculty, staff, and all of our activities. We provide an inclusive environment where innovation and freedom of intellectual inquiry flourish. Through scholarship, service, partnerships, and leadership, we create opportunity, develop educated and engaged citizens, enhance the economy and enrich our University, city, state and global community.

B. Program Educational Objectives

Graduates of the IT program will be prepared to gain employment as an IT professional.

Graduates of the IT program will function effectively as individuals and team members in the workplace, growing into highly technical or project management and leadership roles.

Graduates of the IT program will pursue life-long learning, and obtain the tools to successfully identify and adapt to ever changing technologies.

Graduates of the IT program, if they are inclined, will be able to continue their formal education and be accepted to relevant graduate degree programs and succeed in these studies.

These are posted on the program's website (http://it.cas.uc.edu) under Current Students then Curriculum or specifically at (http://it.cas.uc.edu/IT/Default.aspx?ID=Curriculum&Cat=Future%20Students)

C. Consistency of the Program Educational Objectives with the Mission of the Institution

The University of Cincinnati's mission points to "experience-based learning," this is where there is a direct correlation to the program objectives for Information Technology. The mission also points to "develop educated and engaged citizens" which ties to the IT objectives for pursuing life-long learning and ability to continue their education. Finally the mission states that the institution will "enhance the economy and enrich our University, city, state and global community" which is met through the IT objective of preparing students for gainful employment.

D. Program Constituencies

Stakeholders: students (past, current, and future), faculty, industry (all organizations who hire/utilize IT professionals), graduate degree programs, community at large.

Recent graduates and employers certainly directly benefit from graduates of this IT program being employable. Past and future students also benefit because quality of the program will reflect on their future employability, they will always have a connection to this program.

Being able to work within industry and holding a desire/ability to be lifelong learners will also benefit graduates, enabling them to progress in their careers. Employers will be able to prosper because of this continued growth of graduates of the IT program. The IT graduates will not become a commodity that only knows a single technology but be able to adapt to the constant change and anticipate such change.

Graduate degree programs will benefit from IT graduates being ready for graduate study, having learned the broad knowledge of information technologies and hold the ability to continue their studies in depth.

The community at large will benefit from IT graduates helping to sustain and grow the industrial base, particularly in the Cincinnati region. Unlike other disciplines, IT professionals are needed in every type of organization and industry. Many of the IT students and graduates work for various non-profit/community based agencies in the area as employees, consultants, or volunteers. With a unique technical skill set they can improve these services for the community.

E. Process for Revision of the Program Educational Objectives

Each year the IT Faculty and the Industrial Advisory Board will be presented with the current objectives and asked for input regarding potential changes based on changes in the industry/discipline and/or needs of the students/university. This policy of looking specifically at objectives to determine if they are still relevant to the program will begin in the 2011/2012 school year and follow the same process used in other changes within the Information Technology program as initially defined in 2007:

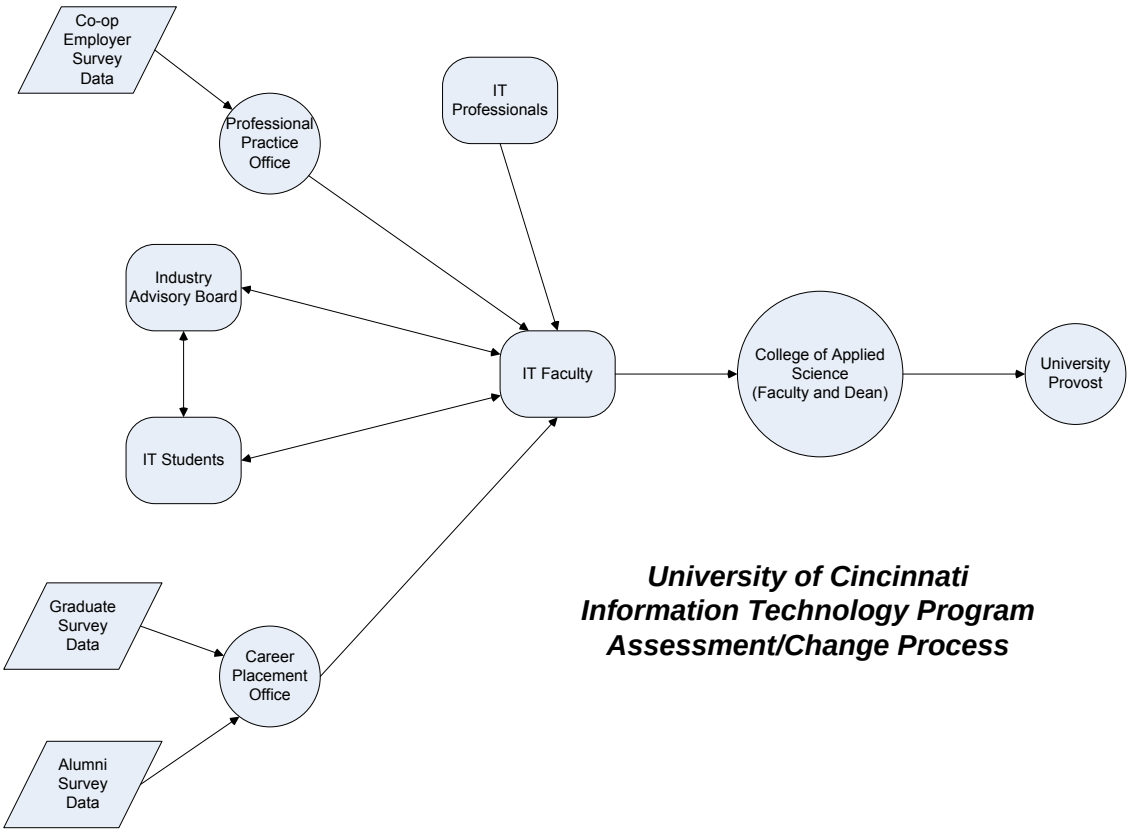
1. IT Faculty get input from the assessment surveys (graduate, alumni, co-op employer) and its constituents (students, Industry Board, IT professionals) for potential changes. Because of the nature of the student/faculty relationship, input is sometimes obtained from them through the Industry Board.

2. IT Faculty formulates a tentative change based on these inputs.

3. IT Faculty work with the students and Industry Board for finalizing the change.

4. IT Faculty presents the change to the college faculty and administration for approval.

5. The change is then presented to the University Provost (if necessary) for final approval when the change is made official.



University of Cincinnati
Information Technology Program
Assessment/Change Process

CRITERION 3. STUDENT OUTCOMES

A. Student Outcomes

1. Develop Computer Applications
   1.1 Develop fundamental programming skills
   1.2 Program effectively within the student's specialty area
   1.3 Apply a development life cycle to a problem
   1.4 Design and develop a software prototype
   1.5 Use multiple computer system platforms
   1.6 Comprehend System Integration and Architecture principles
2. Develop Database Applications
   2.1 Design a relational database
   2.2 Implement a relational database
   2.3 Query a relational database
   2.4 Secure database management systems
   2.5 Integrate relational database into applications
3. Implement and Maintain Networking & System Infrastructure
   3.1 Apply and explain network protocols
   3.2 Implement a variety of network configurations
   3.3 Install and Administer network services
   3.4 Protect and secure users' information on a computer network
   3.5 Protect and secure organizations' computer network
4. Design and Implement internet-based applications
   4.1 Design & implement a website using appropriate design guidelines
   4.2 Understand and implement elements of effective online users' experience
5. Understand and use digital media
   5.1 Understand the elements of capturing, editing and producing digital media (image, audio and video)
   5.2 Integrate digital media elements in presentations and other applications
6. Practice User-centered Design and Deployment
   6.1 Identify needs, analyze tasks, and develop profiles of users
   6.2 Develop and evaluate effective user interaction designs
   6.3 Practice user-centered design development and deployment
   6.4 Evaluate usability of an application
7. Implement and Apply Project Management Principles
   7.1 Understand, develop and follow a project plan
   7.2 Develop Gantt & PERT charts and critical path analysis
8. Communicate Effectively
   8.1 Make effective oral presentations
   8.2 Communicate effectively in written form
   8.3 Communicate effectively with peers, supervisors and clients
   8.4 Communicate effectively - information architecture, navigation, interaction, graphically and with media
9. Interact Effectively within the Organization
   9.1 Participate effectively as a team member

9.2 Be able to work effectively with end users
9.3 Have the ability to be a change agent within an organization
9.4 Comprehend and apply project management principles
10. Describe and Practice Ethical and Professional Behaviors
10.1Practice ethical and professional behaviors
10.2 Explain the rationale for security practices
10.3 Apply accepted security practices
10.4 Recognize the need for, and have the ability to seek out and successfully pursue continued learning throughout their career
11. Apply Appropriate Problem Solving Skills in:
11.1 Web Development
11.2 Interactive Multimedia Development
11.3 Software Development
11.4 Network and System Administration
11.5 Database design, administration and integration

These are posted on the program's website (http://it.cas.uc.edu) under Current Students then Curriculum or specifically at (http://it.cas.uc.edu/IT/Default.aspx?ID=Curriculum&Cat=Future%20Students).

B. Relationship of Student Outcomes to Program Educational Objectives

The program outcomes directly feed into each of the program objectives. Looking at each outcome shows its relevance to all four of the objectives (obtaining employment, career advancement, commitment to lifelong learning, and continuing a formal education).

C. Process for the Establishment and Revision of the Student Outcomes

Each year the IT Faculty and the Industrial Advisory Board will be presented with the current student objectives and asked for input regarding potential changes based on changes in the industry/discipline and/or needs of the students/university. This policy will begin in the 2011/2012 school year.This policy of looking specifically at objectives to determine if they are still relevant to the program will begin in the 2011/2012 school year and follow the same process used in other changes within the Information Technology program as initially defined in 2007:

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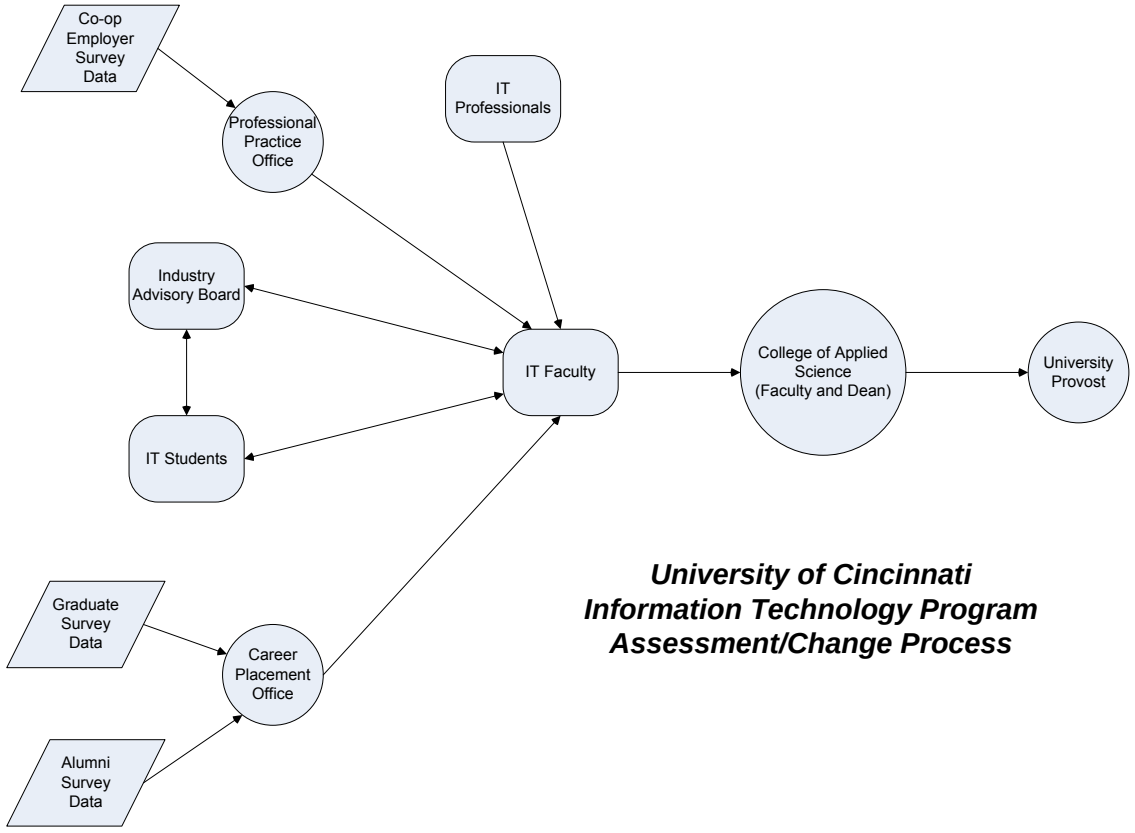


While not stemming from a formal meeting to discuss changes in the student outcomes, a similar process was used for a change in the recent past. Outcome 10.4 was changed to better match the ABET guidelines. This change was voted upon at a department faculty meeting on April 28, 2009.

D. Enabled Student Characteristics

All characteristics (a) through (i) and the IT specific (j) through (n) are met through the program's student outcomes. See the matrix below showing which outcome matches to the characteristics.

UC IT Degree Outcomes Checksheet - Degree outcomes satisfying ABET General and IT program attributes.

		(a) An ability to apply knowledge of computing and mathematics appropriate to the discipline;	(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;	(c) An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;	(d) An ability to function effectively on teams to accomplish a common goal;	(e) An understanding of professional, ethical, legal, security, and social issues and responsibilities;	(f) An ability to communicate effectively with a range of audiences;	(g) An ability to analyze the local and global impact of computing on individuals, organizations and society, including ethical, legal, security and global policy issues;	(h) Recognition of the need for, and an ability to engage in, continuing professional development;	(i) An ability to use current techniques, skills, and tools necessary for computing practices.
Develop Computer Applications	**1**									
Develop fundamental programming skills	1.1	×								×
Program effectively within the student's specialty area	1.2									×
Apply a development life cycle to a problem	1.3			×						×
Design and develop a software prototype	1.4			×						×
Use multiple computer system platforms	1.5									×
Comprehend System Integration and Architecture principles	1.6			×						×
Develop Database Applications	**2**			×						
Design a relational database	2.1			×						×
Implement a relational database	2.2									×
Query a relational database	2.3									×
Secure database management systems	2.4									×
Integrate relational database into applications	2.5			×						×
Implement and Maintain Networking & System Infrastructure	**3**									
Apply and explain network protocols	3.1									×
Implement a variety of network configurations	3.2			×						×
Install and administer network services	3.3			×						×
Protect and secure users' information on a computer network	3.4					×		×		×
Protect and secure organizations' computer network	3.5					×		×		×
Design and Implement Internet-Based Applications	**4**									
Design & implement a website using appropriate design guidelines	4.1			×						×
Understand and implement elements of effective online users' experience	4.2	×		×						
Understand and Use Digital Media	**5**									
Understand the elements of capturing, editing and producing digital media (image, audio and video)	5.1									×
Integrate digital media elements in presentations and other applications	5.2									×
Practice User-Centered Design and Deployment	**6**									
Identify needs, analyze tasks, and develop profiles of users	6.1			×			×			
Develop and evaluate effective user interaction designs	6.2	×		×						
Practice user-centered design development and deployment	6.3			×						
Evaluate usability of an application	6.4	×		×						
Implement and Apply Project Management Principles	**7**									
Understand, develop and follow a project plan	7.1									
Develop Gantt & PERT charts and critical path analysis	7.2									
Communicate Effectively	**8**									
Make effective oral presentations	8.1						×			
Communicate effectively in written form	8.2						×			
Communicate effectively with peers, supervisors and clients	8.3						×			
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4						×			
Interact Effectively within the Organization	**9**									
Participate effectively as a team member	9.1				×		×			
Be able to work effectively with end users	9.2						×			
Have the ability to be a change agent within an organization	9.3									
Comprehend and apply project management principles	9.4									
Describe and Practice Ethical and Professional Behaviors	**10**									
Practice ethical and professional behaviors	10.1					×		×		
Explain the rationale for security practices	10.2					×		×		
Apply accepted security practices	10.3					×		×		
Recognize the need for continued learning throughout their career	10.4								×	
Apply Appropriate Problem Solving Skills in:	**11**									
Web Development	11.1	×	×						×	×
Interactive Multimedia Development	11.2	×	×						×	×
Software Development	11.3	×	×						×	×
Network and System Administration	11.4	×	×						×	×
Database design, administration and integration	11.5	×	×						×	×

UC IT Degree Outcomes Checksheet - Degree outcomes satisfying ABET General and IT program attributes.

		(j) An ability to use and apply current technical concepts and practices in the core information technologies;	(k) An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems;	(l) An ability to effectively integrate IT-based solutions into the user environment;	(m) An understanding of best practices and standards and their application;	(n) An ability to assist in the creation of an effective project plan.
Develop Computer Applications	**1**					
Develop fundamental programming skills	1.1	×			×	
Program effectively within the student's specialty area	1.2					
Apply a development life cycle to a problem	1.3					
Design and develop a software prototype	1.4					
Use multiple computer system platforms	1.5					
Comprehend System Integration and Architecture principles	1.6					
Develop Database Applications	**2**					
Design a relational database	2.1	×			×	
Implement a relational database	2.2	×			×	
Query a relational database	2.3					
Secure database management systems	2.4					
Integrate relational database into applications	2.5					
Implement and Maintain Networking & System Infrastructure	**3**					
Apply and explain network protocols	3.1				×	
Implement a variety of network configurations	3.2	×			×	
Install and administer network services	3.3	×			×	
Protect and secure users' information on a computer network	3.4	×				
Protect and secure organizations' computer network	3.5	×				
Design and Implement Internet-Based Applications	**4**					
Design & implement a website using appropriate design guidelines	4.1	×			×	
Understand and implement elements of effective online users' experience	4.2	×				
Understand and Use Digital Media	**5**					
Understand the elements of capturing, editing and producing digital media (image, audio and video)	5.1	×				
Integrate digital media elements in presentations and other applications	5.2	×				
Practice User-Centered Design and Deployment	**6**					
Identify needs, analyze tasks, and develop profiles of users	6.1		×	×		
Develop and evaluate effective user interaction designs	6.2		×	×		
Practice user-centered design development and deployment	6.3		×	×		
Evaluate usability of an application	6.4		×	×		
Implement and Apply Project Management Principles	**7**					
Understand, develop and follow a project plan	7.1					×
Develop Gantt & PERT charts and critical path analysis	7.2					×
Communicate Effectively	**8**					
Make effective oral presentations	8.1					
Communicate effectively in written form	8.2					
Communicate effectively with peers, supervisors and clients	8.3					
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4					
Interact Effectively within the Organization	**9**					
Participate effectively as a team member	9.1					
Be able to work effectively with end users	9.2			×		
Have the ability to be a change agent within an organization	9.3			×		
Comprehend and apply project management principles	9.4			×		×
Describe and Practice Ethical and Professional Behaviors	**10**					
Practice ethical and professional behaviors	10.1					
Explain the rationale for security practices	10.2					
Apply accepted security practices	10.3					
Recognize the need for continued learning throughout their career	10.4					
Apply Appropriate Problem Solving Skills in:	**11**					
Web Development	11.1	×				
Interactive Multimedia Development	11.2	×				
Software Development	11.3	×				
Network and System Administration	11.4	×				
Database design, administration and integration	11.5	×				

CRITERION 4. CONTINUOUS IMPROVEMENT

A. Program Educational Objectives

Results and documentation of the Program Educational Objectives assessments are held by the college administration. Methodology, frequency, and summary data for these assessments against each objective is as follows:

Objective 1 - Graduates of the IT program will be prepared to gain employment as an IT professional.

The IT graduate survey (see Appendix E) is primarily used to measure this objective. This is administered upon graduation from the IT program. The Office of Career Placement within the college delivers this survey and accumulates the data.

Percentage of ITBS graduates employed (or not seeking employment) at the time of graduation:
2010 Graduates: Not Available
2009 Graduates: 79% (22 of 28) * Highest in College
2008 Graduates: 100% (22 of 22)
2007 Graduates: 100% (28 of 28)
2006 Graduates: 91% (10 of 11)
2005 Graduates: 100% (2 of 2)

Data clearly shows that graduates of the IT program are regularly in high demand. 2010 survey it seems was not completed by the college after the college merger, this may also explain the lack of detail in the results of the 2009 survey.

Objective 2 - Graduates of the IT program will function effectively as individuals and team members in the workplace, growing into highly technical or project management and leadership roles.

Objective 3- Graduates of the IT program will pursue life-long learning, and obtain the tools to successfully identify and adapt to ever changing technologies.

The Alumni Survey and Co-op Employer Survey are used to measure these objectives (see Appendix F and G).

The Alumni Survey Report (Appendix F) last administered in 2009 includes data from IT alumni as well as those from programs that melded to form the current IT program (Computer Science Technology and Information Engineering Technology).

Under the Employment section of this report, it notes that all respondents have shown "advancement in career via title and advances in salary." This shows that the **Objective 2** above is being met for those alumni respondents. In addition, in the self-assessment section of the survey on a likert scale of 1 (improvement needed) to 5 (strength), all respondents rated

themselves a 4 or a 5 on the statement "Functions effectively on Teams exhibiting good people skills." This too points to a positive measure of **Objective 2**.

Using the Alumni Survey Report to assess **Objective 3** we again see indications that the objective is being met. The majority of respondents to the statement, "Participates in continuing education/expanding skill," give a positive response of 4 or 5. While several give a lukewarm or negative response (3 or 2) to the statement, I wonder if alumni are doing this without calling what they do "continuing education." As IT professionals (all of whom have advanced in their careers) it seems impossible that they did not pursue some form of continuing education just to keep up with changes in technology even if that meant using online tools to learn about a new technology or how to integrate something in their environment. Additionally some of the respondents point to certificates or licensures they have obtained since leaving school.

The Co-op Employer Survey is administered each quarter one of the IT students completes a co-op assignment. Students are required to work in industry for five quarters prior to graduation. While this data is gathered about students prior to graduation rather than "a few years after graduation" as is defined by a Program Educational Objectives, the results can certainly cooberate the findings of the Alumni self-assessments as they are observed very close the graduation date of students and it can be assumed that students certainly would not loose these abilities within a few years of leaving the program.

The following table shows summary data from this employer survey based on IT student performance on the job in their final quarter of coop (near the end of graduation). The numbers are based on a likert scale: 5 – Excellent (the best or one of the best in this category), 4 – Good (above average but not excellent), 3 – Satisfactory (average when compared to others in this category), 2 – Poor (lacking in some important aspects or less than satisfactory), and 1 – Unsatisfactory (lack of ability, failure to use it, or any other cause).

As the table indicates, the UC IT students nearing graduation receive high marks (averaging higher than good in nearly all areas and nearing Excellent for overall).The following are results from the Co-op Employer Survey and shows the performance skills being evaluated external constituents which point to the fact that **Objectives 2 and 3** are being met for graduates of the IT program.

Co-op Employer Data of Information Technology Students

Communication	**4.23**
Exhibits good listening and questioning skills	4.38
Makes effective presentations	4.20
Speaks with clarity and confidence	4.14
Writes clearly and concisely	4.21
Conceptual/Analytical Ability	**4.34**
Demonstrates original and creative thinking	4.34
Evaluates situations effectively	4.34
Identifies and suggests new ideas	4.38

Solves problems/makes decisions	4.31
Design and Experimental Skills	**4.40**
Analyzes and interprets data efficiently	4.28
Demonstrates ability to design and conduct experiments	4.52
Displays ability to design a component, system or process	4.42
Evaluation of Work Habits	**4.40**
Attendance	4.55
Professional attitude toward work assigned	4.31
Punctuality	4.48
Quality of work produced	4.34
Volume of work produced	4.31
Leadership	**4.11**
Gives direction, guidance and training	4.12
Manages conflict effectively	4.10
Motivates others to succeed	4.11
Learning/Theory and Practice	**4.44**
Accesses and applies specialized knowledge	4.48
Applies classroom learning to work situations	4.38
Learns new material quickly	4.45
Organization/Planning	**4.19**
Allocates time to meet deadlines	4.28
Manages projects and/or other resources effectively	4.19
Manages several tasks at once	4.28
Sets goals and prioritizes	4.03
Professional Qualities	**4.37**
Assumes responsibility/accountable for actions	4.34
Demonstrates a positive attitude toward change	4.36
Exhibits self-confidence	4.21
Possesses honesty/integrity/personal ethics	4.55
Shows initiative/is self-motivated	4.38
Teamwork	**4.45**
Demonstrates flexibility/adaptability	4.34
Functions well on multidisciplinary team	4.44
Understands/contributes to the organization's goals	4.45
Works effectively with others	4.55
Technology	**4.45**

Understands complex systems and their interrelationships	4.29
Understands the technology of the discipline	4.43
Uses technology, tools, and information	4.62
Work Culture	**4.35**
Recognizes political/social implications of actions	4.19
Respects diversity	4.48
Understands/works within the culture of the group	4.38
Employer's Overall Evaluation (Grades)	**4.55**

The above data was accumulated in quarters Autumn 07, Winter 08, Spring 08, Summer 08, Autumn 08, Winter 09, Spring 09, Summer 09,Autumn 09, Winter 10, Spring 10, Summer 10. The n value for all co-ops assessments is 300.

Objective 4 - Graduates of the IT program, if they are inclined, will be able to continue their formal education and be accepted to relevant graduate degree programs and succeed in these studies.

This objective is measured using the Graduate Survey and Alumni Survey (see Appendix E and F).

While none of the respondents from the most recent graduate surveys reported going on to graduate school, one respondent from the Alumni Survey also reported being accepted into and pursuing a graduate degree. Beyond the respondents noted, faculty in the IT program know of others who indeed are pursuing graduate work or have shown an interest in doing so in the future (asking when we will start offering graduate programs in IT at UC).

B. Student Outcomes

Program outcomes are measured within courses offered by the program (Appendix H) as well as through co-op employer surveys (Appendix G). The following table shows where each program outcome is being assessed in the core curriculum (requirements of all IT students) and whether based on the most recent assessments they were met. All outcomes are being assessed within at least one course in the core curriculum so it is assured that all outcomes are being measured by all graduates of the IT program, regardless of their chosen specialty/track. Course coordinators are responsible for collecting and reporting the data. Assessment is to be performed once every two years for each course/outcome in a random section of the course. For the co-op employer survey, the office of professional practice delivers the survey and provides the IT faculty with the resulting data. This is done each quarter.

UC IT Degree Outcomes Assessment Summary 2010-2011

(↑= Met, ↓= Not Met)

		20IT170 Intro to IT	20IT171 Programming Logic & Methods	20IT200 Computational Concepts	20IT205 Computer Programming I	20IT206 Computer Programming II	20IT207 Computer Programming III	20IT209 Intro to Database	20IT220 Fund of Web Development	20IT230 Fund of Digital Media	20IT274 Computer Hardware	20IT275 Intro to Networking	20IT299 Implications of IT	20IT301 Systems Analysis & Design I	20IT309 Database Management	20IT313 Info Security and Privacy	20IT315 System Administration I	20IT430 Human Computer Interaction	20IT455 Management in IT	20IT490 Senior Design	20IT493 Senior Design Tech Practicum I	20IT494 Senior Design Tech Practicum II	20IT496 Senior Design Project Mgmt I	20IT497 Senior Design Project Mgmt II	Co-op Work Experience
Develop Computer Applications	**1**																								
Develop fundamental programming skills	1.1		↑	↑	↑	↑	↑																		
Program effectively within the student's specialty area	1.2				↑	↑	↑																		
Apply a development life cycle to a problem	1.3				↑	↑	↑							↑				↑							
Design and develop a software prototype	1.4																	↑							
Use multiple computer system platforms	1.5																↑								
Comprehend system integration and architecture principles	1.6													↑											
Develop Database Applications	**2**																								
Design a relational database	2.1							↑							↑										
Implement a relational database	2.2							↑							↑										
Query a relational database	2.3							↑							↑										
Secure database management systems	2.4														↓										
Integrate relational database into applications	2.5						↑								↑										
Implement and Maintain Networking & System	**3**																								
Apply and explain network protocols	3.1											↓													
Implement a variety of network configurations	3.2											↓													
Install and administer network services	3.3																↓								
Protect and secure users' information on a computer network	3.4											↑					↑								
Protect and secure organizations' computer network	3.5															↑									
Design and Implement Internet-Based Applications	**4**																								
Design & implement a website using appropriate design	4.1								↑																
Understand and implement elements of effective online users' experience	4.2								↑																
Understand and Use Digital Media	**5**																								
Understand the elements of capturing, editing and producing digital media (image, audio and video)	5.1									↑															
Integrate digital media elements in presentations and other applications	5.2									↑															
Practice User-Centered Design and Deployment	**6**																								
Identify needs, analyze tasks, and develop profiles of users	6.1								↑																
Develop and evaluate effective user interaction designs	6.2																	↑							
Practice user-centered design development and deployment	6.3								↑																
Evaluate usability of an application	6.4																			↓					
Implement and Apply Project Management Principles	**7**																								
Understand, develop and follow a project plan	7.1																		↑			↑	↑		
Develop Gantt & PERT charts and critical path analysis	7.2																		↑			↑	↑		
Communicate Effectively	**8**																								
Make effective oral presentations	8.1								↓				↑						↑			↑			↑
Communicate effectively in written form	8.2								↓										↑			↑			↑
Communicate effectively with peers, supervisors and clients	8.3																			↑					↑
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4									↑								↑							
Interact Effectively within the Organization	**9**																								
Participate effectively as a team member	9.1												↑						↑						↑
Be able to work effectively with end users	9.2																			↑					↑
Have the ability to be a change agent within an organization	9.3																		↑						↑
Comprehend and apply project management principles	9.4																						↑	↑	
Describe and Practice Ethical and Professional Behaviors	**10**																								
Practice ethical and professional behaviors	10.1												↑												↑
Explain the rationale for security practices	10.2															↓									
Apply accepted security practices	10.3															↑									
Recognize the need for, and have the ability to seek out and successfully pursue continued learning throughout their career	10.4																	↑							↑
Apply Appropriate Problem Solving Skills in:	**11**																								
Web Development	11.1								↑																
Interactive Multimedia Development	11.2									↑															
Software Development	11.3													↑											
Network and System Administration	11.4											↑													
Database design, administration and integration	11.5														↑										

Specific assessment tools and associated data can be found in Appendix H. As assessment goals are not met, course coordinators with the faculty will take action towards program improvement.

Outcome assessments from core courses are found in this document, noting that all graduates of the IT program have taken these courses.

Each outcome assessment has a different expected level of attainment based on the assessment mechanism used (generally between 70% and 90%).

Data is documented in a shared folder accessible by all IT faculty.

A look at the student outcome assessment summary above shows that most of the student outcomes are being met where assessed in the curriculum and through external review by co-op employers. Of those assessments that showed students were not attaining at the level we would hope, some were attained in other courses later in the curriculum. There are others however (2.4, 3.1, 3.2, 3.3, 6.4, and 10.2) where assessments showed students not achieving the expected levels. The IT faculty will look deeper into these assessments to determine if changes in teaching methodologies need to be altered to better address the student outcomes or perhaps if students are indeed obtaining the outcomes in subsequent courses where we need to perform additional assessments.

C. Continuous Improvement

Every two years, program outcomes are assessed within core classes required by all majors. This process for the Information Technology program was initially defined in 2007:

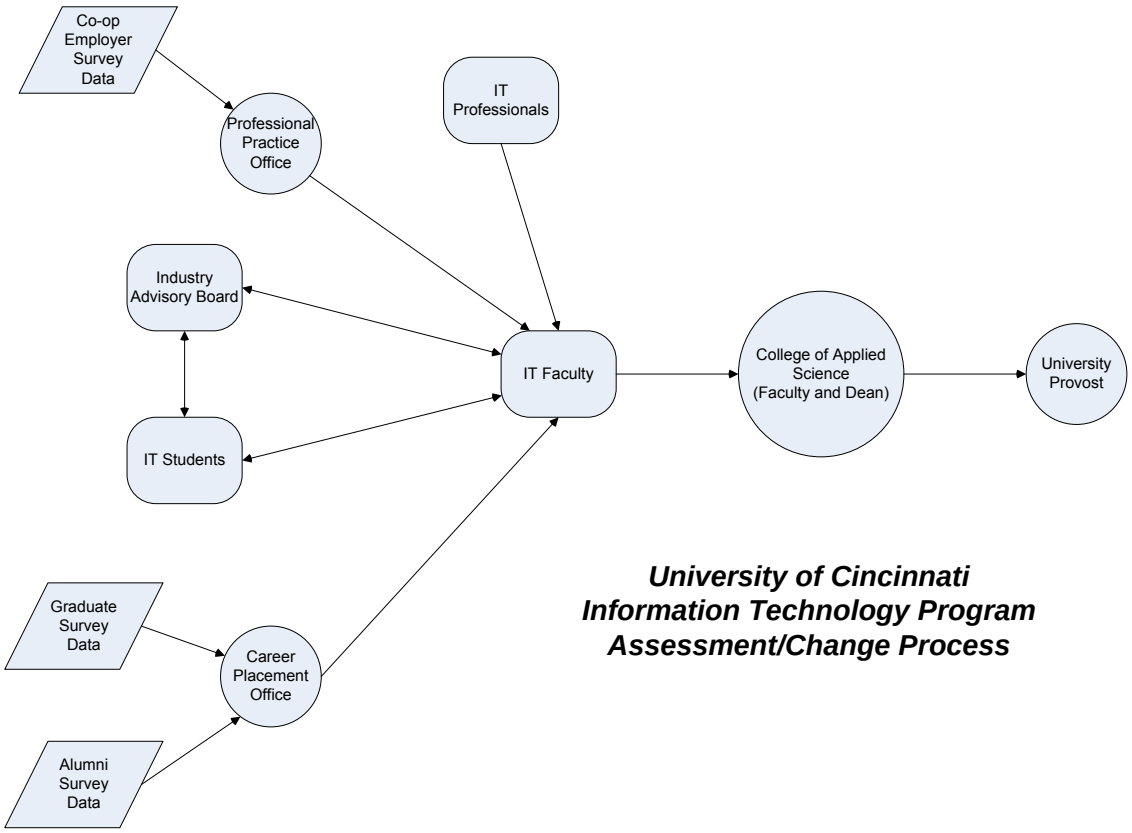
6. IT Faculty get input from the assessment surveys (graduate, alumni, co-op employer) and its constituents (students, Industry Board, IT professionals) for potential changes. Because of the nature of the student/faculty relationship, input is sometimes obtained from them through the Industry Board.

7. IT Faculty formulates a tentative change based on these inputs.

8. IT Faculty work with the students and Industry Board for finalizing the change.

9. IT Faculty presents the change to the college faculty and administration for approval.

10. The change is then presented to the University Provost (if necessary) for final approval when the change is made official.



This process unfortunately has not been followed exactly over the past few years, instead individual faculty responded to assessment data within their courses by changing a teaching strategy or re-emphasizing a topic area without official inputs from industry partners or students. For instance, the assessment data indicated that students in the Intro to Networking course were not attaining satisfactory performance on the test questions where student outcomes were being assessed. Professor Stockman began putting a greater emphasis on these topics in class and introduced an additional quiz early in the quarter so students would be more prepared for what was expected in their learning of the material. The IT program will be more diligent in following the set guidelines and work more collaboratively in addressing suggestions that students are not attaining acceptable levels of outcome achievement.

While the process was not carried out directly, faculty and advisory committee members did regularly discuss the direction of the program based on student employability and ways we might improve (for instance teaching a new topic area such as Mobile Device Programming). IT faculty have also been acutely aware of the employability of students as they actively advise them in the senior design sequence and keep in contact with them after graduation. In the future this data will also be regularly evaluated in an annual meeting of the IT faculty.

CRITERION 5. CURRICULUM

Table 5-1 Curriculum

Information Technology

Course (Department, Number, Title) *All credit hours are quarter based.*	Required, Elective or a Selective Elective by an R, an E or an SE[2]	*Curricular Area (Credit Hours)*				Last Two Terms the Course was Offered: Year and, Semester, or Quarter	Average Section Enrollment for the Last Two Terms the Course was Offered[1]
		Math & Basic Sciences	Computing Topics Mark with an F or A for Fundamental or Advanced	General Education	Other		
20IT170 Introduction to Information Technology	R		*3F*			*Autumn 10/11 Winter 10/11*	*23*
20IT171 Programming Logic & Methods	R		*3F*			*Autumn 10/11 Winter 10/11*	*25*
20IT205 Computer Programming I	R		*3F*			*Autumn 10/11 Winter 10/11*	*25*
15ENGL101 English Composition I	R			*3*		*Winter 10/11 Spring 10/11*	*22*
15COMM172 Fundamentals of Speech Comm.	R			*3*		*Winter 10/11 Spring 10/11*	*34*
20IT274 Computer Hardware	R		*3F*			*Winter 10/11 Spring 10/11*	*24*
20IT220 Fundamentals of Web Development	R		*3F*			*Winter 10/11 Spring 10/11*	*25*
20IT206 Computer Programming II	R		*3F*			*Winter 10/11 Spring 10/11*	*20*
15ENGL102 English Composition II	R			*3*		*Winter 10/11 Spring 10/11*	*20*
15MATH178 Algebra & Trig I	R	4				*Winter 10/11 Spring 10/11*	*33*

15MATH179 Algebra & Trig II	R	4				*Winter 10/11* *Spring 10/11*	*35*
20IT275 Introduction to Networking	R		*3F*			*Summer 09/10* *Spring 10/11*	*22*
20IT207 Computer Programming III	R		*3F*			*Summer 09/10* *Spring 10/11*	*18*
Free Elective	E				*3*		
36PD120Co-op for Engineers	R				*1*	*Winter 10/11* *Spring 10/11*	*42*
20IT299 Implications of IT	R		*3F*			*Autumn 10/11*	*22*
20IT315 System Administration I	R		*3A*			*Summer 09/10* *Autumn 10/11*	*27*
20IT209 Introduction to Database	R		*3F*			*Winter 10/11* *Spring 10/11*	*29*
20IT200 Computational Concepts in IT	R		*3F*			*Autumn 09/10* *Autumn 10/11*	*23*
20IT317 Network Infrastructure Development	SE		*3A*			*Summer 09/10* *Autumn 10/11*	*21*
20IT345 Contemporary Programming I	SE		*3A*			*Autumn 10/11* *Autumn 10/11*	*22*
20IT230 Fundamentals of Digital Media Production	R		*3F*			*Winter 10/11* *Spring 10/11*	*20*
20IT313 Information Security and Privacy	R		*3A*			*Winter 10/11* *Spring 10/11*	*19*
15MATH271 Discrete Math I	R	4				*Winter 10/11* *Spring 10/11*	*27*
General Education Elective	SE			*3*			
20IT316 System Administration II	SE		*3A*			*Winter 10/11* *Spring 10/11*	*17*
20IT321 Client-Side Web Development	SE		*3A*			*Winter 10/11* *Spring 10/11*	*10*
20IT309 Database Management	R		*3A*			*Summer 09/10* *Autumn 10/11*	*23*
15MATH272 Discrete Math II	R	4				*Spring 09/10* *Winter 10/11*	*23*
General Education Elective	SE			*3*			
Advanced Writing Elective	SE			*3*			

20IT319 Network Security	SE		*3A*			*Summer 09/10* *Autumn 10/11*	*15*
20IT421 Enterprise Web Development	SE		*3A*			*Autumn 10/11* *Autumn 10/11*	*18*
20IT301 Systems Analysis and Design I	R		*3A*			*Winter 10/11* *Spring 10/11*	*22*
32IT430 Human Computer Interaction I	R		*3A*			*Autumn 10/11* *Spring 10/11*	*24*
Free Elective	E				*3*		
Science Elective	SE	4					
20IT488 Routing & Switching	SE		*3A*			*Winter 10/11* *Spring 10/11*	*17*
20IT346 Contemporary Programming II	SE		*3A*			*Winter 10/11* *Spring 10/11*	*8*
15STAT241 Intro to Statistics	R	4				*Winter 10/11* *Spring 10/11*	*33*
Free Elective	E				*3*		
Science Elective	SE	4					
20IT311 Business Intelligence	SE		*3A*			*Autumn 10/11* *Autumn 10/11*	*14*
20IT330 Digital Image Development	SE		*3A*			*Autumn 10/11* *Autumn 10/11*	*19*
20IT361 Computer Forensics	SE		*3A*			*Summer 09/10* *Autumn 10/11*	*22*
20IT420 Web Server Application Development	SE		*3A*			*Autumn 09/10* *Autumn 10/11*	*11*
Science Elective	SE	4					
General Education Elective	SE			*3*			
Free Elective	E				*3*		
20IT477 Database Design	SE		*3A*			*Winter 10/11* *Spring 10/11*	*15*
20IT332 Digital Audio Development	SE		*3A*			*Winter 10/11* *Spring 10/11*	*15*
20IT415 Systems Integration	SE		*3A*			*Winter 10/11* *Spring 10/11*	*24*
20IT302 Systems Analysis & Design II	SE		*3A*			*Winter 10/11* *Spring 10/11*	*15*

32IT490 Senior Design		R		*3A*			*Autumn 09/10 Autumn 10/11*	*37*
32IT455 Management in IT		R		*3A*			*Summer 09/10 Autumn 10/11*	*27*
IT Free Elective		SE		*3A*				
20IT480 Database Administration		SE		*3A*			*Autumn 09/10 Autumn 10/11*	*18*
20IT333 Digital Video Development		SE		*3A*			*Autumn 09/10 Autumn 10/11*	*7*
20IT411 Enterprise Network Administration		SE		*3A*			*Autumn 09/10 Autumn 10/11*	*21*
20IT475 Programming for Mobile Devices		SE		*3A*			*Autumn 09/10 Autumn 10/11*	*19*
32IT496 Senior Design Project Management I		R		*3A*			*Winter 09/10 Winter 10/11*	*35*
32IT493 Senior Design Tech Practicum I		R		*3A*			*Winter 09/10 Winter 10/11*	*8*
IT Free Elective		SE		*3A*				
General Education Elective		SE			*3*			
32IT497 Senior Design Project Management II		R		*3A*			*Spring 09/10 Spring 10/11*	*34*
32IT494 Senior Design Tech Practicum II		R		*3A*			*Spring 09/10 Spring 10/11*	*8*
Free Elective		E				*3*		
General Education Elective		SE			*3*			
20IT461 Special Topics in Networking		SE		*3A*			*Spring 09/10 Spring 10/11*	*26*
20IT463 Special Topics in Software Development		SE		*3A*			*Spring 09/10 Spring 10/11*	*21*
OVERALL TOTAL CREDIT HOURS FOR THE DEGREE	183							
PERCENT OF TOTAL		54% R, 8% E, 38% SE	*17.5%*	*19.7% F, 39.3% A*	*14.8%*	*8.7%*		

FRESHMAN YEAR

Autumn	Winter	Spring
20IT170 Introduction to Information Technology (3)	20IT274 Computer Hardware (3)	20IT275 Introduction to Networking (3)
20IT171 Programming Logic & Methods (3)	20IT220 Fundamentals of Web Development (3)	20IT207 Computer Programming III (3)
20IT205 Computer Programming I (3)	20IT206 Computer Programming II (3)	15MATH179 Algebra and Trig II (4)
15ENGL101 English Composition I (3)	15ENGL102 English Composition II (3)	36PD120 Intro to Coop: Engineering (1)
15COMM171 Effective Public Speaking (3)	15MATH178 Algebra and Trig I (4)	Free Elective (3)
15 Quarter Hours	**16 Quarter Hours**	**14 Quarter Hours**

SOPHOMORE YEAR

Autumn	Winter/Spring
20IT200 Computational Concepts in IT (3)	20IT230 Fundamentals of Digital Media Production (3)
20IT209 Introduction to Database (3)	15MATH271 Discrete Math I (4)
20IT299 Implications of IT (3)	20IT313 Information Security and Privacy (3)
20IT315 System Administration I (3)	General Education Elective (3)
Primary Track Elective (3)	Primary Track Elective (3)
15 Quarter Hours	**16 Quarter Hours**

THIRD YEAR

Summer/Autumn	Winter/Spring
20IT309 Database Management (3)	20IT301 Systems Analysis and Design I (3)
15MATH272 Discrete Math II (4)	20IT430 Human Computer Interaction I (3)
Advanced Writing Elective (3)	Free Elective (3)
General Education Elective (3)	Science Elective (4)
Primary Track Elective (3)	Primary Track Elective (3)
16 Quarter Hours	**16 Quarter Hours**
AS Degree 92 Quarter Hours	

FOURTH YEAR

Summer/Autumn	Winter/Spring
15 STAT 241 Intro to Statistics (4)	Science Elective (4)
Free Elective (3)	General Education Elective (3)
Science Elective (4)	Free Elective (3)
Secondary Track Elective (3)	Secondary Track Elective (3)
Primary Track Elective (3)	Primary Track Elective (3)
17 Quarter Hours	**16 Quarter Hours**

SENIOR YEAR

Autumn	Winter	Spring
20IT490 Senior Design (3)	20IT496 Senior Design Project Management I (3)	20IT497 Senior Design Project Management II (3)
20IT455 Management in IT (3)	20IT493 Senior Design Tech Practicum I (3)	20IT494 Senior Design Tech Practicum II (3)
IT Free Elective (3)	IT Free Elective (3)	Free Elective (3)
Secondary Track Elective (3)	General Education Elective (3)	General Education Elective (3)
Primary Track Elective (3)		Primary Track Elective (3)
15 Quarter Hours	**12 Quarter Hours**	**15 Quarter Hours**
		BS Degree 183 Quarter Hours

NOTES:

1. Primary Tracks: Networking/Systems, Software Application Development
2. Secondary Tracks: Networking/Systems, Software Application Development, Database, Digital Media. Any three classes in that track can be used for this requirement
3. Secondary Track Electives must be three courses from a single track
4. General Education Electives must follow University guidelines (1 DC and coursework in three of the following areas: LT, HP, FA, SS)
5. Science Electives consist of 12 credit hours total in Physics, Chemistry, Biology, Geology, or other areas approved by an advisor with completed course substitution form.
6. IT Free Electives include 300 level IT courses or other technical electives approved by the advisor
7. Free Electives include any university courses that are not sub-100 courses
8. 5 co-op quarters required for full-time BS students
9. Advanced writing electives are 200 level or above (ENGL 289, ENGL 371, ENGL 491, ENGL 492, or others as approved by an advisor)

TRACKS AVAILABLE

Networking/Systems	Software Application Development	Database (Secondary Only)
20IT317 Network Infrastructure Development	20IT345 Contemporary Programming I	20IT311 Business Intelligence
20IT316 System Administration II	20IT321 Client-Side Web Development	20IT477 Database Design
20IT319 Network Security	20IT421 Enterprise Web Development	20IT480 Database Administration
20IT488 Routing & Switching	20IT346 Contemporary Programming II	
20IT361 Computer Forensics	20IT420 Web Server Application Development	**Digital Media (Secondary Only)**
20IT415 Systems Integration	20IT302 Systems Analysis & Design II	20IT330 Digital Image Development
20IT411 Enterprise Network Administration	20IT475 Programming for Mobile Devices	20IT332 Digital Audio Development
20IT461 Special Topics in Networking	20IT463 Special Topics in Software Development	20IT333 Digital Video Development

Updated 03/10

Criterion 5 – Curriculum/Objectives Alignment

The program educational objectives for the IT program at the University of Cincinnati are as follows:

Graduates of the IT program will be prepared to gain employment as an IT professional.

Graduates of the IT program will function effectively as individuals and team members in the workplace, growing into highly technical or project management and leadership roles.

Graduates of the IT program will pursue life-long learning, and obtain the tools to successfully identify and adapt to ever changing technologies.

Graduates of the IT program, if they are inclined, will be able to continue their formal education and be accepted to relevant graduate degree programs and succeed in these studies.

Through coursework, significant hands-on activities, cooperative education, and the extensive senior design project the IT curriculum directly feeds the program educational objectives.

Taking each objective one by one:

Graduates of the IT program will be prepared to gain employment as an IT professional.

Nearly all IT coursework consists of hands-on active learning in a form that mirrors what students will see in the workforce. This applied learning instills in students not only the theory, which enables them to learn new material and troubleshoot problems, but enables them to have real IT skills preparing them for the workforce. Cooperative education is a centerpiece for attaining this objective in that IT students get up to a year and a half of full-time IT professional experience. Many/most students will have job offers from at least one of their coop employers by the time of graduation. Finally, the expectation for students' senior design projects is very high. Fifteen credit hours is dedicated to this experience for students where they will implement a real-world system culminating in a final presentation and demonstration for students, faculty, and industry professionals. Several of the UC IT students get jobs offers during the yearly Tech Expo event where projects are demonstrated.

Graduates of the IT program will function effectively as individuals and team members in the workplace, growing into highly technical or project management and leadership roles.

Like the first objective, students will attain this through the curriculum in their coursework, coop experience, and senior design experiences. In the courses themselves students will encounter several projects; some forcing them to work on their own and others in a team, some requiring heavy technical proficiency and others requiring significant project management skills. A look at the syllabi and student work will confirm this. Cooperative education provides students the opportunities to work in all of these modes as well; some students by their final coop

assignments will already be given leadership roles on projects. Finally, the senior design project pushes students to work in all of these modes. Even most individual and technical projects will require significant interactions with faculty and potential users of their project as well as a defined project plan that must be followed for success. Alternatively, faculty advisors make sure that each project has sufficient technical depth for each student, even on projects for which teams are being utilized.

Graduates of the IT program will pursue life-long learning, and obtain the tools to successfully identify and adapt to ever changing technologies.

While students in the program are given the opportunity to obtain the technical skills to be valuable in the workforce today, it is balanced in the curriculum with an even amount of theoretical knowledge. This theoretical knowledge is what gives students the ability to be life-long learners and allow them to pick up the new technical skills as they come along in the future. A look at the syllabi and student work will show this emphasis in the curriculum. Some courses even assign projects asking students to implement a new technology "on their own" based on the theory learned in the classroom and/or other implementations of similar technologies. Senior design as well is a place where students are often forced to pick up a new technology without the benefit of it being demonstrated to them by a faculty member.

Graduates of the IT program, if they are inclined, will be able to continue their formal education and be accepted to relevant graduate degree programs and succeed in these studies.

While the vast majority of students in the program are not interested in graduate studies at the time of graduation; with the choice of courses in the curriculum, the faculty make choices with the possibility of graduate studies in mind. Students considering going on to graduate school are encouraged to use their electives to take additional math coursework (calculus) to satisfy some graduate programs' requirement of this higher math for admissions than what the IT bachelors degree requires (algebra and trig, discrete math). A popular choice for those students considering graduate studies is the Masters of Science in Information Systems offered by the University of Cincinnati's College of Business, in which several IT graduates from the UC IT program have been successful.

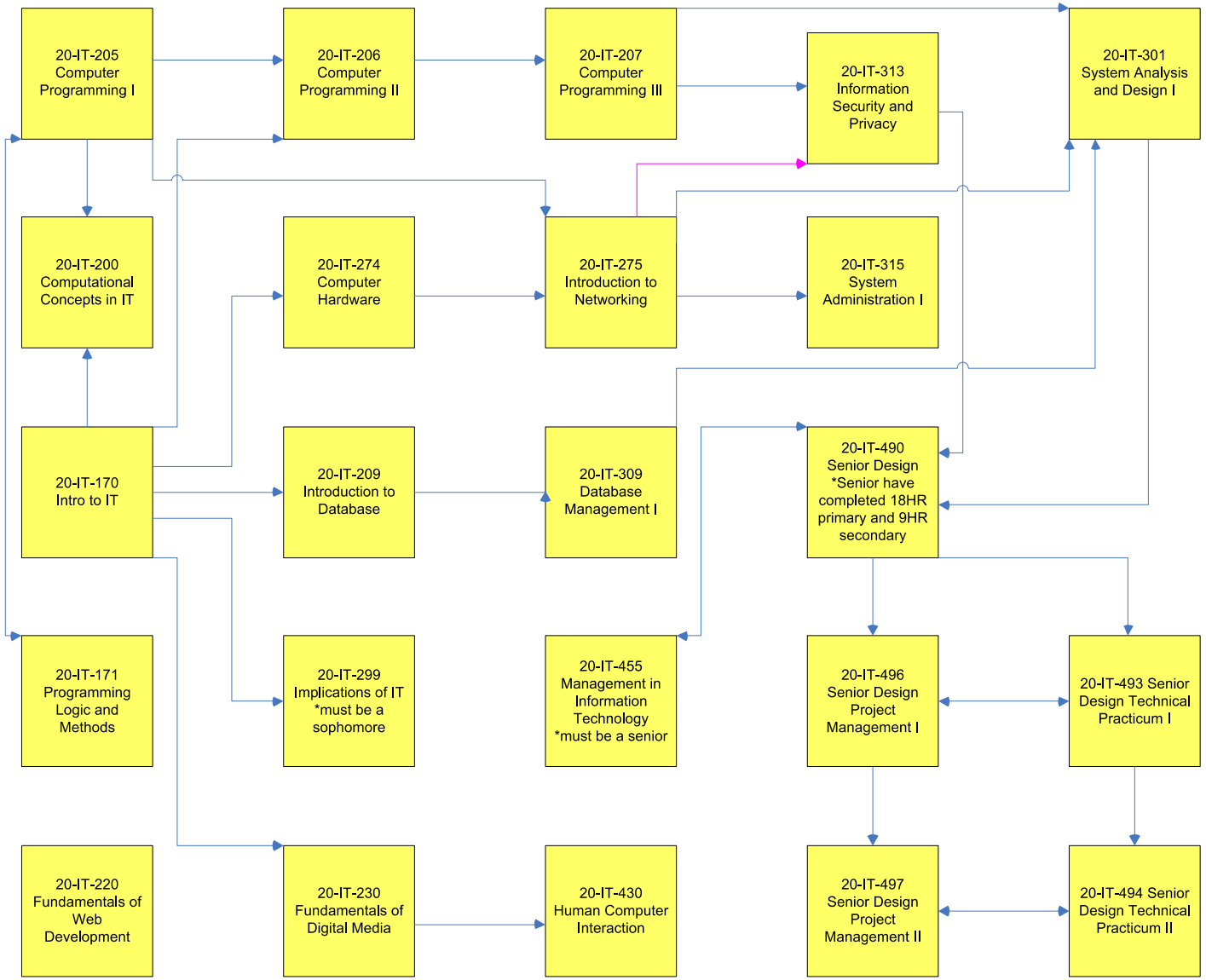
Criterion 5 – Curriculum/Outcomes Alignment

The IT curriculum directly feeds into the student outcomes. The following table and pre-requisite flow charts display where in the core curriculum (courses taken by all students) each defined outcome is addressed for students. While the table shows where each outcome is being assessed, it can be assumed that each outcome is actually addressed in several other courses in the curriculum. Specialization courses, coop work experience, and the senior design projects also directly impact the attainment of the outcomes, though differ on precisely which outcome is being addressed from student to student.

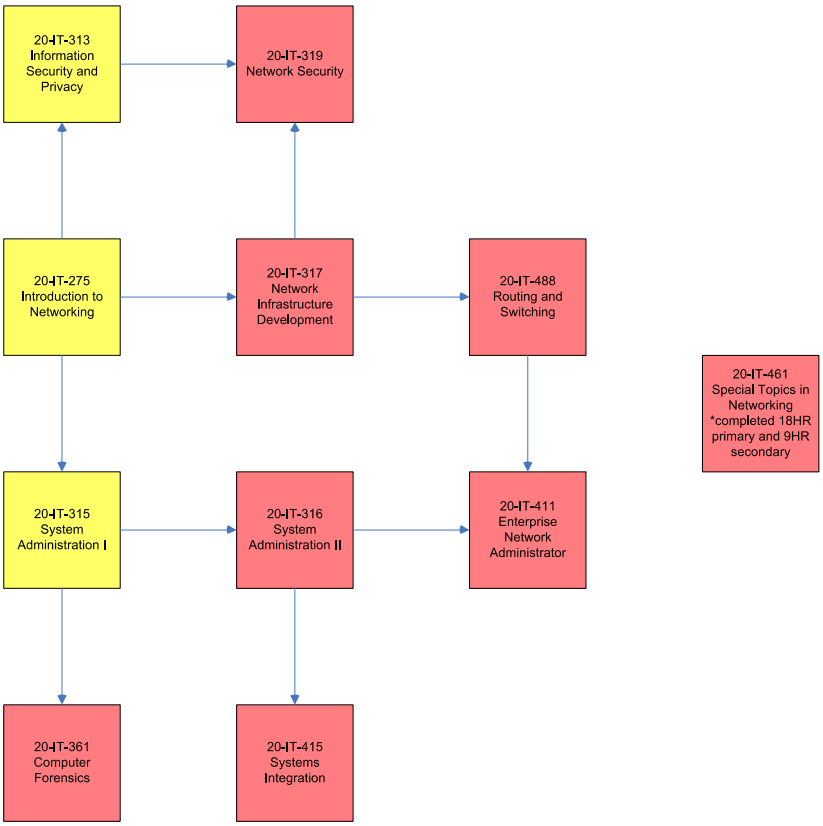
UC IT Degree Outcomes Assessment Summary 2010-2011

(↑= Met, ↓= Not Met)

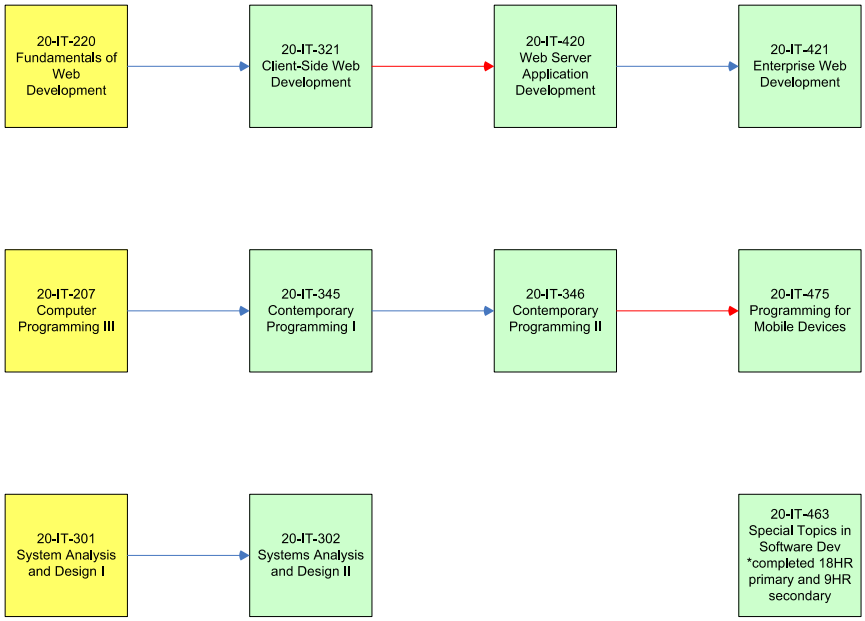
		20IT170 Intro to IT	20IT171 Programming Logic & Methods	20IT200 Computational Concepts	20IT205 Computer Programming I	20IT206 Computer Programming II	20IT207 Computer Programming III	20IT209 Intro to Database	20IT220 Fund of Web Development	20IT230 Fund of Digital Media	20IT274 Computer Hardware	20IT275 Intro to Networking	20IT299 Implications of IT	20IT301 Systems Analysis & Design I	20IT309 Database Management	20IT313 Info Security and Privacy	20IT315 System Administration I	20IT430 Human Computer Interaction	20IT455 Management in IT	20IT490 Senior Design	20IT493 Senior Design Tech Practicum I	20IT494 Senior Design Tech Practicum II	20IT496 Senior Design Project Mgmt I	20IT497 Senior Design Project Mgmt II	Co-op Work Experience
Develop Computer Applications	**1**																								
Develop fundamental programming skills	1.1	↑	↑	↑	↑	↑																			
Program effectively within the student's specialty area	1.2			↑	↑	↑																			
Apply a development life cycle to a problem	1.3			↑	↑	↑							↑				↑								
Design and develop a software prototype	1.4				↑	↑											↑								
Use multiple computer system platforms	1.5															↑									
Comprehend system integration and architecture principles	1.6												↑												
Develop Database Applications	**2**																								
Design a relational database	2.1							↑						↑											
Implement a relational database	2.2							↑						↑											
Query a relational database	2.3							↑						↑											
Secure database management systems	2.4													↓											
Integrate relational database into applications	2.5						↑							↑											
Implement and Maintain Networking & System	**3**																								
Apply and explain network protocols	3.1											↓													
Implement a variety of network configurations	3.2											↓													
Install and administer network services	3.3																↓								
Protect and secure users' information on a computer network	3.4											↑					↑								
Protect and secure organizations' computer network	3.5															↑									
Design and Implement Internet-Based Applications	**4**																								
Design & implement a website using appropriate design	4.1								↑																
Understand and implement elements of effective online users' experience	4.2								↑																
Understand and Use Digital Media	**5**																								
Understand the elements of capturing, editing and producing digital media (image, audio and video)	5.1									↑															
Integrate digital media elements in presentations and other applications	5.2									↑															
Practice User-Centered Design and Deployment	**6**																								
Identify needs, analyze tasks, and develop profiles of users	6.1								↑																
Develop and evaluate effective user interaction designs	6.2																	↑							
Practice user-centered design development and deployment	6.3								↑																
Evaluate usability of an application	6.4																			↓					
Implement and Apply Project Management Principles	**7**																								
Understand, develop and follow a project plan	7.1																		↑			↑	↑		
Develop Gantt & PERT charts and critical path analysis	7.2																		↑			↑	↑		
Communicate Effectively	**8**																								
Make effective oral presentations	8.1								↓				↑						↑			↑			↑
Communicate effectively in written form	8.2								↓										↑			↑			↑
Communicate effectively with peers, supervisors and clients	8.3																			↑					↑
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4									↑								↑							
Interact Effectively within the Organization	**9**																								
Participate effectively as a team member	9.1												↑						↑						↑
Be able to work effectively with end users	9.2																			↑					↑
Have the ability to be a change agent within an organization	9.3																	↑							↑
Comprehend and apply project management principles	9.4																						↑	↑	
Describe and Practice Ethical and Professional Behaviors	**10**																								
Practice ethical and professional behaviors	10.1												↑												↑
Explain the rationale for security practices	10.2															↓									
Apply accepted security practices	10.3															↑									
Recognize the need for, and have the ability to seek out and successfully pursue continued learning throughout their career	10.4																	↑							↑
Apply Appropriate Problem Solving Skills in:	**11**																								
Web Development	11.1								↑																
Interactive Multimedia Development	11.2									↑															
Software Development	11.3													↑											



University of Cincinnati Information Technology Program Core Curriculum

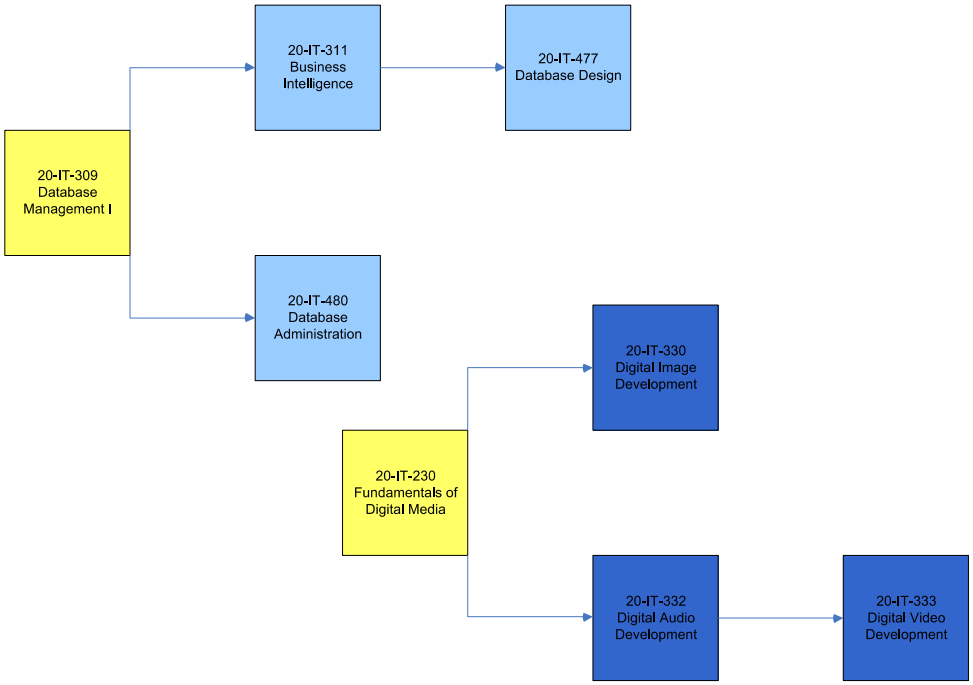


University of Cincinnati Information Technology Program Networking Track



University of Cincinnati Information Technology Program Software Application Development Track

***Red arrows indicate recent prerequisite changes not yet official**



University of Cincinnati Information Technology Program Database and Digital Media Tracks

Criterion 5 – Curriculum/Criteria Attainment

The above table mapped IT core courses to the program outcomes. The following table maps IT program outcomes to general and program specific criteria. The connection of these two tables shows then how the IT core courses go on to meet the general and program specific criteria. The program curriculum and prerequisite structure clearly demonstrate significant hours and depth towards meeting each of the criteria. Included in these mappings are the courses corresponding to the required, year-long capstone project called senior design (IT490, IT493, IT494, IT496, IT497). In IT490 students do a feasibility study for their project and research the best tools to use to solve their chosen problem. In IT493 and IT494 students learn project management and communication skills centered on their chosen project. And in IT496 and IT496 they work closely with a faculty advisor on the technical implementation of their project.

UC IT Degree Outcomes Checksheet - Degree outcomes satisfying ABET General and IT program attributes.

		(a) An ability to apply knowledge of computing and mathematics appropriate to the discipline;	(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;	(c) An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;	(d) An ability to function effectively on teams to accomplish a common goal;	(e) An understanding of professional, ethical, legal, security, and social issues and responsibilities;	(f) An ability to communicate effectively with a range of audiences;	(g) An ability to analyze the local and global impact of computing on individuals, organizations and society, including ethical, legal, security and global policy issues;	(h) Recognition of the need for, and an ability to engage in, continuing professional development;	(i) An ability to use current techniques, skills, and tools necessary for computing practices.
Develop Computer Applications	**1**									
Develop fundamental programming skills	1.1	×								×
Program effectively within the student's specialty area	1.2									×
Apply a development life cycle to a problem	1.3			×						×
Design and develop a software prototype	1.4			×						×
Use multiple computer system platforms	1.5									×
Comprehend System Integration and Architecture principles	1.6			×						×
Develop Database Applications	**2**			×						
Design a relational database	2.1			×						×
Implement a relational database	2.2									×
Query a relational database	2.3									×
Secure database management systems	2.4									×
Integrate relational database into applications	2.5			×						×
Implement and Maintain Networking & System Infrastructure	**3**									
Apply and explain network protocols	3.1									×
Implement a variety of network configurations	3.2			×						×
Install and administer network services	3.3			×						×
Protect and secure users' information on a computer network	3.4					×		×		×
Protect and secure organizations' computer network	3.5					×		×		×
Design and Implement Internet-Based Applications	**4**									
Design & implement a website using appropriate design guidelines	4.1			×						×
Understand and implement elements of effective online users' experience	4.2	×		×						
Understand and Use Digital Media	**5**									
Understand the elements of capturing, editing and producing digital media (image, audio and video)	5.1									×
Integrate digital media elements in presentations and other applications	5.2									×
Practice User-Centered Design and Deployment	**6**									
Identify needs, analyze tasks, and develop profiles of users	6.1			×			×			
Develop and evaluate effective user interaction designs	6.2	×		×						
Practice user-centered design development and deployment	6.3			×						
Evaluate usability of an application	6.4	×		×						
Implement and Apply Project Management Principles	**7**									
Understand, develop and follow a project plan	7.1									
Develop Gantt & PERT charts and critical path analysis	7.2									
Communicate Effectively	**8**									
Make effective oral presentations	8.1						×			
Communicate effectively in written form	8.2						×			
Communicate effectively with peers, supervisors and clients	8.3						×			
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4						×			
Interact Effectively within the Organization	**9**									
Participate effectively as a team member	9.1				×		×			
Be able to work effectively with end users	9.2						×			
Have the ability to be a change agent within an organization	9.3									
Comprehend and apply project management principles	9.4									
Describe and Practice Ethical and Professional Behaviors	**10**									
Practice ethical and professional behaviors	10.1					×		×		
Explain the rationale for security practices	10.2					×		×		
Apply accepted security practices	10.3					×		×		
Recognize the need for continued learning throughout their career	10.4								×	
Apply Appropriate Problem Solving Skills in:	**11**									
Web Development	11.1	×	×						×	×
Interactive Multimedia Development	11.2	×	×						×	×
[illegible]	[illegible]	[illegible]	[illegible]						[illegible]	[illegible]

UC IT Degree Outcomes Checksheet - Degree outcomes satisfying ABET General and IT program attributes.

		(j) An ability to use and apply current technical concepts and practices in the core information technologies;	(k) An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems;	(l) An ability to effectively integrate IT-based solutions into the user environment;	(m) An understanding of best practices and standards and their application;	(n) An ability to assist in the creation of an effective project plan.
Develop Computer Applications	**1**					
Develop fundamental programming skills	1.1	×			×	
Program effectively within the student's specialty area	1.2					
Apply a development life cycle to a problem	1.3					
Design and develop a software prototype	1.4					
Use multiple computer system platforms	1.5					
Comprehend System Integration and Architecture principles	1.6					
Develop Database Applications	**2**					
Design a relational database	2.1	×			×	
Implement a relational database	2.2	×			×	
Query a relational database	2.3					
Secure database management systems	2.4					
Integrate relational database into applications	2.5					
Implement and Maintain Networking & System Infrastructure	**3**					
Apply and explain network protocols	3.1				×	
Implement a variety of network configurations	3.2	×			×	
Install and administer network services	3.3	×			×	
Protect and secure users' information on a computer network	3.4	×				
Protect and secure organizations' computer network	3.5	×				
Design and Implement Internet-Based Applications	**4**					
Design & implement a website using appropriate design guidelines	4.1	×			×	
Understand and implement elements of effective online users' experience	4.2	×				
Understand and Use Digital Media	**5**					
Understand the elements of capturing, editing and producing digital media (image, audio and video)	5.1	×				
Integrate digital media elements in presentations and other applications	5.2	×				
Practice User-Centered Design and Deployment	**6**					
Identify needs, analyze tasks, and develop profiles of users	6.1		×	×		
Develop and evaluate effective user interaction designs	6.2		×	×		
Practice user-centered design development and deployment	6.3		×	×		
Evaluate usability of an application	6.4		×	×		
Implement and Apply Project Management Principles	**7**					
Understand, develop and follow a project plan	7.1					×
Develop Gantt & PERT charts and critical path analysis	7.2					×
Communicate Effectively	**8**					
Make effective oral presentations	8.1					
Communicate effectively in written form	8.2					
Communicate effectively with peers, supervisors and clients	8.3					
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4					
Interact Effectively within the Organization	**9**					
Participate effectively as a team member	9.1					
Be able to work effectively with end users	9.2			×		
Have the ability to be a change agent within an organization	9.3			×		
Comprehend and apply project management principles	9.4			×		×
Describe and Practice Ethical and Professional Behaviors	**10**					
Practice ethical and professional behaviors	10.1					
Explain the rationale for security practices	10.2					
Apply accepted security practices	10.3					
Recognize the need for continued learning throughout their career	10.4					
Apply Appropriate Problem Solving Skills in:	**11**					
Web Development	11.1	×				
Interactive Multimedia Development	11.2	×				

Criterion 5 – Cooperative Education/Criteria Attainment

Co-op has historic roots at the University of Cincinnati. The concept was developed by College of Engineering Dean Herman Schneider in 1906. Cooperative Education has been mandatory for all engineering students since 1920. Within this educational mandate, co-op students are assigned to a Professional Practice (co-op) Faculty Advisor by discipline area. This faculty member is responsible for all aspects of the cooperative education program for their assigned disciplines. One challenge that is inherent in an academic co-op program is faculty oversight and evaluation. To maintain academic integrity the program must be in the hands of faculty. Yet the engineering faculty member is expected to contribute to the field at such a high level that it is virtually impossible for an individual faculty member to work with more than one or two students. UC's College of Engineering and Applied Science is faced with a huge manpower requirement given the mandatory nature of the program. To maintain faculty control yet assure that most faculty members are able to devote their attention to their fields, UC has created a Professional Practice Faculty body (http://www.uc.edu/propractice/) with its own RPT criteria to execute the cooperative education program and it is those faculty members who evaluate the academic component of cooperative education within the framework established by the College of Engineering and Applied Science Faculty body. Professional Practice Faculty members are expected to be active in both faculty bodies to ensure that they are judged by RPT criteria that values cooperativeeducation as an educational methodology but are also well versed in the learning outcomes that individual departments hope to achieve.

Students are required to meet with their Professional Practice faculty advisor in advance of each new co-op assignment to discuss future plans and at the completion of each co-op assignment to reflect upon and discuss past experiences. Students are registered for cooperative education during the quarters they are on work assignment. They are considered full-time students ofduring their co-op work terms carrying zero credit hours.

Students are required to complete learning objectives, a learning module and a student report (student evaluation) for each work assignment. Employers are asked to evaluate the achievement of student learning objectives as well as students understanding of the focused learning module for the term. Topics of focused learning modules include organizational culture, professional ethics, social responsibility and the integration of theory and practice. Employers also complete an assessment that focuses on skill development based upon the work performed during the quarter. Faculty co-op advisors evaluate student learning as demonstrated by the learning module and review and discuss the objectives and evaluations with the students in the individual student meetings. Students receive a passing grade for cooperative education if the work experience and the required evaluations are satisfactorily completed. This grade is recorded on the student's transcript.

The assessment instruments used by the cooperative education program at the university were developed using ABET EC 2000 criteria as one of many points of reference. UC also referred to the criteria of other accreditation bodies to which our programs must adhere as well as the university's general educational goals. The assessment instruments were designed to be used with Engineering programs as well as all other co-op disciplines including those from the

College of Business and the College of Design, Architecture, Art and Planning. UC uses a three-party assessment system in which feedback from students, employers and professional practice faculty members form a comprehensive feedback loop. Many questions that are used in one assessment instrument are mirrored in another so that UC receives important feedback from multiple perspectives.

In the student's assessment of their professional practice assignment they are asked to assess the experience itself, their learning from the experience, their skill development and the co-op position as well as to plan for their future growth and development. Students are also asked to focus on three areas of new learning each term. One area has been determined by UC and is assessed via a learning module that focuses upon topics such as organizational culture, technology, professional ethics and the integration of theory and practice. The other two learning areas are determined by the student and employer in the form of learning objectives for the term.

In the employer's assessment of the professional practice student they are asked to assess the student's skill development in several key areas, the relevance of the position to the students discipline and career goals, provide an overall assessment of the student's performance during the work term and provide input to assist the students growth and future development. Employers are also asked to evaluate student learning as demonstrated through the learning module on the quarterly topic as well as their mastery of the two learning objectives that each student sets per term.

Finally the co-op faculty member assesses student learning as demonstrated in the learning module as well as providing an overall assessment of the work term. This assessment combines the input from the student assessment instruments, the employer assessment instruments and theindividual meeting that takes place between the faculty member and the student.

Criterion 5 – Display Materials/Criteria Attainment

In addition to the traditional course folders, posters will be on display of the tables found above to allow PEVs to "follow the trail" from course materials to outcome attainment. So as an example, a PEV would choose a program outcome, then follow the chart to find where this is being assessed in the curriculum or which course(s). Then they can go to those course folders to see the assessment used as well as student work leading up to the learning towards that outcome. Alternatively, a single binder will hold all program outcome assessments designating which course each came from. PEVs can instead of using the charts can use this as a starting point then going to the individual course binders.

CRITERION 6. FACULTY

A. Faculty Qualifications

There are eight full-time faculty members whose primary appointment is to work for the IT program at the University of Cincinnati, and 20 part-time/adjunct faculty members. Till Autumn Quarter of 2010-2011 school year there were 11 full-time faculty members. That number of 11 did a better job to sufficiently provide coverage in all areas of the curriculum (networking/system, programming, database, digital media, and web). Because of the loss of these faculty members from the program a heavier reliance on part-time faculty has been utilized this year.

There has also been some movement of full-time faculty into teaching new areas to provide sufficient coverage, for instance Prof. Tadayon has taken on leadership of some of the digital media coursework. Also, with the merger of the colleges of Engineering and Applied Science, Professor Said who previously only taught half-time with the other half being dedicated to administrative duties is back to a full-time teaching schedule.

Recognizing however that the percentage of classes being taught by part-time instructors is higher than we would like it to be however, the faculty are taking steps to create some efficiencies in the curriculum particularly in the move from a quarter based system to semesters. The biggest change will not affect students in the slightest; starting Autumn of 2012 the IT program will go to a single-track coop schedule. Currently when students start their cooperative education experience, half of them go out on a work assignment while the other half remain in school. These two halves of our student population then alternate between work and school till their senior year. This required the program to offer courses every quarter,sometimes with small enrollments. In the semester system, all students will go out on coop at the same time, a “single track” coop curriculum. This will significantly increase our teaching efficiency, reducing the programs reliance on part-time instructors. We have also begun to slightly increase class sizes, while still keeping the sizes under 30 students for almost all courses.

While the program appreciates the efforts by the pool of part-time instructors, we have found it difficult to find enough technically competent individuals who have a high ability to teach and can fit teaching into their work schedule and private lives to cover the current needs of the program. Even though the changes above should limit the need for so many part-time instructors, we also intend to begin a better system for mentoring our part-time instructors and providing quality control.

Of the full-time faculty, all hold at least a masters degree in a computing or related field and most possess relevant industry experience in IT. Of the part-time faculty, all hold significant industry experience in IT (most currently working in the field) and at least a bachelor’s degree. This mix of industry and academic background has proven sufficient to cover the undergraduate IT program.

B. Faculty Workload

The standard workload for full-time faculty in the IT program this year has been three courses per quarter. These courses are relatively small in size; almost all have enrollments less than 30 students. In those courses that have more than 30 students consideration is given to lessening that faculty member's required number of sections that quarter. Teaching load reductions are also considered for significant projects for the program such as Program Chair, ABET coordinator, and preparations for the upcoming semester conversion. In addition to teaching, faculty are expected to engage in scholarly activities and service. An official "Workload Document" for the School of Computing Sciences and Informatics with guidelines of expectations was created by faculty in the school is in the process of being approved by the college.

C. Faculty Size

As described above, the full-time faculty assigned to the IT program decreased this year from 11 to 8 as a result of early retirements and a faculty transfer to another unit. While this has caused the necessity of employing more part-time instructors to cover the courses steps are being taken to reduce the number of IT sections taught in a given year. A merging of the web and software development track was a first step in this process and the next step will come in the form of going from a dual-track co-op curriculum to a single-track. Currently in the years between freshman and senior half our students in each class are out at any given time on a co-op assignment. In the new single-track format all students will follow the same co-op schedule, for instance all Sophomores will co-op during the spring semester, Juniors will co-op autumn and summer, etc. This new schedule will reduce the necessity we currently have of offering each course in these middle years multiple times each year, thereby reducing the need for so many part-time instructors to cover the courses.

Student advising is done by the Academic Advisor assigned to the School of Computing Sciences and Informatics. Advising students in the school, computer science and information technology undergrads, is this persons full-time job. Students still however meet with faculty for advising of other things like career direction and capstone project work. Students have ample opportunities to interact with faculty in and outside of the classroom. Because most courses have a significant lab component which is staffed by the faculty rather than lab assistants, much of the interaction starts here as faculty work directly with students in a more informal environment than often takes place in a lecture hall. The small class sizes also contribute to this positive environment of faculty-student interaction.

Several classes go so far as to require students to seek out interactions with faculty. In the Intro to IT course (freshman year), students must seek out an IT faculty member to "interview" about a chosen topic for a paper assigned in the course. Similarly in the Information Security and Privacy course (sophomore year) students are given an assignment that often leads to many of them seeking out a meeting with another faculty member to discuss a topic in information security.

Finally in the capstone project students are required to meet regularly outside of class with IT faculty and encouraged to meet with several different faculty. In the first quarter of the capstone project (we call it senior design) students choose a project and perform a feasibility study. During the quarter students are required to meet with IT faculty and get progress

reports signed by faculty outside of class. They are encouraged at this time to meet with several different faculty to get different perspectives on the project so they make sure to touch all the potential issues surrounding their chosen technologies. After the first of the three quarter sequence they are assigned a faculty advisor with whom they will work closely on an independent basis for the remaining two quarters. This faculty-student interaction is significant and often develops bonds beyond simply the project at hand into areas of career direction and personal relationships that will extend beyond graduation.

Direct oversight of the program is done by the IT Program Chair in cooperation with the School Director and the Senior Associate Dean of Undergraduate Affairs. There is an IT curriculum committee in the school whose responsibility is solely that of making sure the IT curriculum is relevant and serving students. This committee consists of five IT faculty (one of whom chairs the committee) and one computer science faculty (the chair of the CS curriculum committee).

D. Professional Development

Included in the budget of the School are funds for faculty to participate in at least one professional development opportunity each year. Depending on the budget and needs of the school, additional school funding may be available to faculty as decided by the School Director. The university also has two rounds of competitive Faculty Development Grants each year available to faculty. These funds specifically target development of teaching and research skills for faculty, rather than simply paying for travel to any conference. Several IT faculty are regularly successful in obtaining these grants each year. This and other university faculty development initiatives can be found online out of the office of the Provost (http://www.uc.edu/provost/units/faculty_development.html).

E. Authority and Responsibility of Faculty

All course creation andmodification tasks are initiated by the IT faculty. The process by which changes are accomplished is as follows:

An IT faculty member in cooperation with other interested IT faculty assembles the required documentation for the new course or change (name, number, description, learning outcomes, etc.) and presents them to the IT Curriculum Committee for consideration. This group then considers the request on its own and how it will affect the rest of the curriculum, scheduling, and accreditation. If approved the request is then taken to the full faculty of the School who considers the change. If the change is significant such as a new course, the request is passed along to the College Curriculum Committee where it is considered and passed along to the entirety of the college faculty for consideration. From this level it is then passed along to the provost's office for final approval and entry into the university system. In the event that the change is of a level of a new program or radically changed program, the final approval rests with the Ohio Board of Regents. In essence new courses or changes of significance need to be formally approved by the faculty of the school, the faculty of the college, and finally the university Provost.

Evaluation of courses is also performed by the IT faculty. All full-time IT faculty are assigned as "course keepers" to a set of IT courses, generally courses for which they

regularly teach. These course keepers work with others who teach the course, and members of the advisory council, to regularly evaluate the contents of the courses to see if changes are required based on changing industry standards/technologies. These course keepers also routinely suggest potential part-time instructors for the course and work with hired adjuncts to make sure the proper content is delivered. They are also responsible for collecting the appropriate assessment data gathered in the courses and looking for feedback which may suggest a change is necessary in teaching methodology or focus.

The IT faculty consult with the industry advisory board concerning the definition and revision of program educational objectives and student outcomes. These are considered by the IT curriculum committee then must be approved by the school faculty.

Table 6-1. Faculty Qualifications

Information Technology

Faculty Name	Highest Degree Earned- Field and Year	Rank [1]	Type of Academic Appointment[2] T, TT, NTT	FT or PT[4]	Years of Experience			Professional Registration/ Certification	Level of Activity H, M, or L		
					Govt./Ind. Practice	Teaching	This Institution		Professional Organizations	Professional Development	Consulting/summer work in industry
Baker, Ken	MBA	AST-A	NTT	PT	35	1	1		H	M	H
Bhattacharya, Prabir	PhD, 1979	P	T	FT	5	20	2		M	M	M
Brueggemann, Ralph	MBA, 1969	P-A	NTT	PT	36	39	37		M	M	H
Dietrick, Brian	BS, 2001	I-A	NTT	PT	11	8	8		L	M	H
Eshom, Terry	MS, 1975	I-A	NTT	PT	31	5	5		L	M	H
Freeze, David	MBA	I-A	NTT	PT	15	12	12		L	M	H
Fritz, Jen	BS, 2001	I-A	NTT	PT	25	9	9		L	H	L
Jones, Brandan	MBA, 2004	AST-A	NTT	PT	15	10	10	Sun Cert. Java	H	H	H

Kumpf, Pat	ED.D., 1974	ASC	T	FT	0	45	39		M	M	L
Maloney, Jason	BS, 2005	I-A	NTT	PT	8	1	1		M	L	H
McMahon, Russ	MS, 1981	ASC	T	FT	11	22	12		H	M	L
Meade, Ronald	MS, 1994	I-A	NTT	PT	21	1	1		L	M	H
Meurer, Daniel	MBA, 1983	AST-A	NTT	PT	35	21	21		L	M	H
Monroe, Kurt	BS, 1987	I-A	NTT	PT	24	15	15		L	M	H
Mostafa, Ahmad	MS, 2007	I-A	NTT	PT	0	1	1		L	M	L
Nyland, John	MBA, 2005	AST	NTT	FT	14	11	0		L	M	M
Prabhakar, Annu	MS, 1997	ASC	T	FT	9	11	11		M	H	L
Russ, Randy	MPA, 1987	AST-A	NTT	PT	12	13	13		L	M	L
Said, Hazem	PhD, 2001	ASC	T	FT	0	10	10		M	H	L
Schomaker, Maureen	M.Ed., 2005	AST-A	NTT	PT	4	12	10		L	H	M
Stockman, Mark	MBA, 1996	ASC	T	FT	12	10	10		H	H	L
Tadayon, Vali	MS, 1984	ASC	T	FT	31	31	0		L	H	L
Urig, Daryl	BFA, 1979	AST-A	NTT	PT	32	10	10		L	M	H
Weiner, Michael	BS, 2007	I-A	NTT	PT	11	4	4		L	M	H

Wulf, Tom	MS, 2000	ASC	T	FT	3	10	10		M	H	L
Wong, Kristopher	MBA, 2007	I-A	NTT	PT	7	1	1		L	M	H

Instructions: Complete table for each member of the faculty in the program. Add additional rows or use additional sheets if necessary. Updated information is to be provided at the time of the visit.

1. Code: P = Professor ASC = Associate Professor AST = Assistant Professor I = Instructor A = Adjunct O = Other
2. Code: TT = Tenure Track T = Tenured NTT = Non Tenure Track
3. The level of activity, high, medium or low, should reflect an average over the year prior to the visit plus the two previous years at the institution

Table 6-2. Faculty Workload Summary

Information Technology

Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
			Teaching	Research or Scholarship	Other[4]	
Baker, Ken	PT	IT345-901 3CH Autumn 10/11 IT346-901 3CH Winter 10/11 IT346-901 3CH Spring 10/11	100%			100%
Bhattacharya, Prabir	FT	None	0%	40%	60% Service	30%
Brueggemann, Ralph	PT	IT455-001 3CH Spring 10/11	100%			100%
Dietrick, Brian	PT	IT209-707 3CH Autumn 10/11 IT319-901 3CH Autumn 10/11 IT209-707 3CH Winter 10/11 IT277-707(non-major course) 3CH Winter 10/11 IT209-707 3CH Spring 10/11 IT277-707(non-major course) 3CH Spring 10/11	100%			67%
Eshom, Terry	PT	IT411-901 3CH Autumn 10/11 IT274-901 3CH Winter 10/11 IT275-901 3CH Spring 10/11 IT316-901 3CH Spring 10/11	100%			100%
Freeze, David	PT	IT171-901 3CH Autumn 10/11 IT171-901 3CH Winter 10/11 IT220-901 3CH Spring 10/11	100%			100%
Fritz, Jen	PT	IT200-002 3CH Autumn 10/11 IT274-001 3CH Winter 10/11 IT274-002 3CH Winter 10/11 IT274-901 3CH Spring 10/11	100%			100%
Jones, Brandan	PT	IT421-901 3CH Autumn 10/11	100%			100%

		IT475-901 3CH Autumn 10/11 IT205-901 3CH Winter 10/11 IT220-901 3CH Winter 10/11 IT206-901 3CH Spring 10/11 IT463-901 3CH Spring 10/11				
Kumpf, Pat		IT141-427 (non-major course) 3CH Autumn 10/11 IT141-707 (non-major course) 3CH Autumn 10/11	0%	10%	90% Service + Sabbatical	82% Taught Service Courses
Maloney, Jason	PT	IT415-901 3CH Spring 10/11	100%			100%
McMahon, Russ		IT309-001 3CH Autumn 10/11 IT309-901 3CH Autumn 10/11 IT311-707 3CH Autumn 10/11 IT313-001 3CH Winter 10/11 IT313-002 3CH Winter 10/11 IT493-905 3CH Winter 10/11 IT313-001 3CH Spring 10/11 IT494-904 3CH Spring 10/11	80%	10%	10% Service	100%
Meade, Ron	PT	IT477-901 3CH Winter 10/11 IT477-707 3CH Spring 10/11	100%			100%
Meurer, Daniel	PT	IT170-001 3CH Autumn 10/11 IT170-901 3CH Winter 10/11 IT141-707 (non-major course) 3CH Spring 10/11 IT141-902 (non-major course) 3CH Spring 10/11	100%			50% Taught Service Courses
Monroe, Kurt	PT	IT480-901 3CH Autumn 10/11	100%			100%
Mostafa, Ahmad	PT	IT200-001 3CH Autumn 10/11 IT200-901 3CH Autumn 10/11	100%			100%

Nyland, John		IT317-101 3CH Autumn 10/11 IT317-901 3CH Autumn 10/11 IT319-001 3CH Autumn 10/11 IT316-001 3CH Winter 10/11 IT488-001 3CH Winter 10/11 IT493-902 3CH Winter 10/11 IT275-002 3CH Spring 10/11 IT488-001 3CH Spring 10/11 IT494-901 3CH Spring 10/11	80%	10%	10% Service	100%
Prabhakar, Annu		IT171-001 3CH Autumn 10/11 IT171-002 3CH Autumn 10/11 IT205-001 3CH Autumn 10/11 IT206-001 3CH Winter 10/11 IT301-001 3CH Winter 10/11 IT493-904 3CH Winter 10/11 IT207-001 3CH Spring 10/11 IT301-001 3CH Spring 10/11 IT494-903 3CH Spring 10/11	80%	10%	10% Service	100%
Russ, Randy	PT	IT170-001 3CH Autumn 10/11 IT455-001 3CH Autumn 10/11 IT455-002 3CH Autumn 10/11 IT141-420(non-major course) 3CH Winter 10/11 IT141-421(non-major course) 3CH Winter 10/11 IT141-422 (non-major course) 3CH Spring 10/11 IT142-424 (non-major course) 3CH Spring 10/11	100%			43% Taught Service Courses
Said, Hazem		IT209-001 3CH Autumn 10/11 IT209-002 3CH Autumn 10/11 IT490-901 3CH Autumn 10/11 IT302-001 3CH Winter 10/11 IT496-901 3CH Winter 10/11	80%	10%	10% Service	100%

		IT493-903 3CH Winter 10/11 IT302-901 3CH Spring 10/11 IT494-901 3CH Spring 10/11 IT497-001 3CH Spring 10/11				
Schomaker, Maureen	PT	IT170-002 3CH Autumn 10/11	100%			100%
Stockman, Mark		IT315-001 3CH Autumn 10/11 IT315-002 3CH Autumn 10/11 IT361-001 3CH Autumn 10/11 IT316-901 3CH Winter 10/11 IT415-001 3CH Winter 10/11 IT275-001 3CH Spring 10/11 IT461-901 3CH Spring 10/11	62%	10%	28% Service	100%
Tadayon, Vali		IT299-001 3CH Autumn 10/11 IT299-002 3CH Autumn 10/11 IT430-001 3CH Autumn 10/11 IT230-001 3CH Winter 10/11 IT230-901 3CH Winter 10/11 CUL-333 (non-major course) 3CH Winter 10/11 IT230-001 3CH Spring 10/11 IT230-901 3CH Spring 10/11 IT430-001 3CH Spring 10/11	80%	10%	10% Service	93% Taught Service Courses
Urig, Daryl	PT	IT330-001 3CH Autumn 10/11 IT333-001 3CH Autumn 10/11 IT332-901 3CH Winter 10/11 IT332-901 3CH Spring 10/11	100%			100%
Weiner, Michael	PT	IT420-901 3CH Autumn 10/11 IT321-901 3CH Winter 10/11 IT321-901 3CH Spring 10/11	100%			100%

Wulf, Tom		IT205-002 3CH Autumn 10/11 IT205-901 3CH Autumn 10/11 IT321-901 3CH Autumn 10/11 IT206-002 3CH Winter 10/11 IT206-901 3CH Winter 10/11 IT220-001 3CH Winter 10/11 IT220-002 3CH Winter 10/11 IT207-002 3CH Spring 10/11 IT207-901 3CH Spring 10/11	80%	10%	10% Service	100%
Wong, Kristopher	PT	IT05-901 3CH Spring 10/11	100%			100%

1. FT = Full Time Faculty or PT = Part Time Faculty, at the institution
2. For the academic year for which the self-study is being prepared.
3. Program activity distribution should be in percent of effort in the program and should total 100%.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution.

CRITERION 7. FACILITIES

A.Offices, Classrooms

1. Officesare sufficientto support the attainment of the program educational objectives and student outcomes and to provide an atmosphere conducive to learning.Each full time IT faculty has their own office that is quite adequate in terms of space, allowing for enough room to work and meet with groups of students. Part-time IT faculty share an office similar in size to the full-time IT faculty offices with computers, data jacks, and phones available. The IT program also has a "main office" where the administrative assistant sits and where faculty mailboxes and supplies are stored. One faculty office (where the former department head currently resides) is large enough to house meetings with larger groups (IT faculty meetings, meetings with outside constituents, etc.). All these offices are located on the 4th floor of the Administration Building. In preparation for the move to the Clifton (main) campus, offices have also been made available to faculty who wish to have an additional space there. Four IT faculty have taken advantage of this benefit and now have offices on each campus to work and meet with students. These Clifton offices are located on the 8th floor of the Old Chemistry Building.

2. All IT courses are taught either in a computer lab or an "electronic" classroom. Description and listing of computer labs is described in section B below. Electronic classrooms are standard classrooms with a networked computer at the front for the instructor and suitable projection unit to display the instructor's screen, a secondary video cable is available for faculty who wish to plug their own laptop into the projector instead of using the teacher station. Electronic classrooms also have either blackboards or whiteboards; in addition some have additional equipment like electronic whiteboards, vcr's, document cameras, etc.

B. Computing Resources and Laboratories (university, college, and school-wide)

School-wide Information Technology Services and Resources

IT specific computer labs consist of the Programming and Networking Labs on the Victory Parkway campus. These labs are maintained by a cadre of student workers; 2 of whom work full-time as co-op students, several others as hourly lab assistants. They are all supervised by Rob Montjoy, a full-time staff person who spits time between two schools in the College of Engineering and Applied Science.

Programming Lab - Administration 402
18 ea. Computers
Software:
Various IDEs (netbeans, Eclipse, VisualStudio)
Office Suite (Microsoft Word, Excel, Access, Powerpoint, Visio)

Firefox
2 ea. Printers –Monochrome and Color

Networking Lab – Science 302
25 ea. Computers
Software:
Office Suite (Microsoft Word, Excel, Access, Powerpoint, Visio)
VMware Workstation
Virtual PC
Boson Network Simulation Software
OpNet Network Simulation Software
Wireshark
Firefox
1 ea. Printer – Monochrome
1 ea. Printer – Color
5 ea. Switches
5 ea. Routers
5 ea. Intrusion Detection
5 ea. Firewall
5 ea. VPN Concentrator
5 ea. Wireless Access Points

The Networking Lab, in addition to the hardware below, also contains supplies for students to learn to create twisted pair cables and kits of materials for students to use the networking equipment. ISO files for operating system and software installation onto virtual machines can be found on each computer as well as pre-installed operating systems to be used in several labs associated with the networking and systems courses. The Networking Lab also runs its own directory and associated services (Microsoft Active Directory). Due to the nature of many of the lab scenarios run in this lab there is a Microsoft ISA firewall between it and the university network disallowing certain traffic from leaving the Networking lab.

The Networking Lab utilizes two networks to each computer. The first connects each computer to the router connecting them to the outside network and the second only connects them to one another. This second network is utilized for several lab sessions where the networking equipment is utilized for instruction (firewalls, IDS, VPN concentrators, switches).

The disk space on the Networking Lab computers is also quite large to store the virtual machines created by students throughout the quarter. Students are encouraged to use a large capacity external drive so they can work on their virtual machines elsewhere, but there is enough storage on each computer such that students can do their work and have it be saved to the host computer for their use during their classes's assigned lab time.

Here is the availability for access to these labs (by IT students only) over the past three quarters:

Fall Schedule

Programming Lab

Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
8am-11pm	8am-11pm	8am-11pm	8am-11pm	8am-4:15pm	8am-4:15pm

Networking Lab

Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
8am-11am	12pm-3pm	8am-11am	1pm-3pm	8am-11am	9am-4pm
3pm-6pm	3pm-6pm	1pm-4:30pm			

Winter Schedule

Programming Lab

Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
8am-9pm	8am-9pm	8am-9pm	8am-9pm	8am-5pm	9am-4:15pm

Networking Lab

Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
9am-1pm	12pm-2pm	9am-1pm	12pm-2pm	9am-12pm	10am-3pm
3pm-7pm					

Spring Schedule

Programming Lab

Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
8am-6pm	8am-6pm	8am-10pm	8am-10pm	8am-5pm	9am-4pm

Networking Lab

Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
9am-1pm	10am-2pm	9am-1pm	12pm-2pm	11am-1pm	9am-3pm
3pm-5pm	3pm-4pm				

The school subscribes to the MSDN and VMware Academic Alliance services in which students and faculty have free access to the wide range of Microsoft and VMware product lines. These are used by students to setup systems on their own computers so they can work on class assignments or projects in classes or for their senior design capstone project.

College-wide Information Technology Services and Resources

The College of Engineering and Applied Science has an Office of College Computing that manages computing resources for the college.

The CEAS Office of College Computing (OCC) managed labs include:

Lab Location	Purpose Lab	Computers
Baldwin 548	Teaching	24
Baldwin 550	Teaching	39
Baldwin 860B	Teaching	20
Baldwin 860D	Teaching	46
ERC 617(616)	Open	70
VP Admin 309	Teaching	24
VP Admin 425	Teaching	25
VP Admin 401	Open	18
VP NLab 207	Teaching	25
Rhodes 401	Open	24
60WCharl 203	Teaching	40
60WCharl 206	Teaching	27
60WCharl 209A	Open	24
60WCharl 209B	Teaching	24

VP indicates a lab on the Victory Parkway campus, the others are on the Clifton (main) campus.

Software includes office tools such as word processing and spreadsheets, as well as a variety of tools for engineering/program specific applications. The list of software in the college computing labs is published online at:
http://www.ceas.uc.edu/administrative_services/CollegeComputing/ComputingLabs/LabSoftware.html

In addition to the printing on laser printers in OCC labs, the following services are available to CEAS students and faculty. Color laser printers are available in 636 ERC for printing student thesis and projects. Access to 42" and 24" color plotters are available in 617 ERC. Plotters are for use only if a professor requires students to produce color plots for class projects. Thermal binding services are available at 636 ERC. Students can bring their thesis material, project reports, presentation slides and assignments to be bound. Scanners are available at 617 ERC for the use students and faculty. The new lab in 401 Rhodes (opened spring 2011) has a SmartBoard and SmartCart (laptop, projector, and document camera) for student use.

Other computing services offered by OCC are published online at:
http://www.ceas.uc.edu/administrative_services/CollegeComputing/ComputingLabs/other_computing_services.html

University-wide Information Technology Services and Resources

The University of Cincinnati Office of Information Technologies (UCit) provide diverse, cutting edge, IT systems and services including telephones, Internet Services Provider connectivity and networking, information security, and PC availability to all UC students, staff and faculty.

UCit operates 9 computing laboratories for the benefit of all UC students. Among those labs, UCit@Langsam is a 24-hour computing lab open to all students. It is located in the main campus library on the 5th floor. It has 99 computer stations (74 Mac and 25 PC) and three printers, one of which is a color printer. There are three other open labs on campus with a total of about 70 computer stations. Typical software includes productivity and academic software, such as office and internet applications and mathematical modeling software such as Mathematica. In addition, there are 4 group study rooms that are equipped with SmartBoards.

UCit also operates 8 other open computer labs on the main campus available to all UC students, faculty, and staff. Each lab computer has access to popular software for Internet access, document editing with Microsoft Office, statistical analysis, and multimedia editing. All labs have one or more black-and-white laser printers, and color printing is available in some locations. The Steger Student Life Center (UCit Student Technology Resources Center or STRC), is a 24-hour computer lab with a walk-in help desk, a creative design center for multimedia editing, Internet Express kiosks, and break-out rooms for small group work offering wireless network access throughout the facility. Internet Express kiosks are also available in the University Pavilion and the Tangeman University Center (TUC).

Secure wireless access appears to be available in every building on campus, including dormitories, according to a web-based clickable map of campus is available. A university authenticateduser can browse the location of wi-fi hotspots by floor for a particular building (https://webapps.uc.edu/ucit/access/FindWireless/).

UCFileSpace (http://www.uc.edu/ucit/learningtools/ucfilespace.html) provides a variety of free services such as online file storage, personal websites, blogs and wikis for students, faculty and staff for free.

The computing resources provided by the school, college, and the university are sufficient to support the scholarly needs of the students and faculty for the foreseeable future.

C. Guidance

School/IT Lab Guidance

Professors lecture on lab and equipment usage in the courses that utilize the labs. Students are provided demonstrations of specific equipment by qualified technical staff or faculty prior to performing laboratory work. Manuals concerning proper use of the equipment is also on hand and lab assistants (student workers) are available for

help when necessary.

CEAS and UCit Guidance

The CEAS Office of College Computing (OCC) provides consultants in Baldwin 860B and 860D during Engineering Library hours (M-F 8am-10pm, Sat 12-5pm, Sun 12-10pm). These consultants also assist students working in the 5th floor labs (Baldwin 548 and 550). ERC 617 is open 24 hours and a consultant is present M,T,Th 11am-6pm, W 12-4pm, and F 12-6pm.

The UCit Help Desk provides support for data and phone communications as well as all computing concerns for the faculty, staff, and students of UC. This support includes, but is not limited to, the mainframe, file servers, e-mail servers, Blackboard, UCFlex (benefits), password self-service, wireless access, and VPN remote access. The Help Desk offers several means of communication: phone, email, and an online help request form. The hours of assistance are M-F 7am-9pm and S-S 8am-9pm. UCit's Instructional & Research Computing Help Desk provides consulting services via walk-in at 630 Steger Student Life Center. Assistance is available for email, wireless, and installing UC-supported software.

UCit also provides support for faculty via the Faculty Technology Resources Center (FTRC). The FTRC provides faculty assistance for using technology to enhance the classroom experience, including Blackboard support and training.

CEAS Library Guidance

The CEAS Reference Librarian offers thorough reference services. Students can get assistance in-person, through email or the "Ask A Librarian" online form. They can also receive virtual assistance from a UC or OhioLINK librarian through the "Chat with a Librarian" 24x7 service. The Reference Librarian has developed reference guides tailored to each engineering and applied science discipline at the college. These are constantly updated and direct users to appropriate reference works, databases, and other information resources. A list of guides is available at www.libraries.uc.edu/libraries/ceas/resources/resources.html.

The CEAS librarians strive to provide extensive information literacy instruction across the curriculum, and they work closely with faculty to develop instruction that emphasize the core information literacy skills of retrieving, evaluating, and using information. The Head Librarian is a member of the UCL Instruction Advisory Committee, a cross-library group that has developed an overarching instruction program aligned with the Information Literacy Competency Standards for Higher Education of the Association of College and Research Libraries (ACRL). The UCL program reaches undergraduate students at four stages in their academic career: First-Year Experience course, English Composition sequence, mid-level specialized courses, and upper-level Senior Capstone courses. The Head Librarian served on a sub-committee that defined learning outcomes for each stage, and developed survey instruments for each stage that assess student learning of information literacy skills,

including evaluating the quality of information resources, choosing appropriate resources for research, and developing an appropriate search query.

CEAS librarians and staff taught 75 class sessions to a total of 1,303 undergraduate students in 2009-2010 (engineering and engineering technology programs), and 7 classes to a total of 332 undergraduate students in 2008-2009 (engineering programs only). These teaching efforts reached beginning CEAS students through Introduction to Engineering courses of nearly all college departments. The librarian's presentation included an assignment that assessed each student's ability to locate research materials and cite resources properly. These assignments were often designed in conjunction with faculty projects for the course, in order to achieve relevancy. Teaching efforts have also reached upper-level students in selected senior design courses. These students received more tailored instruction, followed by in-depth team meetings with the librarian for research assistance on specific projects. Due to the realignment of programs under the new CEAS and the staffing changes within the CEAS Library, the library's instruction program is currently undergoing a close review.

Beyond library instruction, the CEAS librarians are pursuing methods of outreach to encourage use of the library research resources. The Head Librarian has chaired the UC Libraries-wide Current and Future Technologies Team, which has developed new research tools such as toolbars for Internet browsers and research widgets for popular social networking web sites, e.g., Facebook. These tools give prominence to quality research databases and other resources. Specific to the CEAS Library, we are considering the further development of targeted Web 2.0 tools for outreach to engineering and engineering technology students (e.g., social networking websites).

D. Maintenance and Upgrading of Facilities

Over the past several years, the funds have been used mainly for computer upgrading and installation of a wireless network in the building. Computing hardware in the program labs and offices is replaced according to a schedule. Major software upgrades are made on a schedule determined by the ascertained stability of the new software and the academic calendar (avoiding major upgrades during an academic term). Software upgrades to repair faults are installed as soon as feasible after they are released. New hardware and software are purchased as needed to support the program within the normal budget process.

In general, the program has been able to develop and maintain good labs to support the program. The need for additional equipment or upgrades is determined from student and faculty feedback and during planning for new or modified courses. The program has one full-time technician for laboratory support. The level of support is, in general, better than adequate. The new lab equipment, computing equipment, and software are characteristic of that encountered in industry and therefore support the educational objectives of our program.

E. Library Services

The College of Engineering and Applied Science Library (CEAS Library) is a branch library housed within the College of Engineering and Applied Science. The CEAS Library is located on the West campus of the University of Cincinnati, and formed in September 2010 following the merger of the College of Applied Science Library and the Engineering Library. Organizationally, the CEAS Library is part of a larger unit called University of Cincinnati Libraries (UCL) that contains 10 research libraries and is headed by the Dean and University Librarian. The mission of University of Cincinnati Libraries is to provide excellent research collections, quality service, responsive instruction and training, and inviting facilities in pursuit of the University of Cincinnati's comprehensive mission of teaching, learning, research, and community service.

Staffing in the merged CEAS Library is 2 professional librarians (Head Librarian, Reference Librarian), 2 support staff, 1 half-time graduate assistant, and multiple student assistants. As compared to the total 2006 staffing in the two pre-merger libraries, CEAS Library has lost one librarian position due to budget cuts and one staff position due to increased needs in central functions (e.g., electronic resource processing). CEAS Librarians select books and other materials, manage collections, provide reference assistance, prepare and deliver instruction, and manage operations. Support staff perform circulation, reserves, local processing of materials, and student supervision functions. The graduate assistant presents workshops and provides interlibrary loan and technical support. Acquisitions, cataloging, and library computer support functions are handled centrally.

Several UC libraries are in close proximity and complement the CEAS Library collections and services. Other related college and departmental libraries are the Chemistry-Biology Library, Geology-Mathematics-Physics Library, DAAP (Design, Art, Architecture, and Planning) Library and the Health Sciences Library. The main Langsam Library houses humanities and social sciences collections, which serve general education needs of students. Materials across all UC Libraries may be searched and requested through the central UC Library Catalog.

The CEAS Library supports the specialized information needs of the CEAS students. The library facility, fully renovated in January 2002, covers 14,766 sq. ft.An adjacent 2,619 sq. ft. is utilized by the college's Office of College Computing for computer labs/classrooms. Combined, these spaces encompass the entire 8th floor of Baldwin Hall and provide a flourishing center of activity for CEAS students. Study spaces abound in the library, and support students' needs for both group and individual pursuits. Three group study rooms are available for open use. The library's original space in Baldwin Hall (dating from 1911) was restored to its original role as a quiet reading room as part of the 2002 renovation. This haven within the larger library offers space for those desiring to work alone. Individual study carrels are also available around the library's perimeter. To meet increased demands for study space, eight additional study carrels were added in April 2010.

The CEAS Library's Information Commons is available 24 hours a day to CEAS students, and consists of sixteen general-use workstations, one workstation with an attached scanner, and additional seating to accommodate laptop users. Ten additional workstations (three with attached scanners) are available inside the CEAS Library during operating hours. Wireless network access is available throughout the Information Commons and CEAS Library. Non-wireless users can also make use of live data jacks within the library, at designated study carrels. Further, the adjacent labs/classrooms managed by the Office of College Computing provide workstations equipped with specialized engineering software that is not available on all library computers.

A classroom is located inside the CEAS Library, and provides a sizable space for instructing students on the use of library resources and databases. This room is equipped with a data projector and instructor workstation, as well as a supply of laptops that students utilize for hands-on learning. In addition, the main Langsam Library contains two computer classrooms for library instruction and a 24-hour computer lab (available to any UC student) with group study rooms and interactive whiteboards.

Collections and Access

For the 2009-2010 academic year, the University collections included the following:

Library Collections, 2009-2010

	University of Cincinnati Libraries (UCL) total	**CEAS Library**
Print volumes	3.76 million	140,000
Print & electronic serial subscriptions	103,000+ (print and electronic)	200+ (print only)
Electronic Resources (databases, electronic journal collections, digital libraries, etc)	700+	200+ (Engineering, technology, and related disciplines)

Collectively, the UC Libraries' resources include more than 3.76 million volumes, over 103,000 serials (accessible in print or electronic format), and over 700 online research databases or e-collections. The University of Cincinnati is a founding member of OhioLINK, a consortium of 88 Ohio institutions of higher learning. The OhioLINK shared library catalog provides centralized searching on 48 million items across more than 11.5 million unique records, including the strong engineering collections of The Ohio State University and Case Western University. The majority of these materials are available for borrowing users at institutions throughout the state.

The CEAS Library collection focuses on the information needs of engineering and engineering technology students and faculty, and includes key journals, reference materials, books, conference proceedings, and technical reports. The CEAS Library's collection consists of approx. 140,000 volumes, over 200 serials received in print format, and many more items available electronically. The Head Librarian and Reference Librarian are jointly responsible for collecting materials in all formats, and they work closely with faculty to determine the needs of the programs. The CEAS Library collection development policy is available online at www.libraries.uc.edu/research/subject_resources/policies/polpreface.html. Students and faculty can place online Interlibrary Loan requests for materials not held at UC or OhioLINK libraries.

Other UCL librarians cooperate in purchasing relevant materials that relate to engineering, in areas such as polymers, bioengineering, biophysics, optics, laser technology, mathematics, geotechnical engineering, and environmental engineering. Furthermore, both CEAS librarians participate in a statewide interest group for engineering and computer science librarians, which is sponsored by the OhioLINK consortium. This group coordinates on resource-sharing and purchasing efforts, and promotes expanded access to electronic resources, beyond those housed at University of Cincinnati. UC Libraries subscribes to the primary research databases, electronic journals, and digital libraries that support all areas of engineering and engineering technology. Major research databases include ACM Digital Library, COMPENDEX (Engineering Index), Computer and Applied Sciences (EBSCO), Computer Source (EBSCO), IEEEXplore (IEEE Electronic Library), INSPEC, MRS Proceedings Online (Materials Research Society), Safari Tech Books, SciFinder Scholar (Chemical Abstracts), Scopus (Elsevier), SPIE Digital Library, and Web of Science (Science Citation Index). UC Libraries has purchased and activated a link resolver tool for electronic resources where possible; most electronic resources provide direct access to the full-text of articles. Electronic journal collections encompass major publishers and societies, including Academic, AIP, ASME, ASCE, Blackwell, Cambridge, Elsevier, IEEE, Oxford, Pergamon, Wiley, and Springer. In recent years, the library has acquired backfiles of electronic journals from Wiley, Elsevier, Springer/Kluwer, ASME, and individual titles, thereby increasing historical online access back to the first volume. Digital library collections consist of full-text technical books, manuals, and datasets, and include CRCnetBase, Knovel, IEEE, ScienceDirect/Referex (Elsevier), and Springer e-Book collections. In addition, the library subscribes to ProQuest Dissertations & Theses Database, which provides online access to University of Cincinnati PhD theses back to 1950, and dissertations for other institutions back to 1957. The CEAS Library Web site (www.libraries.uc.edu/libraries/ceas/) is the primary gateway to resources in UC Libraries, the OhioLINK consortium, and beyond. It contains reference guides, database guides, and other instructional materials that aid engineering and engineering technology students and faculty in locating research resources relevant to their disciplines. Access to electronic resources is available both on-campus and off-campus (via remote authentication).

Funding

For library collections, the general appropriations for University of Cincinnati Libraries and the CEAS Library since 2005 are as follows:

Library Materials Funding (General Funds)

Academic Year	**Libraries total** *(includesMedical and Law Libraries,which were not in UCL unit)*	**CEAS Library**
2005-2006	$7,351,608	$812,013
2006-2007	$7,024,131	$812,013
2007-2008	$7,812,433	$812,013
2008-2009	$8,440,308	$824,193 engineering / $57,566 applied science
2009-2010	$8,440,308	$741,774 engineering / $51,809 applied science

Until the 2008-2009 academic year, total UCL unit library materials funding experienced a modest annual increase or remained flat. In the 2009-2010 year, a 10% cut was applied to materials budgets for all subjects. These funds were used to cover cost increases for OhioLINKconsortial purchases (which include electronic journal and electronic book collections in engineering disciplines). Annual inflationary increases for serial subscriptions in engineering and engineering technology have continued each year, and have resulted in a very tight economic situation. The CEAS Library has avoided significant cutbacks in collections due to sizable support from endowed funds and private donations, the cancellation of paper journal subscriptions that duplicate online holdings, the elimination of duplicate subscriptions as part of the merging of libraries, and cost savings due to OhioLINKconsortial purchases of core online resources (e.g., Springer electronic book collection).

Reference Services

The CEAS Reference Librarian offers thorough reference services. Students can get assistance in-person, through email or the "Ask A Librarian" online form. They can also receive virtual assistance from a UC or OhioLINK librarian through the "Chat with a Librarian" 24x7 service. The Reference Librarian has developed reference guides tailored to each engineering and applied science discipline at the college. These are constantly updated and direct users to appropriate reference works, databases, and other information resources. A list of guides is available at www.libraries.uc.edu/libraries/ceas/resources/resources.html.

Teaching, Information Literacy, and Outreach

The CEAS librarians strive to provide extensive information literacy instruction across the curriculum, and they work closely with faculty to develop instruction that emphasize the core information literacy skills of retrieving, evaluating, and using information. The Head Librarian is a member of the UCL Instruction Advisory Committee, a cross-library group that has developed an overarching instruction program aligned with the Information Literacy Competency Standards for Higher Education of the Association of College and Research Libraries (ACRL). The UCL program reaches undergraduate students at three stages in their academic career: First-Year English Composition sequence, Mid-Level specialized courses, and upper-level Senior Capstone courses. The Head Librarian served on a sub-committee that defined outcomes at each stage. This group also developed survey instruments for each stage that assess student learning of information literacy skills, including evaluating the quality of information resources, choosing appropriate resources for research, and developing an appropriate search query,. These surveys are distributed to instructors each academic quarter.

First Year Survey:
http://www.surveymonkey.com/s.aspx?sm=jLPbdEiTt1NgCjCKzKkTvw_3d_3d

Mid-Level Course Survey:
http://www.surveymonkey.com/s.aspx?sm=J5eGE6ilivBk35QbaJkDoA_3d_3d

Senior Capstone Survey:
http://www.surveymonkey.com/s.aspx?sm=kQ2dM4Bo4TUPqrv5vhvM_2fw_3d_3dCE

AS Librarians taught 75 class sessions to a total of 1,303 undergraduate students in 2009-2010 (engineering and engineering technology programs), and 7 classes to a total of 332 undergraduate students in 2008-2009 (engineering programs only). Instruction reached beginning-level students in first-year courses of many departments in the college. The librarian's presentation included an assignment that assessed each student's ability to locate research materials and cite resources properly. These assignments were often designed in conjunction with faculty projects for the course, in order to achieve relevancy. Teaching efforts have also reached upper-level students in selected senior design courses. These students received more tailored instruction, followed by in-depth team meetings with the librarian for research assistance on specific projects. Due to the realignment of programs in the merged CEAS college and staffing changes in the CEAS Library, the library instruction program is currently undergoing a close review.
Beyond library instruction, the CEAS librarians are pursuing methods of outreach to encourage use of the library research resources. The Head Librarian chairs the UC Libraries-wide Current and Future Technologies Team, which has developed new research tools such as toolbars for Internet browsers and research widgets for popular social networking Web sites, e.g. Facebook. These tools give prominence to quality research databases and other resources. Specific to the CEAS Library, we are

considering the further development of targeted Web 2.0 tools for outreach to engineering and engineering technology students (e.g., social networking websites).

F. Overall Comments on Facilities

Facilities are equipped with fire extinguishers and are inspected regularly by the fire marshal. Students receive guidance on proper usage of equipment during lectures in specific classes that use those labs. Access to labs is based on the use of password. Only students who are currently enrolled in the classes using the labs are authorized and admitted to use the labs. Occupancy constraints established by the fire marshal are enforced. Students are advised not leave valuables, especially portable computing devices, unattended.

All CEAS faculty, staff and students have ID card access to enter the 548 Baldwin and 550 Baldwin computer labs when the labs are locked. ID card access to the other OCC labs is not available. To protect students and to prevent theft of computer equipment, all labs with 24-hour access have video cameras that record 24 hours per day, seven days per week. CEAS OCC computer lab equipment is secured via cable and locking systems.

The facilities utilized by the IT program range from good to excellent in support of student learning outcomes.

CRITERION 8. INSTITUTIONAL SUPPORT

A. Leadership

The Information Technology program is housed within the School of Computing Sciences and Informatics at the College of Engineering and Applied Science. Ultimately leadership of the program sits with the School Director. Because the school was just initiated in July of 2010, the Dean of the college has appointed an Interim Director, Dr. Prabir Bhattacharya. The School Director then appoints a Program Chair for the IT Program.

B. Program Budget and Financial Support

The College of Engineering and Applied Science budget is handled centrally through the Office of Budget Affairs. The budgets for FY10 and FY11 shown below are based on Full Time Equivalents (FTEs).

Program	Information Technology			
FY10 Expenses by Fund Type				
	General Funds	**Designated**	**Gifts**	**Grand Total**
Academic Full Time Salaries	**818,807**	**3,600**		**822,407**
Academic Part Time Salaries	**97,614**	**31,300**		**128,914**
Academic Faculty Salary Accrual	**22,415**			**22,415**
Unrep Unclassified Exempt Salaries	**18,135**			**18,135**
SEIU/1199 Salaries	**31,482**	**13,492**		**44,974**
BiWeekly Year End Accrual	**(182)**	**(23)**		**(205)**
Graduate Student Stipends	**5,190**			**5,190**
Student Salaries	**22,105**	**67,558**		**89,663**
Benefits	**316,121**	**19,364**		**335,485**
Operating	**98,919**	**35,655**	**2,510**	**137,084**
Grand Total	**1,430,606**	**170,946**	**2,510**	**1,604,062**

Program	Information Technology				
FY2011 - YTD Actuals + Commitments (thru May 2011)					
Sum of 2011 YTD Actuals + Commitments					
	General Funds	**Designated**	**Overhead**	**Gifts**	**Grand Total**
Academic Full Time Salaries	**652,017**				**652,017**
Academic Part Time Salaries	**135,286**				**135,286**
Academic Faculty Salary Accrual	**(14,811)**				**(14,811)**
Unrep Unclassified Exempt Salaries	**74,306**				**74,306**
Graduate Student Stipends	**3,600**				**3,600**
Grad Assistants Univ Dean Stipends UGA	**9,000**				**9,000**
Student Salaries	**2,328**	**66,561**			**68,889**
BiWeekly Year End Accrual	**(2,023)**	**(3,408)**			**(5,431)**
Benefits	**235,463**	**4,989**			**240,452**
Operating	**60,819**	**4,758**	**1,334**	**1,504**	**68,415**
Grand Total	**1,155,985**	**72,900**	**1,334**	**1,504**	**1,231,722**

A strong component of supporting the scholarship of teaching and learning by the institution is opportunities that are provided through the Center for Enhancement of Teaching and Learning (CET&L) by providing a variety of programs and formats to promote teaching and learning excellence throughout the year. CET&L promotes community through collaborations with colleges, departments and units to encourage inter-and multi-disciplinary relationships among faculty that will lead to further innovations in teaching practices. A particular seminar used to develop skills in articulating and evaluating student outcomes is "… a yearlong course design seminar in which faculty redesign a course with clearly articulated student learning outcomes; new activities; and assignments to help students achieve the learning outcomes; and assessment mechanisms that measure how well students have met learning goals…" . There is also a yearlong Scholarship of Teaching and Learning (SoTL) Seminar. This scholarship opportunity is one in which participants design, investigate, and implement a research project related to student learning in one of their courses (or programs) over the course of the academic year. A schedule of monthly workshops are sent through email and posted on the CET&L website, http://www.uc.edu/cetl/about.html along with an annual report of offerings and participation.

C. Staffing

While administrative staff has remained constant (or perhaps increased) and sufficient with the merger of the colleges, instructional and technical staff has been problematic.

The merging of the colleges and movement of the program sparked the departure of three full-time IT faculty (two to retirement and one to an internal move to another department/school). As mentioned earlier in the report, this has meant an increased reliance on adjunct instructors during the transition. In the change to semesters steps are being taken to reduce the instructional need of the program, primarily a change in the structure of how/when we send students out on co-op assignments.

Technical staff too has been in a holding pattern for the program. Till just a few years ago the IT program had a staff person dedicated full-time towards the support of its computing infrastructure. The person in that position left for another job and his duties were given to co-op students while the merger of the colleges was being completed. These co-op students are supervised by a full-time IT staff person who splits his time between two schools within the college. This situation has provided adequate support in the short-term, but it is hoped that the school or program can again retain a full-time staff person responsible for the computing resources of the program.

D. Faculty Hiring and Retention

The process for hiring new faculty involves interactions at all levels within the university from the department level up through the Provost's office and includes consideration of impacts on equal opportunity, research strengths and directions, teaching needs, costs associated with salary and startup packages, and alignment with strategic plans. If the position to be filled is created by a vacancy of an existing position, the Provost Division Vacancy Review Policies (http://www.uc.edu/content/dam/uc/provost/docs/academicpersonnel/a-z/Vacancy_Review_Policy_FINAL .pdf,) must also be adhered to.

Generally speaking, The School must develop a plan for faculty hiring that includes an analysis of needs (e.g., research directions, teaching, and strategic plans) and costs (e.g., general funds, soft funds, and lab space). This plan is reviewed with the CEAS Dean for approval. Revisions and/or clarifications may be requested. If the position is interdisciplinary, other departments or colleges may be involved.

Once approval is obtained, a requisition is submitted in UC's People Admin system. A search committee is also formed. The search committee initially works with UC's Human Resources Office to develop a recruitment plan and to ensure that all UC policies (http://www.uc.edu/content/dam/uc/af/equalopportunity/docs/recruitment_search_guide_web_rev11 april.pdf), e.g., Equal Opportunity, are adhered to. Ads are developed, vetted, and revised as needed. In addition, a listing of appropriate print and online locations is developed and the final add is advertised. This may also include conferences, personal recruitment contacts through which recruiting may take place. Ads include a statement referring candidates to apply online at www.jobsatuc.com and reference the job posting number. All candidates are required to file applications using the online procedures.

Working with the Office of Human Resources, the search committee collects a pool of candidates and winnows this pool down to a short list of candidates to be interviewed. Depending on the level of the position and the size and quality of the candidate pool, phone interviews may first be conducted. Typically 3 candidates are brought in for on-campus interviews. At this point, the School Director and CEAS Dean work with the search committee in conducting and coordinating campus visits. In addition to meeting with individual faculty and administrators and touring UC, candidates typically give a seminar.

Rankings and comments are collected from everyone participating in each candidate's itinerary using standardized methods and the data is used by the search committee to rank order the candidates.

Once a candidate is identified for hiring, the School Director working with the CEAS Dean negotiate an offer with the candidate.

Strategies to retain qualified faculty exist at several levels within the University of Cincinnati:

First, the University of Cincinnati faculty are represented by the AAUP who negotiate, on behalf of the faculty, the terms of a collective bargaining agreement between the faculty and administration. The terms of the 2010-2013 agreement include: Article 10 which covers across-the-board salary faculty increases. In addition, Article 10 provides for merit pay. Based on faculty performance reviews, the highest qualified faculty are provided with merit increases of up to 2% of their annual salary in recognition of their above average performance. In addition, Article 15 provides a mechanism for rewarding outstanding contributions via additional compensation. These contract articles both support the retention of faculty of the highest quality. Finally, Article 7 outlines the reappointment, promotion, and tenure process and includes language covering faculty mentoring as well as expedited reappointments, tenure, and promotion processes which offer further mechanisms by which faculty can be cultivated and rewarded for outstanding performance. In the past 6 years, 5 SECS faculty have been awarded Article 15 salary increases for outstanding contributions and/or in order to retain them from accepting offers and other institutions. In addition, approximately 25% of the faculty have received the maximum 2% merit pay increases in the past 2 years.

Second, at the university level there is a system of 10 awards designed to foster excellence and reward the highest examples of teaching, research, service, and entrepreneurship among the university faculty (http://www.uc.edu/facultyawards.html). These awards provide both a stipend and university-wide recognition of faculty contributions.

Third, at the college level, the College of Engineering and Applied Sciences issues a number of its own awards (http://ceas.uc.edu/banquet.html). Like the university level awards, these are designed to recognize the highest echelon of engineering and applied science faculty.

Finally, the Office of the Provost at the University of Cincinnati maintains several university-wide initiatives and resources whose goal it is to cultivate a high degree of faculty development and leadership (http://www.uc.edu/provost/units/faculty_development.html). Areas of focus include the enhancement of pedagogical and scholarly skills. These programs are designed, in part, to retain and maintain the most highly capable faculty within the various colleges and departments of the university.

E. Support of Faculty Professional Development

The faculty are encouraged and supported to maintain currency in their technical areas through a variety of means. At the school level, IT faculty are supported through provided funding to at least one conference or training per year. Additional funding from the school is offered at the discretion of the school director based on budgetary concerns and relevance of the request.

Additionally, the university provides mechanisms as well for faculty development:

Under the Collective Bargaining Agreement between the university and the faculty (http://www.scribd.com/doc/51538700/AAUP-University-of-Cincinnati-2010-2013-Collective-Bargaining-Agreement) faculty may take a paid (fully paid or partially depending on the length) academic leave (sabbatical) every seven years for professional development purposes. Article 25 describes this process. Several of the IT faculty have taken advantage of this over the past few years.

There is also a unit under the direction of the Provost in charge of faculty development (http://www.uc.edu/provost/units/faculty_development.html). Several IT faculty have been successful at obtaining annual Faculty Development Council grants funding attendance to technical training. The Center for the Enhancement of Teaching and Learning (http://www.uc.edu/cetl.html) also falls under this unit and several IT faculty have participated in events they initiate yearly.

CRITERION 9. PROGRAM CRITERIA

As noted earlier in the self-study, core classes taken by all students in the IT program at UC directly feed into the student outcomes which directly map to the Information Technology specific criteria. See the following tables showing specifically where each IT specific criteria is addressed in the student outcomes and where each of these student outcomes are being assessed specifically in the curriculum:

UC IT Degree Outcomes Checksheet - Degree outcomes satisfying ABET General and IT program attributes.

		(j) An ability to use and apply current technical concepts and practices in the core information technologies;	(k) An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems;	(l) An ability to effectively integrate IT-based solutions into the user environment;	(m) An understanding of best practices and standards and their application;	(n) An ability to assist in the creation of an effective project plan.
Develop Computer Applications	**1**					
Develop fundamental programming skills	1.1	×			×	
Program effectively within the student's specialty area	1.2					
Apply a development life cycle to a problem	1.3					
Design and develop a software prototype	1.4					
Use multiple computer system platforms	1.5					
Comprehend System Integration and Architecture principles	1.6					
Develop Database Applications	**2**					
Design a relational database	2.1	×			×	
Implement a relational database	2.2	×			×	
Query a relational database	2.3					
Secure database management systems	2.4					
Integrate relational database into applications	2.5					
Implement and Maintain Networking & System Infrastructure	**3**					
Apply and explain network protocols	3.1				×	
Implement a variety of network configurations	3.2	×			×	
Install and administer network services	3.3	×			×	
Protect and secure users' information on a computer network	3.4	×				
Protect and secure organizations' computer network	3.5	×				
Design and Implement Internet-Based Applications	**4**					
Design & implement a website using appropriate design guidelines	4.1	×			×	
Understand and implement elements of effective online users' experience	4.2	×				
Understand and Use Digital Media	**5**					
Understand the elements of capturing, editing and producing digital media (image, audio and video)	5.1	×				
Integrate digital media elements in presentations and other applications	5.2	×				
Practice User-Centered Design and Deployment	**6**					
Identify needs, analyze tasks, and develop profiles of users	6.1		×	×		
Develop and evaluate effective user interaction designs	6.2		×	×		
Practice user-centered design development and deployment	6.3		×	×		
Evaluate usability of an application	6.4		×	×		
Implement and Apply Project Management Principles	**7**					
Understand, develop and follow a project plan	7.1					×
Develop Gantt & PERT charts and critical path analysis	7.2					×
Communicate Effectively	**8**					
Make effective oral presentations	8.1					
Communicate effectively in written form	8.2					
Communicate effectively with peers, supervisors and clients	8.3					
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4					
Interact Effectively within the Organization	**9**					
Participate effectively as a team member	9.1					
Be able to work effectively with end users	9.2			×		
Have the ability to be a change agent within an organization	9.3			×		
Comprehend and apply project management principles	9.4			×		×
Describe and Practice Ethical and Professional Behaviors	**10**					
Practice ethical and professional behaviors	10.1					
Explain the rationale for security practices	10.2					
Apply accepted security practices	10.3					
Recognize the need for continued learning throughout their career	10.4					
Apply Appropriate Problem Solving Skills in:	**11**					
Web Development	11.1	×				
Interactive Multimedia Development	11.2	×				
Software Development	11.3	×				
Network and System Administration	11.4	×				
Database design, administration and integration	11.5	×				

UC IT Degree Outcomes
Assessment Summary 2010-2011
(↑= Met, ↓= Not Met)

		20IT170 Intro to IT	20IT171 Programming Logic & Methods	20IT200 Computational Concepts	20IT205 Computer Programming I	20IT206 Computer Programming II	20IT207 Computer Programming III	20IT209 Intro to Database	20IT220 Fund of Web Development	20IT230 Fund of Digital Media	20IT274 Computer Hardware	20IT275 Intro to Networking	20IT299 Implications of IT	20IT301 Systems Analysis & Design I	20IT309 Database Management	20IT313 Info Security and Privacy	20IT315 System Administration I	20IT430 Human Computer Interaction	20IT455 Management in IT	20IT490 Senior Design	20IT493 Senior Design Tech Practicum I	20IT494 Senior Design Tech Practicum II	20IT496 Senior Design Project Mgmt I	20IT497 Senior Design Project Mgmt II	Co-op Work Experience
Develop Computer Applications	**1**																								
Develop fundamental programming skills	1.1		↑	↑	↑	↑	↑																		
Program effectively within the student's specialty area	1.2				↑	↑	↑																		
Apply a development life cycle to a problem	1.3				↑	↑	↑							↑				↑							
Design and develop a software prototype	1.4																	↑							
Use multiple computer system platforms	1.5																↑								
Comprehend system integration and architecture principles	1.6													↑											
Develop Database Applications	**2**																								
Design a relational database	2.1							↑							↑										
Implement a relational database	2.2							↑							↑										
Query a relational database	2.3							↑							↑										
Secure database management systems	2.4														↓										
Integrate relational database into applications	2.5						↑								↑										
Implement and Maintain Networking & System	**3**																								
Apply and explain network protocols	3.1											↓													
Implement a variety of network configurations	3.2											↓													
Install and administer network services	3.3																↓								
Protect and secure users' information on a computer network	3.4											↑					↑								
Protect and secure organizations' computer network	3.5															↑									
Design and Implement Internet-Based Applications	**4**																								
Design & implement a website using appropriate design	4.1								↑																
Understand and implement elements of effective online users' experience	4.2								↑																
Understand and Use Digital Media	**5**																								
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Integrate digital media elements in presentations and other applications	5.2									↑															
Practice User-Centered Design and Deployment	**6**																								
Identify needs, analyze tasks, and develop profiles of users	6.1								↑																
Develop and evaluate effective user interaction designs	6.2																	↑							
Practice user-centered design development and deployment	6.3								↑																
Evaluate usability of an application	6.4																				↓				
Implement and Apply Project Management Principles	**7**																								
Understand, develop and follow a project plan	7.1																		↑			↑	↑		
Develop Gantt & PERT charts and critical path analysis	7.2																		↑			↑	↑		
Communicate Effectively	**8**																								
Make effective oral presentations	8.1								↓				↑						↑			↑			↑
Communicate effectively in written form	8.2								↓										↑			↑			↑
Communicate effectively with peers, supervisors and clients	8.3																				↑				↑
Communicate effectively - information architecture, navigation, interaction, graphically and with media	8.4									↑								↑							
Interact Effectively within the Organization	**9**																								
Participate effectively as a team member	9.1												↑						↑						↑
Be able to work effectively with end users	9.2																				↑				↑
Have the ability to be a change agent within an organization	9.3																		↑						↑
Comprehend and apply project management principles	9.4																						↑	↑	
Describe and Practice Ethical and Professional Behaviors	**10**																								
Practice ethical and professional behaviors	10.1												↑												↑
Explain the rationale for security practices	10.2															↓									
Apply accepted security practices	10.3															↑									
Recognize the need for, and have the ability to seek out and successfully pursue continued learning throughout their career	10.4																		↑						↑
Apply Appropriate Problem Solving Skills in:	**11**																								
Web Development	11.1								↑																
Interactive Multimedia Development	11.2									↑															
Software Development	11.3													↑											
Network and System Administration	11.4											↑													
Database design, administration and integration	11.5														↑										

IT Course Document
Department of Information Technology
College of Engineering and Applied Science
University of Cincinnati

Course Coordinator: Annu Prabhakar **Last Revised:** May 1, 2011

Course Title:
Programming Logic and Methods

Course Number:
IT171

UC Bulletin Description:
This course introduces basics of computer programming without reference to any specific computer language. The topic includes programming structures, methods, parameters, loops, and arrays. The course will give strong foundation in object-oriented programming concepts such as classes, objects, methods and attributes. The course stresses pseudo code and flowchart throughout to give students a strong foundation in programming basics before being introduced to object-oriented language specifics.

Pre-Requisite: (Course Number + Name)
None

Co-Requisite: (Course Number + Name)
20IT205: Computer Programming I

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Joyce Farrell, ***An Object-Oriented Approach to Programming Logic and Design***. *Third Edition*. Course Technology/Cengage Learning, 2011, ISBN 13: 978-0-5384-5298-4

Topics Covered:
Overview of Computers components
Object-Oriented Programming Concepts as class, object, attributes, and inheritance
Relationship between class and objects.
Variables and data types
Use Methods and Parameters
Different Programming structures

Decision structures
Looping
Arrays
Designing and Writing small computer programs using pseudo code and flowcharts
Introduction to UML

Course Learning Outcomes/How Assessed:

Understands basics concepts of computer programming.
Use flow chart and pseudo code to develop programming logic- homework, test
Understand different programming structure and use them in programs (Pseudo code, Flowchart) – homework, test
Create Arrays and use them in programs (Pseudo code) - homework, test
Understand class, objects, attributes and methods - homework, test
Use class diagram- homework, test

Program Outcomes Satisfied: (reference Program Outcomes)

1.1 Develop fundamental programming skills

Student Evaluation Methods:

Tests
Homework/Assignments

Information Technology Course Document
University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:
Computational Concepts

Course Number:
32-IT-200

UC Bulletin Description:
The emphasis of the course is in the applications of computational concepts used specifically in information technology. Students are given a range of computational topics that lead to the understanding in and the application of how, why, and where these computational concepts are applied in information technology applications.

Pre-Requisite: (Course Number + Name)
IT170 Intro to IT
IT205 Computer Programming I
MATH179 Algebra & Trig II

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
No Textbook. All materials have been generated for the students and are placed on Blackboard.

Web Resources:
http://www.rwc.uc.edu/koehler/comath/text.htm
http://mathforum.org/library/topics/number_theory/?keyid=21923539&start_at=301&num_to_see=50

Topics Covered:
Logic and Set Theory
Programming Geometric Series

Data Representation
Computer Arithmetic (Floating Point, Integer, and Binary)
Encryption
Compression
Error Checking & Correction
Graph Theory
Probability and Statistics and Random Numbers

Course Learning Outcomes:

1. Students will identify the different ways integer, decimal, and floating point numbers are handled by the computer and the ramifications of choosing one data type over the other.
2. Students will identify the different encoding schemes used for character generation
3. Students will identify the various encryption mechanisms
4. Students will identify the various compression mechanisms
5. Students will identify the various error checking and corrections mechanisms
6. Students will identify the various graphs mechanisms
7. Students will discuss the application of random numbers and probability & statistics as it applies to software development.

Program Outcomes Satisfied: (reference Program Outcomes)

1.1 Develop fundamental programming skills

Student Evaluation Methods:

Class Participation
Homework
Midterm
Final

Information Technology Course Document
University of Cincinnati

Course Coordinator: Tom Wulf **Last Revised:** Spring 2011

Course Title:
Computer Programming I

Course Number:
32IT205

UC Bulletin Description:
This is the first programming course for students with no prior programming experience. It intends to provide an introduction to the fundamental concepts of composing and running a program using a current high-level programming language. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

Co-Requisite: (Course Number + Name)
32IT171 Programming Logic and Method

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☐ Required **Course Type: X** Core ☐ Track

Course Area: ☐ IT-Gen **X** SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Big Java, 4th Edition, by Cay Horstmann, John Wiley & Sons, Inc. 2010
ISBN: 978-0-470-57827-8
|
Introduction to Computing and Programmming with Java, A Multimedia Approach,
Mark Guzdial and Barbara Ericson, Prentice Hall, ISBN# 0-13-149698-0.

Various Web resources: Java API, Safari Books Online

Topics Covered:

Basic Programming Structure: Platform, Processes, I/O General Problem Solving Techniques
Data & object types & scope: Operators, expressions, and library functions; Input/Output functions
Logic Structures: Sequential, Decision and Iteration

Functions: Constructors, Methods and Static Methods
Algorithms & Applications
Object-oriented Concepts: Using pre-defined classes; Designing classes
Data Structures: Arrays and Array Lists and List processing
Introduction to Files and Streams

Course Learning Outcomes/How Assessed: (See associated course outcome assessment document)

1. Understand the basic process involved in running a program.
2. Develop accurate algorithms to implement a programming solution.
3. Acquire necessary syntax rules to communicate with the computer.
4. Explain and apply the principles of structured design to solve problems.
5. Identify the appropriate use of operators including arithmetic, relational, logical operators, assignment, etc.
6. Describe various data types as well as data structures used in variables and objects.
7. Explain and use sequence, decision, and iteration control structures.
8. Understand the reason and the basics of OOP paradigm.
9. Explain and use functions.
10. Apply the documentation process throughout the program life cycle.
11. Understand the reasons for using data structures and be able to manipulate data in arrays.

Program Outcomes Satisfied: (reference Program Outcomes)

1. Develop Computer Applications
1.1 Develop fundamental programming skills
1.2 Program effectively within the student's specialty area
1.3 Apply a development life cycle to a problem

Student Evaluation Methods:

Labs and Assignments

Information Technology Course Document
University of Cincinnati

Course Coordinator: Tom Wulf **Last Revised:** Spring 2011

Course Title:
Computer Programming II

Course Number:
32IT206

UC Bulletin Description:
This course is a continuation of Computer Programming I. Students will learn to write programmer defined functions, work with data structures, read and write files to and from disk, and construct programmer defined class as well as import pre-defined classes to use in their programs using a current high-level programming language. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)
32IT205 Computer Programming I

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☐ Required **Course Type:** X Core ☐ Track

Course Area: ☐ IT-Gen X SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Big Java, 4th Edition, by Cay Horstmann, John Wiley & Sons, Inc. 2010
ISBN: 978-0-470-57827-8

Various Web resources: Java API, Safari Books Online

Topics Covered:

Introduction/Review		**Chapters 1-8, 13**
	Class and Object Terms	
	Methods, Constructors, etc.	
	Objects and Classes	
	Arrays/ArrayLists	
Object Oriented Design		**Chapters 9, 11, 16**
	Interfaces	
	Polymorphism	

	Inheritance	
	System Design	
Exceptions		**Chapter 14**
	Exceptions	
GUI Design		**Chapters 10, 12**
	Event Handling	
	Graphical User Interface	
Streams	Streams	**Chapter 15**

Course Learning Outcomes/How Assessed:

1. Understand and implement the fundamental concepts of the object-oriented paradigm:
1.1 Inheritance
1.2 Encapsulation
1.3 Polymorphism
2. Model real world concepts into class structures and implement them as objects.
3. Understand how objects communicate with each other.
4. Create visual components and program for events using the Swing component classes of Java.
5. Understand and implement dynamic Web page components using applets

Program Outcomes Satisfied: (reference Program Outcomes)

1. Develop Computer Applications
1.1 Develop fundamental programming skills
1.2 Program effectively within the student's specialty area
1.3 Apply a development life cycle to a problem

Student Evaluation Methods:

Programming Assignments and Labs

Information Technology Course Document
University of Cincinnati

Course Coordinator: Tom Wulf **Last Revised:** Spring 2011

Course Title:
Computer Programming III

Course Number:
32IT207

UC Bulletin Description:
This course is a continuation of Computer Programming II. Students will learn to work with pointers and/or reference variables and implement abstract data types. Additional libraries of classes will be included for discussion and usage in programs. Other object oriented programming concepts such as function/operator overloading, inheritance, overrides, polymorphism, and class templates will be discussed. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)
32IT206 Computer Programming II

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☐ Required **Course Type:** X Core ☐ Track

Course Area: ☐ IT-Gen X SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Big Java, 2nd Edition, by Cay Horstmann, John Wiley & Sons, Inc. 2006
ISBN: 0-471-69703-6

Topics Covered:

Introduction/Review	**(Material from CP I and II)**
Streams	
System Design	
Abstract Data Types	
Multithreading	
Database Connectivity	
Network Programming	

Course Learning Outcomes/How Assessed:

1. Apply concepts of the object-oriented paradigm: a. Inheritance b. Encapsulation c. Polymorphism 2. Model real world concepts into class structures and implement them as objects. 3. Implement objects that communicate with each other. 4. Create visual components and program for events using Java Swing 5. Understand client/server programming using Java 6. Understand data storage and apply programs that store data 7. Recognize the reusability of objects in software development.

Program Outcomes Satisfied: (reference Program Outcomes)

1. Develop Computer Applications
1.1 Develop fundamental programming skills
1.2 Program effectively within the student's specialty area
1.3 Apply a development life cycle to a problem
2. Develop Database Applications
2.5 Integrate Relational database into applications

Student Evaluation Methods:

Programming Assignments and Labs

Information Technology Course Document
University of Cincinnati

Course Coordinator: Russ McMahon / Hazem Said **Last Revised:** April 12, 2011

Course Title:
Introduction to Database

Course Number:
32-IT-209

UC Bulletin Description:
Introduction to Database system concepts and terminology with emphasis on relational database design. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)
IT170 Introduction to Information Technology

Co-Requisite: (Course Number + Name)
None

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Microsoft Office Access 2003 Inside Out, John Viescas
Go – MS Access - Comprehensive

Topics Covered:
Database Design
Creating Tables
Creating Queries
Creating Forms
Creating Reports

Course Learning Outcomes:
Students will design a database.
Students will create tables.
Students will create queries.

Students will create forms.
Students will create reports.

Program Outcomes Satisfied: (reference Program Outcomes)

2.1 Design a relational database
2.2 Implement a relational database
2.3 Query a relational database

Student Evaluation Methods:

Homework
Project
Tests

Information Technology Course Document

University of Cincinnati

Course Coordinator: Tom Wulf **Last Revised:** Spring 2011

Course Title:

Fundamentals of Web Development

Course Number:

32-IT-220

UC Bulletin Description:

Current:
Fundamentals of website design with a focus on user-centric design, creation, implementation and publication of static websites using prevalent standards and common industry development tools. Web design process, using existing documents for web content and XML technology basics will be covered. Students will create a personal website on the University server and also a complete website as a final project. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☒ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☐ IT-Gen ☐ SD ☒ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Both texts required and available as online full-text resources through Safari:
HTML XHTML and CSS Visual Quickstart Guide 6th *Edition*, Elizabeth Castro. Peachpit Press.
CSS Cookbook 2nd *Edition*, Christopher Schmitt, O'Reilly Pub.
www.w3schools.com Web technology tutorials
www.safari.org Safari Techbooks Online (institutional library subscription)

Topics Covered:

1. Brief history of the internet/web
2. Use of prevalent industry tools (Adobe Dreamweaver) for website creation.
3. Use of prevalent industry tools for validation of pages to prevalent standards.
4. Techniques for making Websites accessible to differently-abled populations.
5. Publishing locally created web pages to a web server for hosting.
6. Creation of standards-compliant, semantically correct static web documents:
    a. Basic Document Structure
    b. Separation of the page into logical semantic units
    c. Validation of Web documents to prevalent standards
7. Styling of documents and creation of page design layouts with CSS:
    a. Types of CSS selectors (element, contextual/descendant, class, id, and generic, etc.) and when to use them.
    b. Attribute/properties for styling text.
    c. Attribute/properties for page elements.
    d. Advanced CSS page layout with float, position, and clear.
    e. Overview of common CSS page layouts and CSS-based page design elements: column layouts, navigation structures, stylistic elements, etc.
8. Web design
    a. Functional Design for Usability
    b. User Modeling
    c. Aesthetics
    d. Designs for common types of web sites
9. Intro to XML Technologies
    a. XML Document Structure
    b. Well-formedness
    c. XPATH and XSLT

Course Learning Outcomes/How Assessed:

1. **Publishing locally created web pages to a web server for hosting.**
   Students are required to post their assignments (1-3) which incrementally create a personal home page on the University hosting server.
2. **Creation of standards-compliant, semantically correct static web documents**
   Assignments and final project for the course require students to submit the Markup, CSS, (1-4, Final Project) and ADA validation reports (2-4, Final Project).
3. **Markup syntax:**
    a. **Basic Document Structure:**
       Assignments (1-4) and final project.
    b. **Separation of the page into logical semantic units**
       Assignments (1-4) and final project.
    c. **Markup for normal text**
       Assignments (1, 2, 3) and final project.
    d. **List markup:**
       Assignment (2).

e. **Hyperlinks:**
   Assignment (2) and final project.
f. **Use of images in Web documents**
   Assignment (3) and final project.
g. **Presenting tabular data**
   Assignment (4).
h. **Multimedia content in web documents**
   Final project.

4. **Styling of documents and creation of page design layouts with CSS:**
   d. **Types of CSS selectors and when to use them.**
      All Assignments (1-4), Lab 2, and final project.
   e. **Attribute/properties for styling text.**
      Assignments (1-3), Lab 2, and final project.
   f. **Attribute/properties for styling lists.**
      Assignment (2).
   g. **Attribute/properties for styling hyperlinks).**
      Assignments (1-2) Lab 2, and final project.
   h. **Attribute/properties for styling tables.**
      Assignment (4).
   i. **Advanced CSS page layout with float, position, and clear.**
      Final project. Lab 2.
5. **Web design:**
   j. **Functional Design for Usability**
      Assignments (1-4), Final project, Lab 3
   k. **User Modeling**
      Final Project, Lab 3
   l. **Aesthetics**
      Assignments (1-4), Final Project, Lab 3
   m. **Designs for common types of web sites**
      Lab 3

Program Outcomes Satisfied:

4.1 Design & implement a website using appropriate design guidelines
4.2 Understand and implement elements of effective online users' experience
6.1 Identify needs, analyze tasks, and develop profiles of users
6.3 Practice user-centered design development and deployment
8.1 Make effective oral presentations
8.2 Communicate effectively in written form
11.1 Apply Appropriate Problem Solving Skills in Web Development

Student Evaluation Methods:

This course uses project-based assessment. There is no mid-term or final exam. Assignments, labs, and final project count for 80% of the final grade.

Self-test quizzes and any other graded activities count for the remaining 20%.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Vali Tadayon **Last Revised:** May 20, 2011

Course Title:

Fundamentals of Digital Media

Course Number:

32 IT 230

UC Bulletin Description:

Emphasizes the production of interactive presentations that incorporate graphics, sound, animation and video. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32 IT 170: Introduction to Information Technology

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 30

Lab Component: ☒ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☒ DM

Textbook(s)/Resources:

Tay Vaugh. *Multimedia: Making It Work.* 8th edition. Berkeley, CA: Osborne/McGraw-Hill, 2007. ISBN 0-07-174846-6

Topics Covered:

Multimedia processes, Planning for multimedia, Design considerations, Typography and color, Visuals: Imaging, digital photography, scanning stock libraries, image manipulation, Sound, Video and animation, Production and testing, Project presentation

Course Learning Outcomes/How Assessed:

Multimedia processes, Planning for multimedia, Design considerations, Typography and color, Visuals, Sound, Video and animation, Production and testing, Project presentation: plan and produce multimedia projects that incorporate elements produced using various software programs and apply concepts, including documentation and presentation of projects

Projects include: 1. Using PowerPoint to build a basic interactive multimedia production on photosynthesis. 2. Using PowerPoint to build a basic interactive multimedia production on

photosynthesis incorporating a user-friendly navigation scheme. 3. Using PowerPoint to build an intermediate interactive multimedia production on an appropriate topic.
4. Creating and editing digital images for incorporation into an interactive multimedia production. 5. Creating and editing digital images for incorporation into an interactive multimedia production. 6. Creating a storyboard for an intermediate interactive multimedia production.
7. Using PowerPoint or Google Site to build a sophisticated interactive multimedia production employing project planning and management methods.

Activities include: 1. Working in a group to define various media characteristics.
2. Determining equipment and software characteristics through an inventory of the Multimedia Lab. 3. Brainstorming final project topics and characteristics in work groups. 4. Presentation of projects in formal oral presentations.

Program Outcomes Satisfied: (reference Program Outcomes)

5.1	Understand the elements of capturing, editing and producing digital media (image, audio and video)
5.2	Integrate digital media elements in presentations and other applications
8.4	Communicate effectively-information architecture, navigation, interaction, graphically, and with media
11.2	Interactive Multimedia Development

Student Evaluation Methods:

Lab projects, Presentations, Activities

Information Technology Course Document

University of Cincinnati

Course Coordinator: John Nyland **Last Revised:** 5/18/2011

Course Title:

Computer Hardware

Course Number:

20 IT 274

UC Bulletin Description:

Topics of discussion include, but are not limited to, installation, configuration and upgrading, diagnosing and troubleshooting, preventive maintenance, motherboards, processors, and memory; RAM, and printers. This course will also explore the advancement of technological development, as well as, timeless problem solving strategies. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

20IT170

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Andrews, A+ Guide to Hardware Managing, Maintaining and Troubleshooting, Course Technology

Topics Covered:

Hardware Needs Software to Work, PC Repair Fundamentals, Form Factors and Power Supplies Processors and Chipsets, Motherboards, Upgrading Memory, Hard Drives, Installing and Supporting I/O Devices, Multimedia Devices and Mass Storage, PCs on a Network, Notebooks, Tablet PCs, and PDAs, Supporting Printers and Scanners

Course Learning Outcomes:

Determine user needs for personal computers
Specify appropriate hardware

Explain the operation of various computing subsystems
Apply appropriate problem solving skills in supporting and troubleshooting computer hardware

Program Outcomes Satisfied: (reference Program Outcomes)

11.4 Network and System Administration

Student Evaluation Methods:

2 written exams (short answer and multiple choice).
6-8 hands-on labs with written assignments.
1 lab practical exam (troubleshooting unknown errors)

Information Technology Course Document

University of Cincinnati

Course Coordinator: Mark Stockman **Last Revised:** May 2011

Course Title:

Intro to Networking

Course Number:

32IT275

UC Bulletin Description:

A broad course covering the spectrum of computer networking in the theoretical and practical frame- work. Students will learn such topics as network media, topologies, the OSI model, protocols, security, and network architectures. Hands-on labs for this course will introduce implementing and managing a peer-to-peer local network. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32IT205 Computer Programming I
32IT274 Computer Hardware

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Tomsho, G., Guide to Networking Essentials 5th Edition, Course Technology
Instructor Supplied Material/Learning Objects (http://homepages.uc.edu/~stockmma/courses/)

Topics Covered:

Intro to Networking/System Administration (LAN/WAN, Client/Server)
Network Design (Topology and physical networking)
Media and Network Interface Cards (Types and how they function)
OSI Model/Protocols (Packet creation/delivery, heavy coverage of TCP/IP)
Packet Addressing (IP addressing, subnets, private/public addressing, DHCP, naming)
System Administration Tasks (How to assure functionality, security, reliability, performance)
Network/System Troubleshooting (Planning, documentation, scope, troubleshooting process)

Course Learning Outcomes:

Understand the OSI model (and its importance) and packet creation/delivery.
Apply and explain network protocols.
Understand the characteristics of various networking media.
Implement a variety of network configurations.
Explain what a router does, how it functions, and how it differs from hubs and switches.

Program Outcomes Satisfied: (reference Program Outcomes)

3.1 Apply and explain network protocols.
3.2 Implement a variety of network configurations.
3.4 Protect and secure users' information on a computer network.

Student Evaluation Methods:

2-3 written exams (essay and short answer).
6-8 hands-on labs with written assignments.
1 practical/lab exam.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Vali Tadayon **Last Revised:** 05/20/2011

Course Title:

Implications of Information Technology

Course Number:

32IT299

UC Bulletin Description:

This course focuses on the impact brought upon our society by computer and its related technologies. Issues related to privacy, ethics law, encryption, copyright, computer crimes, etc, will be critically examined.

Pre-Requisite: (Course Number + Name)

32IT170 (Intro to information Technology) & Sophomore Standing

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 30

Lab Component: ☒ Required **Course Type:** ✓ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

- A Gift of Fire: Social, Legal and Ethical issues for computers and the Internet, Third Edition, Sara Baase, Prentice hall, ISB 0-13-600848-8 (required text)
- The Ethics of Management, Fifth Edition, LaRue Tone Hosmer, McGraw-Hill, ISBN 0-07-299607-2 (supplement, optional)

Topics Covered:

Moral Analysis and Ethical Duties
Privacy and Personal Information
Encryption and Interception of Communications
Can we trust the computer?
Freedom of Speech in Cyberspace
Intellectual Property
Computer Crime
Computers and Work
Broader Issues on the Impact and Control of Computers
Professional Ethics and Responsibilities

Course Learning Outcomes

- **To help students to recognize ethical problems when they appear.**
- **To help students realize the Positive as well as the negative contribution of Information Technology on society.**
- **To enable students to think in a structured, orderly way about their obligations to other people.**
- **To learn a logical and structured means of analyzing alternative solutions to ethical problems.**
- **To gain the self-confidence needed to choose among multiple solutions and then present with confidence their proposed course of action.**

How Assessed:

- **Book Report (students are required to read a book, write a report and present to class)**
- **Term paper (students are required to select a topic, research it, write a report and present to class)**
- **Weekly students' debate and presentations (students are assigned to groups and given a topic to research and debate. Each week groups debate a different topic)**

Program Outcomes Satisfied: (reference Program Outcomes)

10.1 Practice ethical and professional behaviors
8.1 Make effective oral presentations
9.1 Participate effectively as a team member

Student Evaluation Methods:

Reports, Presentations and Exam

Department of Information Technology
College of Engineering & Applied Science
University of Cincinnati

Course Coordinator: Annu Prabhakar **Last Revised:** Winter 2011

Course Title:

Systems Analysis and Design I

Course Number:

IT301

UC Bulletin Description:

Current:
A broad study of systems development life-cycle, from the initial stages of systems requirement analysis to the implementation of the system. Different techniques and methodologies in different development stages will be studied. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32IT207- Computer Programming III
32IT275- Intro to Networking
32IT309 - Database Management

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Applying UML and Patterns, Craig Larman, Third Edition Prentice Hall, 2005, ISBN 0-13-148906-2

Topics Covered:

Systems Analysis and Design
Object-Oriented Analysis and Design
Unified Modeling Language
Agile Modeling
Unified Process (UP)
Waterfall Model vs UP
UP Phases: Inception, Elaboration, Construction and Transition

Iterations
Use Cases
Use case models
Interaction diagrams
Domain Model
Interaction diagrams, System Sequence Diagram
GRASP Patterns
Applying GRASP to Object Design

Course Learning Outcomes/How Assessed:

Understand the difference of Analysis and Design - HW Assignment, Test
Understand the difference of water fall model and the Iterative development – HW Assignment/Test
Understand Unified process- HW Assignment, Tests
Understand the 4 phases of Unified process - HW Assignment, Tests
Understand GRASP patterns and apply those to Object-oriented system design– Test
Use UML to develop design diagrams – HW Assignments, Test
Develop use cases and use case model – HW Assignments, Test
Develop System Sequence Diagram - HW Assignment, Test
Develop Domain model – HW Assignment, Test

Program Outcomes Satisfied: (reference Program Outcomes)

1.3 Apply a development life cycle to a problem
1.6 Comprehend system integration and architecture principles

Student Evaluation Methods:

Tests
HW/Assignments

Information Technology Course Document

University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:

Database management

Course Number:

32-IT-309

UC Bulletin Description:

Database development using popular database packages. Tables, forms, queries, reports, and building applications that automate database functions. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32-IT-209 Introduction to Database

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 4

Lab Component: √ Required **Course Type:** √ Core ☐ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☐ Net √ DB ☐ DM

Textbook(s)/Resources:

Beginning SQL Server 2008Express for Developers: From Novice to Professional by Robin Dewson, Apress, 2006

Topics Covered:

Designing and creating databases on a database server
Creating tables, indexes, and views
Database security
Database maintenance, backup and recovery
SQL language, DML and DDL
Stored procedures and triggers

Course Learning Outcomes/How Assessed:

Create a database on a database server/Project
Create tables, indexes and views/Projects, Quiz
Write SQL statements to manipulate data/Project, Quiz
Create and use stored procedures and triggers/Projects, Quiz

Use database security features/Project, Quiz

Program Outcomes Satisfied: (reference Program Outcomes)

2.1 Design a relational database 2.2 Implement a relational database 2.3 Query a relational database 2.4 Secure database management systems 11.5 Apply appropriate problem solving skills in database design, administration, and integration

Student Evaluation Methods:

Quizzes Lab exercises Projects

Information Technology Course Document

University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:

Business Intelligence

Course Number:

32-IT-311

UC Bulletin Description:

Data warehouse design and implementation, OLAP cubes, data mining, data transformation, reporting. Hands-on active learning required

Pre-Requisite: (Course Number + Name)

32-IT-309 Database Management

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 3

Lab Component: □ Required **Course Type:** □ Core √ Track

Course Area: □ IT-Gen □ SD □ Web □ Net √ DB □ DM

Textbook(s)/Resources:

Professional SQL Server Analysis Services 2008 with MDX by Sivakumar Harinath and Stephen Quinn, Wiley Publishing, 2009

Topics Covered:

Difference between OLTP and OLAP systems
Data warehouse design
Creating and browsing cubes
Data mining
ETL (extract, transform and load)
Creating Reports from OLTP and OLAP systems

Course Learning Outcomes/How Assessed:

Understand the design differences between OLTP and OLAP systems/Quiz
Create and browse cubes/Project
Implement data mining algorithms and interpret results/Project, Quiz
Create and use ETL packages/Project, Quiz

Create reports from OLTP and OLAP systems/Project, Quiz

Program Outcomes Satisfied: (reference Program Outcomes)

1.6 Comprehend system integration and architecture principles 2.3 Query a relational database system 2.5 Integrate relational database into applications 11.5 Apply appropriate problem solving skills in database design, administration and integration

Student Evaluation Methods:

Projects Tests

Information Technology Course Document

University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:

Information Security and Privacy

Course Number:

32IT313

UC Bulletin Description:

Information Security and Privacy is designed to give the student an introduction to some of the following security concepts: confidential, integrity, availability, authentication, and non-repudiation. This course first examines computer security and then moves on to the broader, more applicable issue of network security.

Pre-Requisite: (Course Number + Name)

32IT207 Computer Programming III
32IT275 Intro to Networking

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Whitman, M., Principles of Information Security, Course Technology

Topics Covered:

Introduction to Information Security
The Need for Security
Legal, Ethical, and Professional Issues in Information Security
Risk Management
Planning for Security
Technology: Firewalls & VPNs
Technology: IDS and Access Control
Cryptography

Physical Security
Implementing Security
Security Personnel
Security Maintenance

Course Learning Outcomes:

Identify and prioritize information assets.
Identify and prioritize threats to information assets.
Define an information security strategy and architecture.
Plan for and respond to intruders in an information system.
Describe legal and public relations implications of security and privacy issues.
Present a disaster recovery plan for recovery of information assets after an incident.

Program Outcomes Satisfied: (reference Program Outcomes)

3.5 Protect and Secure organizations' computer network
10.2 Explain the rationale for security practices
10.3 Apply accepted security practices

Student Evaluation Methods:

Weekly online quizzes
2 exams
2 research assignments

Information Technology Course Document

University of Cincinnati

Course Coordinator: Mark Stockman **Last Revised:** 5/10/11

Course Title:

System Administration I

Course Number:

32IT315

UC Bulletin Description:

This course will provide the knowledge and hands-on skills necessary to manage a Local Area Network and its resources. Topics covered include directory services, server management, file and print services, and user/client administration. Students will setup and manage a fully functioning computer network of systems. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32IT275 Intro to Networking

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Wells, N., The Complete Guide to Linux System Administration, Course Technology
Instructor Supplied Material/Learning Objects (http://homepages.uc.edu/~stockmma/courses/)

Topics Covered:

Introduction to System Administration using Linux OS (History, installation, etc.)
Command line basics (file/directory structure, interface standards, CLI text editors, shell scripting)
Users, groups, and file permissions
Disk, process and service management
Software management (using pre-compiled packages, update engines, and un-compiled code)
TCP/IP on Linux (review of TCP/IP basics and how to network Linux systems)
File sharing and web services (Samba and Apache on Linux)
Kernel management (how and why to update/modify the Linux kernel)

System Administration soft skills

Course Learning Outcomes/How Assessed:

Use multiple computer system platforms, and understand the advantages of each.
Install and administer network services.
Protect and secure users' information on a computer network.
Develop a comfort level with the command line interface for system administration.
Understand strategies for planning/designing systems.

Program Outcomes Satisfied: (reference Program Outcomes)

1.5 Use multiple computer system platforms, and understand the advantages of each.
3.3 Install and administer network services.
3.4 Protect and secure users' information on a computer network.

Student Evaluation Methods:

2-3 written exams (essay and short answer).
6-8 hands-on labs with written assignments.
1 practical/lab exam.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Mark Stockman **Last Revised:** 5/10/11

Course Title:

System Administration II

Course Number:

32 IT 316

UC Bulletin Description:

Advanced study of systems administration in a computer network. This course will go beyond the basic study of systems administration into such areas as backup and recovery, clustering and load balancing, security, and an array of network services such as DNS, DHCP, and VPN. Students will implement all tools in the lab portion of the course. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32IT315

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Palmer, Hands-On Microsoft Windows Server 2008, Course Technology

Topics Covered:

X 500 Directory-based OS overview, Server 2003 platforms, Active Directory and account management, configuring managing and troubleshooting resource access. Server-based printing, data storage schemas, network services overview (DHCP, DNS, WINS, Remote Access, Telnet). Security Policies in Active Directory, Server and network monitoring. Managing system reliability and availability.

Course Learning Outcomes:

Students learn to determine hardware requirements for server platforms
Students learn to design, implement and maintain a directory-based server infrastructure
Students learn to create and manage user accounts

Students learn to implement and manage Active Directory
Students learn to configure, manage and maintain resource access (file shares, printing, DFS, Disk Quotas)
Students learn to create and manage Server 2003 security policies
Students learn to monitor server resource utilization for system reliability and availability

Program Outcomes Satisfied: (reference Program Outcomes)

3.1 Apply and explain network protocols
3.3 Install and Administer network services
11.4 Network and System Administration

Student Evaluation Methods:

2 written exams (short answer and multiple choice).
6-8 hands-on labs with written assignments.
1 lab practical exam

Information Technology Course Document

University of Cincinnati

Course Coordinator: John Nyland **Last Revised:** 5/18/2011

Course Title:

Network Infrastructure Development

Course Number:

20 IT 317

UC Bulletin Description:

An in-depth course covering the array of computer networking media and their associated components found in both LAN and WAN environments. Each media will be studied for its characteristics and students will obtain the skills for its implementation in the network. Physical cabling as well as wireless topics will be covered. This course utilizes a multitude of hands-on activities with various network media. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

20IT275 Intro to Networking

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Press Wentworth, T., Windows Server 2008 Network Infrastructure Configuration Study Guide, MS
Oppenheimer, P., Top Down Network Design 3rd Edition, Cisco Press
OPNET Network Modeling environment
Instructor Supplied Materials

Topics Covered:

Physical Infrastructure cabling; CAT 5 and up, Serial Connections, Wireless Standards 802.11 a, b, g and n, 802.16
Plan and modify a network topology; Enterprise Composite Network Model, physical placement of network resources, identify network protocols to be used
Plan an internet connectivity strategy

Plan a network monitoring strategy using Network monitor, System monitor, Wire Shark
Troubleshoot connectivity issues. Tools include the route, tracert, ping, pathping, and netsh commands Wire Shark and Network Monitor.
Logical Infrastructure resource planning, implementation and management; addressing and name resolution strategies
Analyze IP addressing requirements. Create an IP subnet scheme.
Plan a DNS namespace design. Plan a forwarding configuration. Plan for DNS security.

Course Learning Outcomes:

Plan a TCP/IP physical, wireless and logical network.
Plan a Dynamic Host Configuration Protocol (DHCP) strategy.
Optimize and troubleshoot DHCP.
Plan a Domain Name System (DNS) strategy.
Optimize and troubleshoot DNS.
Plan, optimize, and troubleshoot IPSec network access.
Troubleshoot network access.

Program Outcomes Satisfied: (reference Program Outcomes)

3.1 Apply and explain network protocols
3.3 Install and Administer network services
3.5 Protect and secure organizations' computer network
6.1 Identify needs, analyze tasks, and develop profiles of users

Student Evaluation Methods:

2-3 written exams (multiple choice, short answer)
6-8 hands-on labs with written assignments and/or follow up questions on exams
1 practical /lab exam

Information Technology Course Document

University of Cincinnati

Course Coordinator: John Nyland **Last Revised:** 5/18/2011

Course Title:

Network Security

Course Number:

20IT319

UC Bulletin Description:

This course covers the array of technologies and techniques to secure a computer network. Anticipation of network weaknesses then design the network infrastructure and policies to pre-empt potential attacks upon the network will be presented. Practical skills in router security, firewalls, virtual private networks (VPN), intrusion detection/prevention systems (IDS/IPS), and host-based security will be key components to the course. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

20IT317 Network Infrastructure Development
20IT207 Computer Programming III

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Northcutt, S., Inside Network Perimeter Security, SAMS Publishing
Instructor Supplied Material/Learning Objects (http://homepages.uc.edu/~stockmma/courses/)

Topics Covered:

Intro to Network Security (security vs. functionality, attacks, terminology)
Defense in Depth Ideology (perimeter, infrastructure, hosts, security policy)
Router Security (concepts, static vs. dynamic routing, security features, hardening)
Firewalls (packet filters, stateful, proxy, screened subnets)
IDS/IPS (anomaly detection with signatures, trend analysis, network placement, IDS management network)

VPN (host to gateway, gateway to gateway, host to host, tunneling, VPN vs. leased line)
Host Hardening (service management, log files, software updates, host-based tools)

Course Learning Outcomes/How Assessed:

Protect and secure organizations' computer network.
Understand and be able to apply defense in depth network security techniques.
Explain and implement firewall, IDS, and VPN solutions.
Apply appropriate problem solving skills in network and system administration.

Program Outcomes Satisfied: (reference Program Outcomes)

3.5 Protect and secure organizations' computer network.
9.1 Participate effectively as a team member
11.4 Apply appropriate problem solving skills in network and system administration.

Student Evaluation Methods:

2 written exams (essay and short answer).
6-8 hands-on labs with written assignments.
1 group project configuring a network security device.
1 topics in network security research project/presentation.

IT Course Document
Department of Information Technology
College of Engineering and Applied Science
University of Cincinnati

Course Coordinator: Annu Prabhakar **Last Revised:** Spring 2011

Course Title:
Client-side Web Development

Course Number:
20-IT-321

UC Bulletin Description:
Development of dynamic websites using current scripting languages for client-side development. Covers: use of scripting to validate form input, and enhancement of the user interface with interactive elements. Hands-on active learning required.

Pre-Requisite:
32-IT-220 Fundamentals of Web Development, Programming Ability

Co-Requisite: (Course Number + Name)
None.

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☒ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Required:
Learning JavaScript. by Shelley Powers O'Reilly Pub, ISBN: 978-0-596-52187-5
Dojo Visual Quickstart Guide Peachpit Press

References:
JavaScript and AJAX: Visual Quick Start Guide, Sixth Edition Tom Negrino, Dori Smith
ISBN: 0-321-43032-8. Peachpit Press.
CSS Cookbook 2nd Edition, Christopher Schmitt, O'Reilly Pub.
JavaScript: The Definitive Guide, Latest Edition By David Flanagan
JavaScript & DHTML Cookbook by Danny Goodman
JavaScript Application Cookbook by Jerry Bradenbaugh
DHTML and CSS for the World Wide Web, Latest Edition: Visual QuickStart Guide by Jason Cranford Teague

www.w3schools.com Web technology tutorials (JavaScript, DHTML, DOM) www.safari.org Safari Techbooks Online (institutional library subscription)

Topics Covered:

- Introduction to JavaScript and Client-side Scripting
  - Common uses
  - Limitations (Security Sandbox)
  - DOM vs Cross-platform Development Approaches
- General syntax and variables
- Including JavaScript in XHTML/HTML5 Documents
- Syntax:
  - document.write/ln(),
  - window.alert() .prompt(), & .confirm()
  - var
  - if … else
- Loose Variable Typing and Auto-promotion
- Syntax (Control Structures):
  - while
  - for
  - switch
  - do
  - try…catch
  - throw
- Parsing issues for interpretation and use of syntactic sugar shortcuts for optimization of interpreted code.
- Intrinsic Objects:
  - Date
  - Boolean
  - Math
  - string
- Global (intrinsic) Functions
- Arrays
- User-defined Functions
- OOP in JavaScript
  - initializers
  - new
  - Constructors
  - delete
  - Accessing Object Properties
  - Inheritance
  - prototype
  - Polymorphism

- Dynamic HTML
    - Collections
    - all
    - children
    - innerText
    - innerHTML
- Dynamic CSS Styles
- DOM Hierarchy:
    - window
    - location
    - frames
    - history
    - Navigator
- DOM Programming
- Timing Functions
- Event Model:
    - onload
    - onclick
    - onerror
    - onmousemove
    - event object
- Image Rollovers
- Preloading Images
- Form Handling Events:
    - onfocus
    - onblur
    - onreset
    - onsubmit
- Cookies
- Cookie Parameters
- Using Cookies in Application designs
- Overview of Prevalent JS Code Libraries
- Component-based Design for Re-usability: Application Engines
- AJAX
- XML DOM Programming with JavaScript
    - Using External XML data for JS Applications

Course Learning Outcomes/How Assessed:

1. **Know how to put JavaScript code blocks in the body and head of an XHTML document.**
   Assignments (1, 3) and labs (0, 1, 3).
2. **Know how to write a user-defined JS function and invoke it.**
   Assignments (1-4) and lab (2, 3).

3. **Dynamically write XHTML content via code.**
   Assignments (1,3,4) and labs (1,3).
4. **Use conditional branching logic (if ..else).**
   Assignment (1).
5. **Use some of the basic capabilities of the built-in (intrinsic) date and time objects.**
   Assignments (1).
6. **Use common string and Math functions.**
   Assignments (1, 2, 3) and labs (2,3).
7. **Link dynamic content to a CSS style sheet.**
   Assignments (2-4) and lab (3).
8. **Create a XHTML form for user input**
   Assignments (2)
9. **Understand how to use JavasScript Regular Expressions**
   Assignments (2) and Lab (2)
10. **Use JS Reg Ex to do form validation.**
    Assignments (2) and Lab (2)
11. **Create a JavaScript application with a modern DHTML GUI**
    Assignments (3, 4) and Lab (3)
12. **Understand how to use a Finite State Machine model for application design**
    Assignments (3)
13. **Use the JavaScript Timing functions.**
    Assignments (3)
14. **Create an application engine with JavaScript that promotes code reuse by using external XML data.**
    Assignment (4) and Lab (3)
15. **Create an external JavaScript Code library.**
    Assignments (2, 4) and Lab (2, 3)

Program Outcomes Satisfied: (reference Program Outcomes)

1.1 Develop fundamental programming skills
1.2 Program effectively within the student's specialty area
4.1 Design & implement a website using appropriate design guidelines
4.2 Understand and implement elements of effective online users' experience
5.2 Integrate digital media elements in presentations and other applications
8.1 Make effective oral presentations
8.2 Communicate effectively in written form
11.1 Web Development

Student Evaluation Methods:

Labs and assignments count for 80-90% of final grade. Remainder of grade is based on Quizzes. No mid-term or final typically. No curving of grades.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Vali Tadayon **Last Revised:** May 20, 2011

Course Title:

Digital Image Development

Course Number:

32 IT 330

UC Bulletin Description:

Focuses on the acquisition, creation and manipulation of graphical images (photographs, line art) using high level digital tools and techniques. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32 IT 230: Fundamentals of Digital Media

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 30

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☒ DM

Textbook(s)/Resources:

Readings and Resources from the Internet (See Attachments)

Topics Covered:

Visual literacy and perception, Visual design, Image production and management, sources of images, Image development, Tools for working with images: hardware and software, Images on the Web

Course Learning Outcomes/How Assessed:

Learners will develop an understanding of and demonstrate production competencies in digital image development by studying the following topics: Visual literacy and perception, Visual design, Image production and management, sources of images, Image development, Tools for working with images: hardware and software, Images on the Web: plan and produce digital audio projects that incorporate elements produced using various software programs and apply concepts, including documentation and presentation of projects

Projects include: 1. Research on Web resources for digital image development to contribute to a class-generated pool of resources. 2. Digital manipulation of images using basic functions of digital image editing software. 3. Digital manipulation of images using intermediate functions of digital image editing software. 4. Creation of original images using scanners, scanning software, and digital image editing software. 5. Creation of original images using digital cameras and digital image editing software. 6. Creation of a logo using digital image editing software. 7. Creating a storyboard for an final digital image production. 8. Using digital imaging software and PowerPoint to build a reasonably sophisticated final image production employing project planning and management methods.

Activities include: 1. Working in a group to define various digital image characteristics. 2. Determining equipment and software characteristics through an inventory of the imaging hardware and software in the Multimedia Lab. 3. Brainstorming final project topics and characteristics in work groups. 4. Presentation of projects in formal oral presentations.

Program Outcomes Satisfied: (reference Program Outcomes)

5.1 Understand the elements of capturing, editing and producing digital media (image, audio and video)
5.2 Integrate digital media elements in presentations and other applications
7.1 Understand, develop, and follow a project plan
9.4 Comprehend and apply project management principles
11 Apply appropriate problem solving skills in interactive media development

Student Evaluation Methods:

Lab projects, Activities/exercises, Written reports, Presentations

Information Technology Course Document

University of Cincinnati

Course Coordinator: Vali Tadayon **Last Revised:** May 20, 2011

Course Title:

Digital Audio Development

Course Number:

32 IT 332

UC Bulletin Description:

Focuses on the acquisition, creation and manipulation of audio information using high level digital tools and techniques. Deals with production processes, including management and use of audio materials. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32 IT 230: Fundamentals of Digital Media

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 30

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☒ DM

Textbook(s)/Resources:

Readings and Resources from the Internet (See Attachments)

Topics Covered:

Science of audio, digital audio, Sources of audio materials, Audio production: processes, Science of audio, digital audio, Sources of audio materials, Audio production: processes,
Audio design: production management (storyboards, scripting), Tools for working with audio: hardware (audio cards, microphones, storage), Tools for working with audio: software, Audio on the Web

Course Learning Outcomes/How Assessed:

Learners will develop an understanding of and demonstrate production competencies in digital audio by studying the following topics: Working as an Information Technology professional with digital audio media, Planning and development of audio productions, Production of audio materials, Design of audio materials, Integration of audio into digital media productions: tools

and techniques: plan and produce digital audio projects that incorporate elements produced using various software programs and apply concepts, including documentation and presentation of projects

Projects include: 1. Research on Web resources for digital audio development to contribute to a class-generated pool of resources. 2. Digital manipulation of audio using basic functions of digital audio editing software. 3. Digital manipulation of audio using intermediate functions of digital audio editing software. 4. Creation of original audio using microphones and digital audio editing software. 5. Creating a storyboard for a final digital audio production. 8. Using digital audio software to build a reasonably sophisticated final audio production employing project planning and management methods.

Activities include: 1. Working in a group to define various digital audio characteristics. 2. Determining equipment and software characteristics through an inventory of the audio hardware and software in the Multimedia Lab. 3. Brainstorming final project topics and characteristics in work groups. 4. Writing scripts and creating storyboards. 5. Presentation of projects in formal oral presentations.

Program Outcomes Satisfied: (reference Program Outcomes)

5.1	Understand the elements of capturing, editing and producing digital media (image, audio and video)
5.2	Integrate digital media elements in presentations and other applications
7.1	Understand, develop, and follow a project plan
9.4	Comprehend and apply project management principles
10.4	Recognize the need for continued learning throughout their career
11	Apply appropriate problem solving skills in interactive media (audio) development

Student Evaluation Methods:

Lab projects, Activities/exercises, Written reports, Presentations

Information Technology Course Document

University of Cincinnati

Course Coordinator: Vali Tadayon **Last Revised:** May 20, 2011

Course Title:

Digital Video Development

Course Number:

32 IT 333

UC Bulletin Description:

Focuses on the acquisition, creation and manipulation of video information using high level digital tools and techniques. Deals with production processes, including management and use of video materials. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32 IT 230: Fundamentals of Digital Media

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 30

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☒ DM

Textbook(s)/Resources:

Readings and Resources from the Internet (See Attachments)

Topics Covered:

Science of video, digital video, Sources of video materials, Video production: processes, Science of video, digital video, Sources of video materials, Video production: processes,
Video design: production management (storyboards, scripting), Tools for working with video: hardware (video cards, microphones, storage), Tools for working with video: software, Video on the Web

Course Learning Outcomes/How Assessed:

Learners will develop an understanding of and demonstrate production competencies in digital video by studying the following topics: Working as an Information Technology professional with digital video media, Planning and development of video productions, Production of video materials, Design of video materials, Integration of video into digital media productions: tools

and techniques: plan and produce digital video projects that incorporate elements produced using various software programs and apply concepts, including documentation and presentation of projects

Projects include: 1. Research on Web resources for digital video development to contribute to a class-generated pool of resources. 2. Digital manipulation of video using basic functions of digital video editing software. 3. Digital manipulation of video using intermediate functions of digital video editing software. 4. Creation of original video using digital cameras, microphones, lighting, monitors and digital video editing software. 5. Creating a storyboard for a final digital video production. 8. Using digital video software to build a reasonably sophisticated final video production employing project planning and management methods.

Activities include: 1. Working in a group to define various digital video characteristics. 2. Determining equipment and software characteristics through an inventory of the video hardware and software in the Multimedia Lab. 3. Brainstorming final project topics and characteristics in work groups. 4. Presentation of projects in formal oral presentations.

Program Outcomes Satisfied: (reference Program Outcomes)

5.1	Understand the elements of capturing, editing and producing digital media (image, audio and video)
7.1	Understand, develop, and follow a project plan
9.1	Participate effectively as a team member
9.4	Comprehend and apply project management principles
10.4	Recognize the need for continued learning throughout their career

Student Evaluation Methods:

Lab projects, Activities/exercises, Written reports, Presentations

Information Technology Course Document

University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:

Contemporary Programming I

Course Number:

32-IT-345

UC Bulletin Description:

This course deals with advanced programming techniques and design issues relating to enterprise-wide development. Topics include advanced object-oriented programming and techniques and application testing and deployment using current enterprise application development tools and development and design methodologies. The concentration will on presentation-tier development. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32-IT-207

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☒ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Beginning Visual C# 2010, Wiley Publishing (www.wrox.com),

Reference:
Introduction to C# Using .NET, Robert Oberg, Prentice Hall PTR, 0-13-041801-3
www.objectinnovations.com/dotnet.htm

Topics Covered:

C# and the Microsoft .NET Framework
Object-Oriented Programming with C#
Basic console applications
Basic Windows applications

Course Learning Outcomes:

Students will successfully develop both console and Windows applications using OOP principles.
Students will research and report on the current topics of program development.

Program Outcomes Satisfied: (reference Program Outcomes)

1.3 Apply a development life cycle to a problem
1.4 Design and develop a software prototype

Student Evaluation Methods:

Homework
Labs
Programming Projects
Tests

Information Technology Course Document

University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:

Contemporary Programming II

Course Number:

32-IT346

UC Bulletin Description:

This course deals with advanced programming techniques and design issues relating to enterprise-wide development. Topics include advanced object-oriented programming and techniques, database processing and database interfaces using current enterprise application development tools and development and design methodologies. The concentration will on middle-tier development. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32-IT-345

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☐ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☒ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Microsoft ADO.NET Core Reference, D. Scheppa, Microsoft Press, 0-7356-1423-7

Topics Covered:

Database connections
Retrieving and manipulating data from a database.
Advanced database processing

Course Learning Outcomes:

1. Students will successfully develop a database application that will retrieve data.
2. Students will successfully develop a database application that will manipulate data.
3. Students will research and report on program security issues involving database applications.

Program Outcomes Satisfied: (reference Program Outcomes)

1.5 Use multiple computer system platforms 2.5 Integrate a relational database into applications

Student Evaluation Methods:

Homework Programming Project Tests

Information Technology Course Document

University of Cincinnati

Course Coordinator: Mark Stockman **Last Revised:** 5/10/11

Course Title:

Computer Forensics

Course Number:

32IT361

UC Bulletin Description:

Course Description: This course introduces the learner to the concepts and techniques of computer forensics. Topics include detecting incident occurrence, data hiding through alternate data streams and steganography, incident preparation, incident response tools, scanners and sniffers, and developing a forensics methodology.

Pre-Requisite: (Course Number + Name)

32IT315 System Administration I

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Guide to Computer Forensics and Investigations, Second Edition, Course Technology
File System Forensic Analysis, Carrier, Addison-Wesley

Topics Covered:

Prepare for computer investigations
Maintain professional conduct
Conduct an investigation
Evaluate the requirements and expectations for computer forensics tools

Course Learning Outcomes:

Understand data hiding, corruption and computer forensics
Understand enforcement agency investigations
Understand corporate investigations
Understand computer forensics workstations and software

Understand how to identify needs for computer forensics tools
Understand how computer forensics hardware and software tools integrate
Understand the need for an organization to prepare an incident response plan by doing so

Program Outcomes Satisfied: (reference Program Outcomes)

1.5 Use multiple computer system platforms
8.2 Communicate effectively in written form
10.1 Practice ethical and professional behaviors
10.2 Explain the rationale for security practices

Student Evaluation Methods:

2-3 written exams
6-8 hands-on labs with written assignments and/or follow up questions on exams

Information Technology Course Document

University of Cincinnati

Course Coordinator: Mark Stockman **Last Revised:** May 2011

Course Title:

Enterprise Network Administration

Course Number:

32IT411

UC Bulletin Description:

Techniques for successfully implementing and supporting network services on an enterprise scale will be covered in this course. Through hands-on job simulations and case studies, students will obtain the knowledge to perform network management on a large magnitude. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32IT316 System Administration II
32IT488 Routing & Switching

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Online technical resources.
Instructor Supplied Material/Learning Objects (http://homepages.uc.edu/~stockmma/courses/)

Topics Covered:

Enterprise Networking Overview (definition, service lifecycle, enterprise project team, directory services overview, scripting)
Automated System Setup (system imaging, unattended install, considerations, technologies)
Virtualization (development, server replacement, advantages, technologies)
Remoting/Terminal Services (remote administration, application servers, planning, technologies)
Email Services (protocols, information stores, multi-tiered systems, technologies)
Clustering/Grid Computing (definition, common clustered services, scalability, technologies)
Telephony (PBX, VoIP, advantages and pitfalls)

Configuration Management (enterprise system configuration, health monitoring/management, vulnerability scanning, technologies)

Course Learning Outcomes:

Install and administer network services.
Obtain the ability to manage and troubleshoot a network running multiple services.
Understand the requirements of an enterprise network and how to go about managing them.
Ability to individually research technologies and succinctly report findings.
Apply appropriate problem solving skills in network and system administration.

Program Outcomes Satisfied: (reference Program Outcomes)

3.3 Install and administer network services.
11.4 Apply appropriate problem solving skills in network and system administration.

Student Evaluation Methods:

2 written exams (essay and short answer).
Quarter long group project designing and implementing a diverse network of systems and services working together.
Weekly research of discussion topic and summary of findings.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Mark Stockman **Last Revised:** 5/10/11

Course Title:

Systems Integration

Course Number:

32IT415

UC Bulletin Description:

Hands-on study of computer networks comprised of heterogeneous operating systems and their applications. The course will focus on back-end network management and administration to enable seamless dataflow between differing computer systems. Students will follow established guidelines and best-practice techniques to create typical networks of varying operating systems and services which communicate efficiently. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32IT316 System Administration II

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

http://www.samba.org (plus man pages and documentation with SAMBA)
http://www.openldap.org (plus man pages and documentation with Open-LDAP)
Instructor Supplied Material/Learning Objects (http://homepages.uc.edu/~stockmma/courses/)

Topics Covered:

Linux Review (services, command line interface, configuration)
Samba (Linux file sharing) Basics (installation, file share setup, auditing activity)
Samba Users/Permissions (network users, local vs. share permissions, client access)
Samba Printing (print server setup, automated client driver download/install)
Samba Domain Controller (using Samba as a Domain Controller for Windows clients, logon scripts, roaming profiles, shared user home folders)
Samba Member Server (Linux as a domain member server in a Samba or Windows domain, backup domain controller)
Domain Services Review (directory tree, schema, objects, naming)

Open-LDAP (configuration, management with LDIF and GUI tools, Samba integration, replication)

Course Learning Outcomes/How Assessed:

Implementation of advanced open-source services setup/management
Develop a high degree of confidence administering non-GUI systems
Understand the hurdles involved in integrating diverse systems and obtain strategies for integration
Protect and secure users' information on a computer network
Apply appropriate problem solving skills in network and system administration

Program Outcomes Satisfied: (reference Program Outcomes)

3.3 Install and Administer network services
3.4 Protect and secure users' information on a computer network
11.4 Apply appropriate problem solving skills in network and system administration

Student Evaluation Methods:

4 hands-on labs (checked for functionality)
1 group project setting up an open-source service for Windows clients not discussed specifically in class, cultivating with a class presentation and demonstration
2 essay/short answer exams

IT Course Document
Department of Information Technology
College of Engineering and Applied Science
University of Cincinnati

Course Coordinator: Annu Prabhakar **Last Revised:** May 2011

Course Title:
Web Server Application Development

Course Number:
IT420

UC Bulletin Description:
Current: Covers the development of advanced Websites and Web-based applications. Includes database backends, Web services, Advanced XML, Web security etc. This course focuses on using commercial technologies. Hands-on active learning required.

Revised: :(Pending College/University Approval) This course covers development of dynamic web site using ASP.NET web application framework. It includes the following topics: Input validation, Master Pages, Site navigation, Database backend, Membership and roles, Web services, Website deployment and Web parts. Hands-on Active learning is required.

Pre-Requisite: (Course Number + Name)
IT207- Computer Programming II
IT220-Fundamentals of Web Development

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☒ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Microsoft ASP.NET 4.0 Step by Step by George Shepherd

Topics Covered:
Request/ Response (Client/ Server) model
IIS basics
Server controls for web site GUI

Validation controls for input validation
Membership and roles
Login controls
Master pages for consistent layout
Post back
Database connectivity from a web application: update, delete, insert data
AJAX
XML, reading and writing
Web Parts
Web services
Page, session, application, server, request and response objects
Deploying/ copying of new web site to an IIS server

Content Management Systems (CMS) – identifying strengths/weaknesses, choosing the right CMS for you and your client

Course Learning Outcomes/How Assessed:

Server controls and validation, submitting forms/event handling
Develop Small website using a Master Page and Menu Control
Create, read, update delete (CRUD) development
User management, login controls
Choosing the right CMS
Reading/writing XML
Developing Web Parts, identifying strengths/weaknesses
Developing your own ASP 3.5 Web Service

Program Outcomes Satisfied: (reference Program Outcomes)

1.2 Program effectively within the student's specialty area
2.6 Integrate relational database into applications
11.1 Apply Appropriate Problem Solving Skills in Web Development

Student Evaluation Methods:

Tests (hands-on)
Lab/Assignments
Final project

Information Technology Course Document
University of Cincinnati

Course Coordinator: Hazem Said **Last Revised:** 5/17/11

Course Title:
Enterprise Web Development

Course Number:
32IT421

UC Bulletin Description:
Covers the development of advanced Websites and Web-based applications using disparate technologies for distributed solutions. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☐ Required **Course Type:** Core X☐ Track

Course Area: ☐ IT-Gen SD X Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
- Textbook
- The Java EE 6 Tutorials available online at: *http://java.sun.com/javaee/6/docs/tutorial/doc/*
- Class Notes
- Software: Netbeans IDE 6.7

Topics Covered:

Understand Java Servlets	Chapters 1,2,3,4
Understand HTML Request and Response	Chapters 5, 6, and 7
Cookies and Session tracking	Chapters 8, 9
Understand Jave Server Pages	Chapters 10, 11, 12, 13, 16
Using Java Beans	Chapter 14
JDBC	Chapter 17
MVC architecture	Chapter 15

Course Learning Outcomes/How Assessed:
1. Understand Object Oriented Programming for Web development (project 1)

2. Understand the life cycle of Java Servlets (project 2)
3. Understand and implement Model-View-Controller architecture (project 3, mid-term project and final project)
4. Implement a three-tier system using components of J2EE (mid-term project & final project)

Program Outcomes Satisfied: (reference Program Outcomes)

11. Apply Appropriate Problem Solving Skills in:
11.1 Web Development
4. Design and Implement internet-based applications
4.1 Design & implement a website using appropriate design
8. Communicate Effectively
8.1 Make effective oral presentations

Student Evaluation Methods:

Exams and Projects

Information Technology Course Document

University of Cincinnati

Course Coordinator: Vali Tadayon **Last Revised:** 5/20/2011

Course Title:

Human Computer Interaction

Course Number:

32IT430

UC Bulletin Description:

Concerned with the design of interfaces that facilitate the use of computers and other personal electronic devices such as handheld devices. Theory and practice of usability is emphasized.

Pre-Requisite: (Course Number + Name)

32IT211- Intro to Operating Systems, 32IT220- Fundamentals of Web Development, 32IT230- Fundamentals of Digital Media, 32IT275- Introduction to Networking, & 32IT209 - Intro to Database

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 30

Lab Component: ☒ Required **Course Type:** ✓ Core ☐ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

- Human Performance Engineering, Designing High Quality Professional User Interfaces for Computer Products, Applications and Systems by Robert W. Bailey
- Paper Prototyping, the Fast and Easy Way to Design and Refine User Interfaces by Carolyn Snyder

Topics Covered:

Performance Standards
Human Limits and Differences
Sensing and Responding
Cognitive Processing and Performance
Motivation
Interactive Design and Prototyping
Usability Studies and Usability Testing
Task Analysis

Course Learning Outcomes/How Assessed:

- **Apply a development life cycle to a problem**
- **Design and Develop a Software Prototype**
- **Identify needs, analyze tasks, and develop profiles of users**
- **Develop and evaluate effective user interaction designs**
- **Practice user-centered design development and deployment**
- **Evaluate usability of an application**
- **Communicate effectively- information architecture, navigation, interaction, graphically and with media**

Program Outcomes Satisfied: (reference Program Outcomes)

1.3 Apply a development life cycle to a problem
1.4 Design and Develop a Software Prototype
6.2 Develop and evaluate effective user interaction designs
6.4 Evaluate usability of an application
8.4 Communicate effectively- information architecture, navigation, interaction, graphically and with media

Student Evaluation Methods:

- 6 Assignments to be completed and turned in individually
- 1 group project as a take-home exam. This project involves identifying who the users are, defining what the system does, and what tasks users perform, defining usability goals and designing the system. The design process should involve several iterations of design and evaluation. The results of these evaluations should suggest changes to improve the system.

Department of Information Technology
College of Engineering and Applied Science (CEAS)
University of Cincinnati

Course Coordinator: Annu Prabhakar **Last Revised:** May 5, 2011

Course Title:

Management in Information Technology

Course Number:

20 IT 455

UC Bulletin Description:

General management techniques and specific issues and tools for project management in information technology.

Pre-Requisite: (Course Number + Name)

Senior Standing, Permission of Department

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 30

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Schwalbe, Kathy. Information Technology Project Management. (ISBN: 978-0-324-78692-7). Course Technology. Cengage learning. Boston, Massachusettes. 2010.

Topics Covered:

Management theories and practices, The Learning Organization, Organizational culture, Leadership and management, Communication and management, Project management, The Information Technology professional and organizational context (mass media, education and training, security and privacy, entrepreneurship and e-commerce), Globalization

Course Learning Outcomes/How Assessed:

Learners should understand the theory behind the practice of management.

Learners should understand the practice of management in a professional environment. Learners should understand the types of areas in which information technology plays a significant role.

Learners should demonstrate their grasp of the application of theories and practice of management through presentation of findings from their research on a specific area of concentration in which information technology plays a substantial role.

Learners should demonstrate professional attitudes and practices as participants in class.

Learners should demonstrate an ability to communicate on several levels: 1) rhetorically, as presenters within the atmosphere of a seminar in which there is an intensive exchange of information and ideas; 2) interpersonally, as colleagues who are analyzing and assessing information and ideas presented by others, 3) interpersonally, as learners interacting with professional practitioners of information technology, and 4) in writing, as learners communicating their research-based analysis and evaluation of information and ideas.

Program Outcomes Satisfied: (reference Program Outcomes)

8.1 Make effective oral presentations
8.2 Communicate effectively in written form
9.1 Participate effectively as a team member
9.3 Have the ability to be a change agent within an organization
10.4 Recognize the need for continued learning throughout their career

Student Evaluation Methods:

Group projects, written reports and essays, oral presentations, quizzes

Information Technology Course Document
University of Cincinnati

Course Coordinator: Mark Stockman **Last Revised:** 5/10/11

Course Title:
Special Topics in Networking

Course Number:
32-IT-461

UC Bulletin Description:
The course addresses technical advances in the area of Networking that are not covered by other courses in the curriculum. Topics may change from one offering to the other depending on the current technological advances. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)
9 Hours of Secondary Track Completed, 18 Hours of Primary Track Completed, Senior Standing, Permission of Departmentha

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Varies each time course is offered by topics addressed.

Topics Covered:
This course varies each time it is taught and students may take it repeatedly for credit. Indeed, it is designed to be a vehicle for including emerging topics from the field of Networking/System Administration that are not part of the existing curriculum.

Most recent topics: Computer Forensics (2006,2007), Storage Technologies (2008, 2009, 2010), Network Modeling (2011)

Course Learning Outcomes/How Assessed:

Specific outcomes vary each time based on the topics covered.

Program Outcomes Satisfied: (reference Program Outcomes)

Varies each time.

Student Evaluation Methods:

Varies each time.

Information Technology Course Document
University of Cincinnati

Course Coordinator: Tom Wulf **Last Revised:** Spring 2011

Course Title:
Special Topics in Software Development

Course Number:
32-IT-463

UC Bulletin Description:
The course addresses technical advances in the area of Software Development that are not covered by other courses in the curriculum. Topics may change from one offering to the other depending on the current technological advances. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)
9 Hours of Secondary Track Completed, 18 Hours of Primary Track Completed, Senior Standing, or Permission of Department

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:
Varies each time course is offered by topics addressed.

Quarters Offered: (indicate sections per quarter)

	Autumn	**Winter**	**Spring**	**Summer**
Day				
Evening			**1**	

Faculty Who Teach Course: (indicate full-time or part-time)

Name	**FT/PT**
Brandan Jones	PT
Tom Wulf	FT

Topics Covered:

This course varies each time it is taught and students may take it repeatedly for credit. Indeed, it is designed to be a vehicle for including emerging topics from the field of Software Development that are not part of the existing curriculum.

Course Learning Outcomes/How Assessed:

Specific outcomes vary each time based on the topics covered.

Program Outcomes Satisfied: (reference Program Outcomes)

Varies each time.

Student Evaluation Methods:

Varies each time.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Tom Wulf **Last Revised:** Autumn 2011

Course Title:

Programming for Mobile Devices

Course Number:

32-IT-475

UC Bulletin Description:

Developing and deploying software applications for consumer mobile devices and a survey of available technologies. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32-IT-207 Computer Programming III

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 3

Lab Component: □ Required **Course Type:** □ Core √ Track

Course Area: □ IT-Gen √ SD □ Web □ Net □ DB □ DM

Textbook(s)/Resources:

Beginning Blackberry Development by Anthony Rizk APress 2009
Various Web-based resources on JME, BlackBerry, and Android Development

Quarters Offered: (indicate sections per quarter)

	Autumn	**Winter**	**Spring**	**Summer**
Day	√			
Evening	√			

Faculty Who Teach Course: (indicate full-time or part-time)

Name	**FT/PT**
Brandan Jones	PT

Topics Covered:

Mobile App Architecture for BlackBerry and Android with JME

Separation of Device specific UI code from the General Code
GPS enabled apps, Image Manipulation, Camera, accelerometer
Scalability memory and resource usage, database connected mobile apps

Course Learning Outcomes/How Assessed:

Programming Assignments
Weekly Quizzes
Project

Program Outcomes Satisfied: (reference Program Outcomes)

1.1 Develop fundamental programming skills
1.4 Design and develop a software prototype
2.5 Integrate a relational database into applications
4.1 Design and implement a website using appropriate design
11.3 Apply appropriate problem solving skills in software development

Information Technology Course Document

University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:

Database Design

Course Number:

32-IT-477

UC Bulletin Description:

Design principles for both operational database systems and data warehouses, including normalization theory, ER diagramming theory and tools, data storage. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

32-IT-309 Database Management

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☐ Core √ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☐ Net √ DB ☐ DM

Textbook(s)/Resources:

Pro SQL Server 2008 Database Design and Optimization by Louis Davidson, Apress Publishing, 2008

Quarters Offered: (indicate sections per quarter)

	Autumn	**Winter**	**Spring**	**Summer**
Day				
Evening		√	√	

Faculty Who Teach Course: (indicate full-time or part-time)

Name	**FT/PT**
Russ McMahon	FT
Ron Meade	PT

Topics Covered:

Using a database diagramming tool

Data modeling using IDEF1X
Conceptual and logical database design
Normalization
Implementing a database design
Protecting data integrity
Securing access to data
Coding for concurrency

Course Learning Outcomes/How Assessed:

Knowledge of 1NF, 2NF, 3NF, 4NF and BCNF/Projects, quizzes
Ability to use a database diagramming tool and IDEF1X symbols/Projects, quizes
Creating tables and constraints using SQL DDL/Projects
Using data encryption/Project, quiz
Knowledge of concurrency issues and how to prevent concurrency problems/Project, quiz

Program Outcomes Satisfied:

2.1 Design a relational database
2.2 Implement a relational database
2.4 Secure database management systems
11.5 Apply appropriate problem solving skills in database design, administration and integration

Student Evaluation Methods:

Projects
Tests

Information Technology Course Document

University of Cincinnati

Course Coordinator: Russ McMahon **Last Revised:** May 10, 2011

Course Title:

Database Administration

Course Number:

32-IT-480

UC Bulletin Description:

Installing and configuring database servers, database security, managing database files, disaster recovery plans, replication, monitoring and optimization. Hands-on active learning required

Pre-Requisite: (Course Number + Name)

32-IT309 Database Management

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☐ Net ☒ DB ☐ DM

Textbook(s)/Resources:

Microsoft SQL Server 2008 R2 Unleashed, Rankins, Berdtucci, Gallelli, & Silverstein, Publisher: Sams, 2010

Reference:
Database Administration: The Complete Guide to Practices and Procedures
Craig S. Mullins; Addison-Wesley; 0-201-47129-6

Topics Covered:

System Design
System Performance and Tuning
Security
Administrative Planning
DBA Tools

Course Learning Outcomes:

1. Students will identify and discuss the major tasks of a database administrator.
2. Students will identify the different areas of database performance and how to fix the associated problems.
3. Students will research and present on a current database topic.

Program Outcomes Satisfied: (reference Program Outcomes)

2.4 Secure database management systems

Student Evaluation Methods:

Project
Tests

Information Technology Course Document

University of Cincinnati

Course Coordinator: John Nyland **Last Revised:** 5/18/2011

Course Title:

Routing and Switching

Course Number:

20IT488

UC Bulletin Description:

Students construct network segments and learn to link the segments together with routers and switches. Once networks are connected, issues such as network interoperability, real-time network analysis, and Quality of Service (QoS) will be addressed. Further, students will learn topics of router programming and will build applications for the router. Hands-on active learning required.

Pre-Requisite: (Course Number + Name)

20IT317 Network Infrastructure Development

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 4

Lab Component: ☒ Required **Course Type:** ☐ Core ☒ Track

Course Area: ☐ IT-Gen ☐ SD ☐ Web ☒ Net ☐ DB ☐ DM

Textbook(s)/Resources:

Building Cisco Multilayer Switched Networks; Cisco 2007
Routing TCP/IP, Volume 1, Second Edition, Doyle, J.; Cisco 2005
This course uses a variety of software and hardware devices to assist the students in the mastery of the material including: Cisco Packet Tracer, OPNET Network Modeling Software and Cisco routers and switches.

Topics Covered:

Addressing and name resolution review (layer 2 and layer 3: ARP, DNS)
Layer 2, 3, 4 and 7 switching. How bridging protocol and STA work. The use of switches in LAN design. Introduction to VLANS
Routers - their purpose, what they do and do not forward and how they make these decisions. How hosts on a LAN connect to other LANs using routers.

Routing protocols - (RIP, RIP v2, IGRP, PPP, OSPF) their purpose and how they communicate information about the state of the WAN.
Routing tables - how they affect LAN and WAN operation, when they are not important, how one can control them and the behavior of routers and hosts through these tables.
Access Control List

Course Learning Outcomes:

Use routers and switches and understand placement and configuration of each.
Develop a level of competency with the command line interface for these devices.
Understand planning, design and implementation for router and switch placement and protocol choices in an enterprise.

Program Outcomes Satisfied: (reference Program Outcomes)

3.1 Apply and explain network protocols
3.2 Implement a variety of network configurations
3.3 Install and Administer network services

Student Evaluation Methods:

2-3 written exams (multiple choice, short answer)
6-8 hands-on labs with written assignments and/or follow up questions on exams
1 practical /lab exam

Information Technology Course Document
University of Cincinnati

Course Coordinator: Hazem Said **Last Revised:** Fall 2010

Course Title:
Senior Design

Course Number:
32IT490

UC Bulletin Description:
The process of research, analysis and defending a senior design project, which is a capstone experience for seniors that involves their doing independent work on a project from conception to design to implementation, with guidance from a faculty advisor.

Pre-Requisite: (Course Number + Name)

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:
None

Topics Covered:
This is the first of five courses that focus on a capstone experience for seniors. This experience requires independent work on an information technology project. The first quarter involves research, problem solving and decision making analysis with respect to the feasibility of potential projects. Students develop a project plan for their potential project. Students are required to interact with program faculty during this planning and analysis phase.

Course Learning Outcomes:
Weekly documentation, communication, research, and analysis with the instructor and/or program faculty that culminates in the selection of a potential Senior Design project.
Develop a project plan for the potential project.
Satisfactory oral presentation of the potential project.

Satisfactory written proposal of the potential project.

Program Outcomes Satisfied: (reference Program Outcomes)

7.1 Understand, develop, and follow a project plan **7.2 Develop Gantt and PERT charts and critical path analysis** **8.1 Make effective oral presentations** **8.2 Communicate effectively in written form**

Student Evaluation Methods:

Senior Design Faculty Evaluation of the proposed project presentation Instructor evaluation of the written proposal Progress reports to document research, planning and analysis

Information Technology Course Document

University of Cincinnati

Course Coordinator: Hazem Said **Last Revised:** Winter 2011

Course Title:

Senior Design Technical Practicum I

Course Number:

32IT493

UC Bulletin Description:

Development of the final senior project in Information Technology that started in IT490. Independent development, testing, deployment and evaluation of the final project under the supervision of a faculty member.

Pre-Requisite: (Course Number + Name)

32IT490

Co-Requisite: (Course Number + Name)

32IT496

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

None

Topics Covered:

This is the technical supervisory component of the Senior Design capstone experience in Information Technology. In this quarter students will communicate with and report to their instructor the progress towards the successful completion of the prototype.

Course Learning Outcomes:

Weekly communication with the instructor that culminates in the successful completion of a final design freeze report and a final presentation.
Completion of a list of project deliverables.

Successful demonstration of a working prototype.

Program Outcomes Satisfied: (reference Program Outcomes)

6.4 Evaluate the usability of an application
8.3 Communicate effectively with peers, supervisors and clients.
9.2 Be able to work effectively with end users
And one or two of the following:
11.1 Apply appropriate problem solving skills in Web Development
11.2 Apply appropriate problem solving skills in Interactive Multimedia Development
11.3 Apply appropriate problem solving skills in Software Development
11.4 Apply appropriate problem solving skills in Network and System Administration
11.5 Apply appropriate problem solving skills in Database design, administration and integration.

Student Evaluation Methods:

Senior Design Faculty Evaluation of the Prototype presentation
Instructor evaluation of the Design Freeze Report
Instructor evaluation of the list of project deliverables.
Successful demonstration of the working prototype.
Documentation of attendance and participation in weekly meetings with instructor.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Hazem Said **Last Revised:** Spring 2011

Course Title:

Senior Design Technical Practicum II

Course Number:

32IT494

UC Bulletin Description:

Development of the final senior project in Information Technology that started in IT490. Independent development, testing, deployment and evaluation of the final project under the supervision of a faculty member.

Pre-Requisite: (Course Number + Name)

32IT493, 32IT496

Co-Requisite: (Course Number + Name)

32IT497

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

None

Quarters Offered: (indicate sections per quarter)

Topics Covered:

This is the technical supervisory component of the Senior Design capstone experience in Information Technology. In this quarter students will communicate with and report to their instructor the progress towards the successful completion of the Senior Design project.

Course Learning Outcomes:

Weekly communication with the instructor that culminates in the successful completion of a final Senior Design report and in the successful completion of a final Senior Desing presentation.
Satisfactory demonstration that all project deliverables have been met.
Successful participation in Tech Expo.
Successful demonstration of the final Senior Design project.

Program Outcomes Satisfied: (reference Program Outcomes)

6.4 Evaluate the usability of an application.
8.3 Communicate effectively with peers, supervisors and clients.
9.2 Be able to work effectively with end users.
And one or two of the following:
11.1 Apply appropriate problem solving skills in Web Development
11.2 Apply appropriate problem solving skills in Interactive Multimedia Development
11.3 Apply appropriate problem solving skills in Software Development
11.4 Apply appropriate problem solving skills in Network and System Administration
11.5 Apply appropriate problem solving skills in Database design, administration and integration.

Student Evaluation Methods:

Senior Design Faculty Evaluation of the final Senior Design project presentation
Instructor evaluation of the final Senior Design Project Report
Instructor evaluation of the successful completion of the list of project deliverables.
Successful participation and successful review by Tech Expo Judges
Successful demonstration of the final project.
Documentation of the attendance and participation at the weekly meetings with the instructor.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Hazem Said **Last Revised:** Winter 2011

Course Title:

Senior Design Project Management I

Course Number:

32IT496

UC Bulletin Description:

The life cycle of developing a project prototype. Students perform independent research and document and present the prototype for their senior design project.

Pre-Requisite: (Course Number + Name)

32IT490 Senior Design

Co-Requisite: (Course Number + Name)

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

None

Topics Covered:

This course focuses on the knowledge and skills required to complete the second phase of the capstone senior experience—the product prototype. The purpose of this phase is to analyze the problem domain, design the solution and implement core functionalities in a prototype that demonstrate and prove the design concept. Four topics covered are 1.) analysis and design; 2.) project management; 3.) unit testing; and 4.) communications.

Course Learning Outcomes:

Weekly documentation, communication, research, analysis and design with the instructor and/or technical advisor that culminates in a list of project deliverables and a functional prototype.
Continue to understand, develop, manage and modify the project plan.
Satisfactory oral presentation of the functionality of the project prototype.

Satisfactory written proposal of the functionality of the project prototype.

Program Outcomes Satisfied: (reference Program Outcomes)

7.1 Understand, develop, and follow a project plan
7.2 Develop Gantt and PERT charts and critical path analysis
8.1 Make effective oral presentations
8.2 Communicate effectively in written form
9.4 Comprehend and apply project management principles

Student Evaluation Methods:

The project prototype presentation.
The written project prototype design freeze report.
Solution description, design protocols and a list of deliverables.
An updated project timeline and project budget.
testing plan.

Information Technology Course Document

University of Cincinnati

Course Coordinator: Hazem Said **Last Revised:** Spring 2011

Course Title:

Senior Design Project Management II

Course Number:

32IT497

UC Bulletin Description:

A continuation of Senior Design Project Management I (32IT496) in which students will research and discuss issues related to project deployment, testing, client training, and gathering feedback from the client. Students will document and defend their senior design project in a public forum.

Pre-Requisite: (Course Number + Name)

32IT496 Senior Design Project Management I, 32IT493 Senior Design Technical Practicum I

Co-Requisite: (Course Number + Name)

32IT494 Senior Design Technical Practicum II

Credit Hours: 3 **Contact Hours:** 3

Lab Component: ☐ Required **Course Type:** ☒ Core ☐ Track

Course Area: ☒ IT-Gen ☐ SD ☐ Web ☐ Net ☐ DB ☐ DM

Textbook(s)/Resources:

None

Topics Covered:

This course focuses on the knowledge and skills required to complete the final phase of the capstone senior experience—project management implementation. Four topics covered are 1.) quality issues; 2.) testing and documentation; 3.) deployment issues; and 4.) communication issues.

Course Learning Outcomes:

Understand project management implementation issues.
Continue to understand, develop, manage and modify the project plan.
Satisfactory oral presentation of the completed senior design project.
Satisfactory written senior design report for the completed project.
Satisfactory demonstration of the completed project at Tech Expo.

Program Outcomes Satisfied: (reference Program Outcomes)

7.1 Understand, develop, and follow a project plan
7.2 Develop Gantt and PERT charts and critical path analysis
8.1 Make effective oral presentations
8.2 Communicate effectively in written form
9.4 Comprehend and apply project management principles

Student Evaluation Methods:

Senior design faculty evaluation of the completed project presentation.
Instructor evaluation of the written senior design report for the completed project.
IT industry judging of the student demonstration of the completed senior design project at Tech Expo.

Information Technology Course Document

University of Cincinnati

Course Title:

Effective Public Speaking

Course Number:

15COMM171

UC Bulletin Description:

Principles of and practice in composition and presentation of speeches.

Pre-Requisite: (Course Number + Name)

None

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

Rudolph and Kathleen Verderber & Deanna D. Sellnow, The Challenge of Effective Speaking, 14th edition.

Topics Covered:

This course is designed to prepare you for today's world in terms of speaking effectively and professionally. It is designed to provide you with the fundamental understanding of the planning, organizing and different delivery techniques that produce effective speaking skills.

Course Learning Outcomes:

Build confidence in public speaking
Learn how to organize a speech
Create original content and relay this message to others
Deliver a with a comfortable, extemporaneous style

Student Evaluation Methods:

Speeches, Quizzes, Participation, Exams

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

English Composition I

Course Number:

15ENGL101

UC Bulletin Description:

A composition course emphasizing critical reading, writing, and analysis of texts. Students are introduced to research methods. Students must attain a C- or better before moving to the next course in the first year composition sequence, 15ENGL10

Pre-Requisite: (Course Number + Name)

None

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

Hammond, Alli, Joyce Malek, and Hannah Rule. Student Guide to English Composition 101 and 102, 2010–2011. Plymouth, MI: Hayden- McNeil, 2011.

Ramage, John D., John C. Bean, and June John- son. The Allyn & Bacon Guide to Writing. New York: Pearson-Longman, 2009.

Topics Covered:

Course Learning Outcomes:

- To improve your critical thinking abilities and, thus, your ability to develop complex yet clearly stated written arguments and analyses.
- To introduce you to and create opportunities to apply rhetorical strategies.
- To encourage you to reflect on your writing processes and to recognize those patterns and habits that have or have not served you well.
- To provide you with the opportunity to engage with and analyze contemporary issues.

- To make you aware of audience and to enhance your skill in choosing appropriate writing strategies for particular audiences.
- To help you become a more discerning and critical reader of your own and others' texts.
- To extend your mastery of effective writing processes, especially analytical writing.
- To increase your editing and proofreading skills.

Student Evaluation Methods:

final writing portfolio, in-class work, informal writing responses, and participation and attendance

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

English Composition II

Course Number:

15ENGL102

UC Bulletin Description:

A composition course emphasizing critical reading, writing, and analysis of texts with particular attention to research methods and writing. Students must attain a C- or better to pass the course. Completes the second course in the first- year composition sequence.

Pre-Requisite: (Course Number + Name)

15ENGL101 English Composition I

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

Hammond, Alli, Joyce Malek, and Hannah Rule. Student Guide to English Composition 101 and 102, 2010–2011. Plymouth, MI: Hayden- McNeil, 2011.

Ramage, John D., John C. Bean, and June Johnson. The Allyn & Bacon Guide to Writing. New York: Pearson-Longman, 2009.

Topics Covered:

Course Learning Outcomes:

- To continue the work of English 101, focusing on argumentation and persuasive strategies, critical reading and thinking, and writing from sources.
- To build on what you have learned about the composing process, rhetorical context, and specific strategies for invention and revision.
- To teach you how to develop an appropriate research project, discover and read sources, and write convincingly and persuasively on that subject.
- To encourage you to read and write more critically and carefully now and throughout college and your career.
- To teach you more sophisticated research processes.

Student Evaluation Methods:

final writing portfolio, in-class work, informal writing responses, and participation and attendance

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

Intermediate Composition

Course Number:

15ENGL289

UC Bulletin Description:

Using specific themes drawn from broad disciplinary fields, this course builds upon and enhances the writing and reading skills developed in English Composition. The General Education course emphasizes critical reading and writing, more advanced research and argumentative skills, and rhetorical understanding of discourse as it is used in different disciplines and discourse communities. Students must have earned 45 credit hours to register for the course.

Pre-Requisite: (Course Number + Name)

15ENGL102 English Composition II

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

Topics Covered:

Course Learning Outcomes:

Building on skills developed in English Composition 101 and 102, students successfully completing English 289 should be able to do the following:
Demonstrate refined rhetorical awareness, including the ability to analyze, compare, and evaluate how rhetorical strategies function within various discourse communities, and to work with a variety of genres to understand how meaning is made, communicated, and debated in various contexts;
Demonstrate critical reading, writing, and thinking skills, including the ability to identify and distinguish among kinds of evidence used in discourse communities, to locate, evaluate, and

integrate sources appropriate to research inquiry, and to produce clear, organized texts appropriate to situation, purpose, and audience;
Engage thoughtfully in the writing process, including the ability to write and revise drafts and integrate feedback into their own writing, as well as critique others' texts, to use flexible strategies for generating, revising, editing, and proofreading, and to understand the collaborative and social dimensions of the writing process;
Demonstrate knowledge of conventions across varying contexts, including the ability to use conventions of format, organization, and language, to use appropriate documentation and citation guidelines and styles, and to demonstrate that different genres may require distinct forms of citation, for- matting, and documentation.

Student Evaluation Methods:

final writing portfolio, in-class work, informal writing responses, and participation and attendance

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

Writing for Business

Course Number:

15ENGL491

UC Bulletin Description:

Practice in solving actual communication cases in common business situations requiring written communications.

Pre-Requisite: (Course Number + Name)

15ENGL102 English Composition II

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

Marie Flatley, Kathryn Rentz, and Paula Lentz, *Business Communication*, 2nd ed. (McGraw-Hill/Irwin 2012).

Topics Covered:

Business communication as problem solving.

The business-communication environment; adapting your message to your purpose and audience; the writing process; readable formatting.

Writing good-news and neutral messages

The art of revising; writing persuasive messages.

Review common types of reports; share research results.

Discuss negative messages.

Course Learning Outcomes:

The central aim of the course is to help you make good decisions when solving on-the-job writing problems. You will learn to analyze different writing situations, adapt typical patterns of organization to those situations, generate/find thorough and effective content, structure your content logically and strategically, make good document-design decisions, and write with an appropriate style and tone for your intended readers.

Student Evaluation Methods:

Writing ssignments (in and out of class), Quizzes, Participation, Peer Feedback

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

Technical Writing

Course Number:

15ENGL492

UC Bulletin Description:

An introduction to the theory and practice of writing in technical and scientific disciplines. It is not intended as a review of basic composition skills or as a basic course in English as a second language.

Pre-Requisite: (Course Number + Name)

15ENGL102 English Composition II

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

Strategies for Technical Communication in the Workplace. Laura Gurak. Longman, 2009.

Topics Covered:

Topics will include understanding your own writing process and making it more efficient and effective; analyzing purposes, styles and formats of different types of writing; understanding the demands of various audiences, and more.

Introduction/communication and rhetoric

Professional correspondence - formats as guides

Making an argument - Claims and warrants

Working with material; introductions, citations; Organization/citation

Process description and instructions; topic approved

Product Liability and special features

Course Learning Outcomes:

This course covers fundamental theoretical and practical concepts for writing in your career area.

Student Evaluation Methods:

Writing assignments, exams.

Information Technology Course Document

University of Cincinnati

Course Title:

College Algebra and Trig I

Course Number:

15MATH178

UC Bulletin Description:

Introduction to functions and their graphs, solving equations algebraically and graphically, radian measures and applications, graphs of circular functions, oblique triangles, vectors, complex numbers, trigonometric functions; and right angle trig.

Pre-Requisite: (Course Number + Name)

A score of at least 450 on the UC Math Placement Test

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

College Algebra and Trigonometry, 4th edition by Lial, Hornsby & Schneider
Sections: 2.3-2.8, 3.1, 5.1-5.4, 6.1-6.5, 8.1-8.6

Topics Covered:

Course Learning Outcomes:

Provide the fundamentals needed to go on to Algebra and Trig II

Student Evaluation Methods:

Quizzes, Reviews, Exams

Information Technology Course Document

University of Cincinnati

Course Title:

College Algebra and Trig II

Course Number:

15MATH179

UC Bulletin Description:

Trigonometric identities, solving trig equations, the fundamental theorem of algebra, systems of equations and inequalities, matrices, sequences, series. Polynomial and rational functions, exponential and logarithmic functions variable.

Pre-Requisite: (Course Number + Name)

15MATH178 College Algebra and Trig I. A grade of C or better in 15MATH178.

Co-Requisite: (Course Number + Name)

None

Credit Hours: 3 **Contact Hours:** 3

Textbook(s)/Resources:

College Algebra and Trigonometry, 4th edition by Lial, Hornsby & Schneider
Sections: 3.2-3.6, 4.1-4.5, 7.1-7.7, 9.1, 9.2, 9.5, 9.7, 9.8

Topics Covered:

Course Learning Outcomes:

The material covered will include: synthetic division, zeros of polynomial functions, graphs of polynomial and rational functions, inverse functions, exponential functions, logarithmic functions, evaluating logarithms, solving logarithmic and exponential equations, trigonometric identities, double-angle and half-angle identities, inverse circular functions, trigonometric equations, equations involving inverse trigonometric functions, systems of linear equations, matrix solution of linear systems, nonlinear systems of equations, and properties of matrices.

Student Evaluation Methods:

Quizzes, Reviews, Exams

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

Introduction to Discrete Math

Course Number:

15MATH271

UC Bulletin Description:

A course designed for students in the computing technology program. Includes topics in logic, algorithms, number systems, switching circuits, proofs, set theory, vectors, matrices, and mathematical induction.

Pre-Requisite: (Course Number + Name)

15MATH179 College Algebra and Trig II - A grade of C or better in 15MATH179

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 4 **Contact Hours:** 4

Textbook(s)/Resources:

Discrete Mathematics with Applications, 4th Edition by Epp

Topics Covered:

Sections 1.1-1.5, 2.1-2.5, 3.1, 3.2, 3.4, 4.1, 4.3, 4.4, 4.8, 5.1, 5.2, 6.1-6.3

Course Learning Outcomes:

Student Evaluation Methods:

1 homework average (a possible 100 points, dropping 3 lowest scores)
3 exams (each 100 points possible)
1 comprehensive final exam (a possible 100 points)
several bonus vocabulary assignments (5 bonus hwk points, check BlackBoard daily)

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

Introduction to Discrete Math II

Course Number:

15MATH272

UC Bulletin Description:

A continuation of 15MATH271 with topics in counting principles, probability and probability distributions, Boolean algebra, logic networks, recurrence relations and recursion and matrices.

Pre-Requisite: (Course Number + Name)

15MATH271 Introduction to Discrete Math

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 4 **Contact Hours:** 4

Textbook(s)/Resources:

Discrete Mathematics with Applications, 4th Edition by Epp

Topics Covered:

Sections 9.1-9.5, 9.7, 9.8, 7.1-7.3, 5.6-5.8, 8.1-8.5, 10.1-10.3

Course Learning Outcomes:

Student Evaluation Methods:

1 homework average (a possible 100 points)
3 exams (each 100 points possible)
1 comprehensive final exam (a possible 100 points)
several bonus vocabulary assignments (check BlackBoard daily, vocabulary is due the **same** day as the lecture)

Information Technology Course Document

University of Cincinnati

Course Coordinator: College of Arts and Sciences

Course Title:

Introduction to Statistics

Course Number:

15STAT241

UC Bulletin Description:

Descriptive statistics, normal distribution, sampling theory, hypothesis testing, confidence limits, regression and correlation, ANOVA.

Pre-Requisite: (Course Number + Name)

15MATH174 College Algebra II, 15MATH179 College Algebra and Trig II, 15MATH224 Foundations of Applied Calculus, or an MPT score of at least 570

Co-Requisite: (Course Number + Name)

N/A

Credit Hours: 4 **Contact Hours:** 4

Textbook(s)/Resources:

The Basic Practice of Statistics, 5th Edition, by David Moore

Topics Covered:

Chapters 1-6, 8-24, 26

Course Learning Outcomes:

Student Evaluation Methods:

1 homework average (a possible 100 points)
3 exams (each 100 points possible)
1 comprehensive final exam (100 points possible)
several bonus vocabulary assignments (check BlackBoard daily)

Name: Ken Baker

Education :

Ph.D. in Information Technology (pending), Capella University, Minneapolis, MN 2010
Specialization – Information Technology Education (pending)

Post-Masters Certificate in Teaching, Capella University, Minneapolis, MN

MBA in Technology Management, University of Phoenix, Phoenix, AZ

Bachelor of Science, Social Sciences, Portland State University, Portland, OR

Academic

Adjunct Assistant Professor, 2010-present - University of Cincinnati -- teaching Contemporary Programming I & II (C#, .NET, and the CLR)

Non-academic experience:

LexisNexis, Miamisburg, OH 2010-present
Performance ADP Inc., Portland, Oregon Manager of Software Development, Developer Support and Performance Engineering (1999 – 2009) Senior Performance Engineer and Capacity Planning Specialist (1994 – 1999)

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution):
Communications/ Web position on the executive council of SIGITE.
Program co-chair - Association for Computing Machinery Special Interest Group for Information echnology Education 2009 and 2010 Conferences.
Editor for Computer Measurement Group Measure IT publication

Briefly list the most important publications and presentations from the past five years :
Baker, K. A. (2009). Learning Theory and the Re-Education of Older Software Engineers. [Research Paper].*Research in IT, 6*(2), 10.
Baker, K. A., Karlins, M., Kondilis, A., &Borasky, M. E. (2008).*Linux System Health Metrics and Data Visualization*. Paper presented at the CMG 08' International.
Baker, K. A., Chmura, A., & Chow, T. (2008). *Virtual Community of Interest at Capella University*. Paper presented at the ACM SIGITE 2008. Retrieved from http://doi.acm.org/10.1145/1414558.1414569.

Briefly list the most recent professional development activities: NA

Name: Prabir Bhattacharya

Education:
Doctor of Philosophy in Mathematics, University of Oxford, 1979
Master of Arts in Mathematics, University of Delhi, 1970
Bachelor of Arts in Mathematics, University of Delhi, 1967

Academic experience:
Professor and School Director, 2009-Present, UNIVERSITY OF CINCINNATI, School of Computing Sciences and Informatics,Cincinnati, Ohio
Endowed Professor, 2004-2009, Concordia University, Montréal, Quebec
Professor, 1986-1999, University of Nebraska-Lincoln

Non-academic experience:

1999-2004, Panasonic Information and Networking Technologies Lab, Princeton, New Jersey, *Principal Scientist*

Certifications or professional registrations: NA

Current membership in professional organizations: ACM

Honors and awards:
ACM National Lecturer during 1996-99

Service activities (within and outside of the institution):

School Director, School of Computing Sciences and Informatics, University of Cincinnati

Briefly list the most important publications and presentations from the past five years :

N. Mohamed, H. Otrok, L. Wang, M. Debbabi and P. Bhattacharya, "Mechanism Design-Based Secure Leader Election Schemes for Mobile Ad Hoc Networks," *IEEE Transactions on Dependable and Secure Computing*. Accepted for publi- cation.

E.E. Abdallah, A. Ben Hamza and P. Bhattacharya, "Watermarking 3D Models Using Spectral Mesh Compression," *Signal, Image and Video Processing*, vol. 3, no. 4, pp. 375-389 (2009).

M. Rahman, P. Bhattacharya and B.C. Desai, "AUnifiedImageRetrieval Frame- workon Local Visual and Semantic Concept Based Feature Spaces," *Journal of Visual Communication and Image Representation*, vol. 20, no. 7, pp. 450-462 (2009).

H. Otrok, N. Mohammed, L. Wang, M. Debbabi and P. Bhattacharya, "A Game- Theoretic Intrusion Detection Model for Mobile Ad-hoc Networks," *Computer Communications*, vol. 31, no. 4, pp. 708-721 (2008).

M. Rahman, P. Bhattacharya and B.C. Desai, "A Framework for Medical Im- age Retrieval using Machine Learning and Statistical Similarity Matching Tech- niques with Relevance Feedback," *IEEE Transactions on Information Technology in Biomedicine*, vol. 11, no. 1, pp. 59-69 (2007).

H.Otrok,M.Mehrandish,C.Assi,M.DebbabiandP.Bhattacharya,“GameThe- oretic Models for Detecting Network Intrusions,” *Computer Communications*, vol. 31, no. 10, pp. 1934-1944 (2008).

Q. Li, L. Zhang, J. You, D. Zhang, and P. Bhattacharya, “Dark Line Detection with Line Width Estimation,” IEEE International Conference on Image Process- ing, San Diego, Oct. 2008, pp. 621-624.

Briefly list the most recent professional development activities: NA

Name: Ralph Brueggemann

Education:
MIAMI UNIVERSITY, Oxford OH Bachelor of Arts, 1967, Dean's List, Phi Eta Sigma (Freshman Honor Society)
UNIVERSITY OF CINCINNATI Master of Business Administration, 1969, Omicron Delta Epsilon (Economics Honor Society)
UNIVERSITY OF CINCINNATI Bachelor of Science, 1973, Information Processing Systems
UNIVERSITY OF CINCINNATI, 1973 to present, Beta Sigma Gamma (Business Honor Society)
Master of Science, Information Systems, planned graduation for June 2012 Entrepreneurship

Awards and Honors:
First Place: 2007 UC MBA New Venture Competition (Bioinformatics)
Finalist: 2007 UC Spirit of Enterprise Business Plan Competition

Academic Experience:
Adjunct Professor 1974-PresentUniversity of Cincinnati
Lecturer St. Thomas More College, Crestview Hills, KY 1972-1974

Nonacademic Experience:
Cincinnati Children's Hospital Medical Center Cincinnati, OH 2005-Present James M. Anderson Center for Health Systems Excellence, Director Data Systems

Cincinnati Children's Hospital Medical Center Cincinnati, OH 2007-2007 Division of Health Policy and Clinical Effectiveness 2007-2007
Consultant (**Enterprise Information Systems**, LLC, Owner, Chief Technical Officer) Project Management and consulting for the innovative quality improvement systems, application systems and infrastructure

Division of Biomedical Informatics 2005-2007 Consultant (Enterprise Information Systems, LLC, Owner, Chief Technical Officer)

University of Cincinnati Academic Health Center, Academic Information Technology and Libraries, Cincinnati, OH **1997-2005; Director of Systems Development 2000-2005 Associate Director 1997-2000**

DOLBEY and Company, INC. (Microsoft Solution Provider), Cincinnati, OH 1994-1997 Software Development Manager

Cincom Systems, Inc. Cincinnati, OH 1981-1994*Principal engineering manager of products that generated $700 million in total revenue from 1981-1994Top Employee Award Four Times* **Manager of Systems Integration** 1993-1994; **Senior Manager of Ventures Development and Support** 1992-1993 **Senior Technical Product Manager** 1990-1992 **Manager of Software Engineering** 1988-1990 **Manager of Systems Software** 1981-1988

Macy's Department Stores, Inc. Cincinnati, OH 1976-1981 **Business Systems Manager** 1978-1981 **Programming Manager** 1976-1978

Cincinnati Bell Information Systems Cincinnati, OH 1969-1976 **Data Systems Analyst** 1975-1976 **Systems Analyst** 1969-1975

Certifications or Professional Registrations: N/A

Current Membership in Professional Organizations:
Association for Computing Machinery
Institute of Electrical and Electronics Engineers, Inc:

Honors and Awards:
IEEE Senior Member
Faculty Excellence Award, June 1999

Service Activities: N/A

Publications and Presentations:
Reynolds, George, "Information Technology for Managers" Course Technology, 2010, contributing author to Chapter 11, Enterprise Archtiecture
Fant WK, Brueggemann RF, Riep JR. Implementing IAIMS at the University of Cincinnati. Presented at the 2004 IAIMS Consortium Meeting, April, 27, 2004, Vienna, VA.
Zender M, Jegga A, Brueggemann RF, A Collaborative Meta Tool for Organizing Describing and Annotating
Bioinformatics Tools and Databases, Presented at the Ohio Collaborative Conference on Bioinformatics (OCCBIO) June 28-30, 2006, Ohio University, Athens, Ohio.

Name: Brian Dietrick

Education:
Bachelor of Science in Information Engineering Technology –University of Cincinnati, 2001

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

Non-academic experience:

2011-Present; Wilson Medical Center, Wilson, North Carolina*Director of Information Services*
2006-2011; Brown County Regional HealthCARE, Georgetown, Ohio *Director of Information Technology*
2002-2006; 3M, Cincinnati, Ohio *Senior Developer*
2000-2002; Corning Incorporated, Cincinnati, Ohio *Web Developer*

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution):

Industry Advisory Committee, Information Technology Program, University of Cincinnati

Briefly list the most important publications and presentations from the past five years : NA

Briefly list the most recent professional development activities: NA

Name: Terry Eshom

Education:
Master of Science in Chemistry, University of Cincinnati, 1975
Bachelor of Science in Chemistry, University of Cincinnati, 1993

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

Non-academic experience:

1990-Present; Cinergy Corporation, Cincinnati, Ohio *Technology Engineer*
1980-1990; University of Cincinnati, Cincinnati, Ohio *Systems Programmer*

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years : NA

Briefly list the most recent professional development activities: NA

Name: David Freeze

Education – degree, discipline, institution, year:

Xavier University, Cincinnati, OH
Master of Business Administration

Miami University, Oxford, OH
Bachelor of Science in Business

Academic experience:

University of Cincinnati, Cincinnati, OH 1999 to Present
Adjunct Faculty Member – College of Engineering

Non-academic experience – company or entity, title, brief description of position, when (ex. 1993-1999), full time or part time:

Kendle International, Cincinnati, OH
IT Manager – ERP Accounting Systems 2008 to Present

George Fern Company, Cincinnati, OH
Business Analyst / Project Manager 2007 to 2008

Honeywell, Cincinnati, OH
Sr Principal Engineer 2004 to 2007

ACNielsen BASES, Covington, KY
IT Business Analyst 2000 to 2004

Clopay Corporation, Mason, OH 1998 to 2000
Systems Analyst

Cap Gemini Ernst & Young, Blue Ash, OH 1997 to 1998
Software Consultant

Convergys, Cincinnati, OH 1996 to 1997
Programmer/Analyst

Certifications or professional registrations: N/A

Current membership in professional organizations: N/A

Honors and awards: N/A

Service activities (within and outside of the institution): N/A

Briefly list the most important publications and presentations from the past five N/A

Briefly list the most recent professional development activities:

Name: Virginia A. Fritz

Education:
2006 to Present Master in Information Systems (part-time, expected graduation 2012)
College of Business, University of Cincinnati, Cincinnati, Ohio
1998 to 2001 Bachelor in Information Engineering Technology
College of Applied Science, Cincinnati, Ohio

Academic experience:
University of Cincinnati, 2002-present; adjunct instructor

Non-academic experience:
Aikido of Cincinnati, part-time position –Office manager, 2005-present
Perfect Probate, Office manager, 2002-2004
H&R Block, Dean Whitaker, CPA, Liberty Tax, Eagle Profession Solutions, 1998-2000, 2010-2010 (Seasonal), Income tax preparer
United States Marine Corps, Electro-Optical Technician, 1973-1997

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five: NA

Briefly list the most recent professional development activities: NA

Name: Brandan Jones

Education:
Master of Business Administration, University of Cincinnati Cincinnati, Ohio, June 2004.

BS Business, Miami University Oxford, Ohio, May 1997

BS Horticulture, University of Cincinnati Cincinnati, OH, Graduation approved Spring 2011.

Academic experience:
University of Cincinnati, March 2001 – Present *Adjunct Assistant Professor for University of Cincinnati College of Applied Science.*

Non-academic experience:

PCMS Datafit, July 2008 – Present *Technical Trainer, Technical Architect*

Great American Insurance, June 2006 – July 2008 *Member of the Underwriter Desktop Development Team.*

Hewlett-Packard, Procter and Gamble IT Outsourcing, February 2004 – June 2006
Analyst in HP's Governance organization on the Procter and Gamble account.

Midwest Payment Systems, Fifth Third Bank, December 1999 – September 2002
B2B Systems Analyst for commercial Internet applications.

The Procter and Gamble Co., Management Systems: May 1997-January1999*Systems Analyst, supporting P&G's US Accounts Payable and Corporate Facilities departments.*

Certifications or professional registrations:
Sun Certified Java 1.1 programmer.*Competency: Expert*.
Perl: Used on most freelance websites, and in 30-IT-252 class. *Competency: Advanced.*
JavaScript/HTML*:*Brainbench certified. *Competency: Expert.*
Lotus Notes: Certified Lotus Professional. *Competency: Intermediate.*
Unix: Used Unix platform for many Internet applications. *Competency: Intermediate.*

Current membership in professional organizations:
Cincinnati Java Users Group: member since 1999

Honors and awards:
Faculty Member who Motivated, Inspired, Encouraged: University of Cincinnati, 2004 and 2007
Sun Java Certified Programmer, 1.1: 1999
BrainBench JavaScript Certified: 2001
Certified Lotus Professional: 1996
UC Students in Free Enterprise (SIFE), Faculty Advisor: 2002-Present.

Service activities (within and outside of the institution):

Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation:

- January 2008: Published “How Nurseries Can Benefit from a Regional Virtual Arboretum”

Briefly list the most recent professional development activities: N/A

Name: Patrick C. Kumpf

Education – degree, discipline, institution, year:

ED.D. University of Cincinnati, Cincinnati, OH June 1974
Major: Vocational/Technical Education.
ED.M. University of Cincinnati, Cincinnati, OH June 1966
Major: Business Education; Guidance/Counseling.
B.S.in ED. University of Cincinnati, Cincinnati, OH June 1965
Major: Business Education.

Academic experience:

College of Education, Criminal Justice and Human Services, University of Cincinnati Interim Department Head, Information Technology Department July 1, 2011 - present
College of Engineering and Applied Science, University of Cincinnati Interim Program Director, Information Technology, School of Computing Sciences and Informatics July 1, 2010 – July 1, 2011
College of Applied Science, University of Cincinnati, Associate Dean September 2003 – September 2009
Interim Head, Information Technology Department April 2005 – June 2006
University College, University of Cincinnati September 1967 – September 2003 Associate Dean September 2001 – September 2003 Department Head, Business Technologies Department September 1996 - 2001 September 1986 transferred to the Business Technologies Department. Associate Professor, Coordinator of the Pre-Business Administration Program; Coordinator of the Computer Applications area; Academic Area Coordinator Information Technology, College of Evening and Continuing Education. Director, University College Placement Office September 1982 – 1986 Released from teaching duties half time to establish Placement Office. Associate Professor, Information Technology
College of Evening and Continuing Education, University of Cincinnati
Thirty-five year association with The College of Evening and Continuing Education. Taught Information Technology courses during the evening and summer sessions. Academic Area Coordinator, Information Technology; Member, Academic Council; Chair, Faculty Enhancement Committee.
College of Education, Criminal Justice and Human Services, University of Cincinnati
Two-year association with the College of Education, University of Cincinnati.Adjunct, assisted this college in the supervision of student teachers and taught several methods courses, 1972-74.
Morehead State University, Morehead, KY.
February 1967 (one semester), Instructor, School of Applied Science. Taught traditional business education courses.
Cincinnati Public Schools, Cincinnati, OH.
September 1966 (one semester). Teacher at Withrow High School.
Monsanto Chemical Company, Port Plastics Division, Addyston, OH.
Summer employment during college.

Non-academic experience – company or entity, title, brief description of position, when (ex. 1993-1999), full time or part time: NA

Certifications or professional registrations: NA

Current membership in professional organizations:

Association of Computing Machinery (ACM)
Society of Information Technology Education (SIGITE).
Delta Pi Epsilon.

Honors and awards:
Ohio College Tech Prep Service Award, April 2011
Delta Pi Epsilon, Honorary Graduate Society in Business Education
Chairperson of several monthly or quarterly meetings, served two terms as Chapter Historian, served as Recording Secretary, member of the Executive Board two terms.
Phi Delta Kappa, Honorary Society in Education.
Iota Lambda Sigma, Honorary Society in Vocational/Technical Education.
Excellence in Teaching Award 1989-1990. CECE.

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years:of publication or presentation:
Mark Stockman, Hazem Said, Soleda Leung, Louise Chaytor, Christopher Christopherson, Sam Geonetta, Dan Humpert, Patrick Kumpf, Russ McMahon, John Nyland, AnnuPrabhakar, TamisraSanyal, Robert Schlemmer, ValiTadayon, and Tom Wulf, "An Implementation of Secondary Tracks in an Information Technology Degree Program," Proceedings of the 2004 Conference on Information Technology Education, Salt Lake City, UT, October, 2004.

Briefly list the most recent professional development activities: NA

Name: Jason Maloney

Education:
Bachelor of Science, Information Technology (*Magna Cum Laude*) – University of Cincinnati, 2005

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

Non-academic experience:

2008-Present; HP Enterprise Services, Cincinnati, Ohio *Enterprise Application Integration Product Delivery Consultant*
2006-2007; GBBN Architects,Cincinnati, Ohio *Assistant Network Administrator*
1990-1993;General Electric – Aviation Division, Cincinnati, Ohio *Data Acquisition Systems Engineer*

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years : NA

Briefly list the most recent professional development activities: NA

Name: Russell E. McMahon

Education:
Master of Science in Education, University of Cincinnati, 1981
Bachelor of Science in Physics, University of Cincinnati, 1976

Academic experience:

University of Cincinnati: College of Engineering and Applied Science, 2010 to present College of Applied Science, 1999 – 2010

Northwest Local Schools - Cincinnati, Ohio (Teacher) 1994 – 1999

Lockland City Schools - Lockland, Ohio (Teacher) 1980 - 1985

Non-academic experience:
Cincom Systems - Cincinnati, Ohio (Trainer & Instructional Designer) 1985 - 1989, 1993 – 1994

The Cincinnati Gas & Electric Company - Cincinnati, Ohio (Trainer &Instr Design) 1989 - 1993

Certifications or professional registrations: NA

Current membership in professional organizations:
One of the founders of TechLife Cincinnati a meeting space for the IT community (2009)
Cincinnati .NET User Group (CinNUG)
Cincinnati American Society for Training and Development (ASTD)
Cincinnati Information Systems Audit and Control Association (ISACA)
Cincinnati Information Systems Security Association (ISSA)
Cincinnati InfraGard
Cincinnati Network Professionals Association (CiNPA)
Cincinnati Open Web Application Security Project (OWASP)
Cincinnati SQL Server Users Group (SSUG)
Southwest Ohio Data Management Association (SWOCDAMA)
The Circuit – Greater Cincinnati's IT Alliance & part of Ohio's IT Alliance

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years

Briefly list the most recent professional development activities: NA

Name: Ronald Mead

Education:
Master of Science, Computer Engineering – University of Cincinnati, 1994
Bachelor of Science, Electrical Engineering – University of Cincinnati, 1990

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

Non-academic experience:

2003-Present;Great American Insurance, Cincinnati, Ohio *Enterprise Data Architect*
1998-2003; Divine/Synchrony Communications, Blue Ash, Ohio *Database Architect*
1993-1998;Streamline Health/Intraprise Solutions,Blue Ash, Ohio *Software Development Lead*
1990-1993;General Electric – Aviation Division, Cincinnati, Ohio *Data Acquisition Systems Engineer*

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards:
AICPCU.org – National Distinguished Graduate Award

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years :

N/A

Briefly list the most recent professional development activities: NA

Name: Daniel P. Meurer

Education:
Xavier University Cincinnati, OH Certified Project Manager - 2008
M.B.A. prerequisite coursework M.I.S.1980-1983
B.S.B.A.- Information Systems- 1980 (cum Laude)

Academic experience :
University of Cincinnati College of Evening and Continuing Education September, 1990 – August, 2002; University College September, 1997 – August, 2003; College of Applied Science September, 2002 – June,2010; Coll. of Eng.&App. Sci. - School of Computing Sciences. & Informatics (part-time) June, 2010 – Present Adjunct Instructor Sept. 1990 – Aug. 1999 Adjunct Asst. Professor Sept. 1999 – Present

Non-academic experience :
MBS Associates January, 2010 – December, 2010 Duke Energy - Smart Energy Systems Business/Data Analyst

Cincinnati Bell Telephone September, 1999 – July, 2009 Business Market IT. Lead Analyst/Sr. Project Mgr.

SDC Computer Services July, 1997 - September, 1999 Hoxworth Blood Center I.T. Project Manager

University of Cincinnati July, 1985 - June, 1997 Medical Computer Services Area Systems Manager

Computing Center Contracts Division October, 1976 - February, 1979 Systems Analyst

General Electric Co. February, 1979 - July, 1985 Cincinnati, OH Systems Analyst

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years: NA

Briefly list the most recent professional development activities: NA

Name: Kurt Monroe

Education:
University of Cincinnati, 1987 Bachelor of Science, Information Processing Systems

Academic experience :

University of Cincinnati, Cincinnati, Ohio**1996 – Present** Adjunct Instructor, part-time – College of Applied Science

Non-academic experience:
Virtual Simulation And Training Inc. Dayton, Ohio **2003- Present**
Self-Employed Database Designer/Application Developer 2001 - 2006
Atos Origin, Cincinnati, Ohio **1999 – 2001**
Aventis Pharmaceuticals, Cincinnati, Ohio **1987 – 1999**

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years:

Briefly list the most recent professional development activities: NA

Name: Ahmad Mostafa

Education:
Doctor of Philosophy Candidate, Computer Science – University of Cincinnati, 2011
Master of Science in Industrial Engineering – University of Cincinnati, 2007
Bachelor of Science in Electrical Engineering – Cairo University, 2005

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

John C. Smith University, College of Engineering, Charlotte, NC
Adjunct Instructor

Non-academic experience: NA

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards:
University of Cincinnati – NIOSH Training Fellowship
ORASCOM – Engineering Achievement Award

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years : NA

Briefly list the most recent professional development activities: NA

Name: John Nyland

Education:
Master of Business Administration in Information Systems – University of Cincinnati, Cincinnati, OH, 2005
Bachelor of Science in Information Engineering Technology – University of Cincinnati, Cincinnati, OH, 2000

Academic experience:
2002-Present; University of Cincinnati, Assistant Professor
2000-2002; University of Cincinnati, Adjunct Instructor

Non-academic experience:

1999-2002; University of Cincinnati, Cincinnati, Ohio *Information Technology Analyst*
1997-2002; University of Cincinnati, Cincinnati, Ohio *Computer Support/Lab Technician*

Certifications or professional registrations: NA

Current membership in professional organizations:

Association for Computing Machinery (ACM)
Association for Computing Machinery, Special Interest Group for Information Technology Education (ACM-SIGITE)
Cincinnati Networking Professionals Association (CiNPA)
Microsoft Partner Program, Registered Member

Honors and awards: NA

Service activities (within and outside of the institution):

IT Steering Committee, College of Applied Science, University of Cincinnati.*Ongoing*

Department Head Review Committee, Department of Mechanical Engineering Technology, University of Cincinnati, College of Applied Science.*2006*

Student Advisor, University of Cincinnati, College of Applied Science, Department of Information Technology.*Ongoing*

IT Marketing Committee, University of Cincinnati, College of Applied Science, Department of Information Technology.*Ongoing*

Networking Track Curriculum Committee, University of Cincinnati, College of Applied Science, Department of Information Technology.*September 2003 – Present*

Briefly list the most important publications and presentations from the past five years :

Said, H., Stockman, M., Leung, Nyland, J. (2006). The Information Technology Minor: Filling a Need in the Workforce of Today. Association for Computing Machinery, Special Interest Group for Information Technology Education (ACM/SIGITE) Conference '06 Proceedings and the ACM Digital Library.

Briefly list the most recent professional development activities:

OPNETWORK 2006, A weeklong industry conference with significant daily training seminars funded by a Faculty Development Grant. Washington, D.C., August 28th through September 1st 2006.

Name: AnnuPrabhakar

Education – degree, discipline, institution, year:
Master of Science, ***Computer Science,*** Mississippi State University, Mississippi State, MS., August 1997
Bachelor of Technology, ***Electrical Engineering*** University of Kerala, Trivandrum, India, November 1990

Academic experience:

College of Engineering and Applied Science, University of Cincinnati, Cincinnati, OH Associate Professor of Information Technology: 2010 July- present

College of Applied Science, University of Cincinnati, Cincinnati, OH Associate Professor of Information Technology: 2006–2010 Assistant Department Head, Department of Information Technology: 2006-2008 Assistant Professor of Information Technology: 2000-2006

Non-academic experience:

The Health Alliance, Cincinnati, OH *Information Systems Analyst,* August 1997 – September 2000

Mississippi State University, Mississippi State, MS *Graduate Research Assistant, Diagnostic Instrumentation and Analysis Laboratory,* October 1994 – May 1997

Institute of Human Resources Development for Electronics, Trivandrum, India.*Research Associate,* April 1991 - October 1993

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years:

A. Prabhakar, "Use of Blogs to improve freshmen class communication" Intertech, March 2010, Brazil
A. Abafo, A Prabhakar, "Infusing Simplex Creative Problem Solving into Composition", Conference on College Composition and Communication, Louisville, KY March 2010
G. Suckarieh, L. Caldwel, A. Prabhakar, R. Soman, "E-Portfolio Applications in College of Applied Science at UC with LiveText", e-portfolio day, Columbus OH, 2009
A. Prabhakar, G. Suckarieh,"Using E-Portfolios in Applied Science Programs, Conference on Assessment of Students and Programs." October 2008, Eastern Michigan University,
G. Suckarieh, A. Prabhakar, J. Thompson, "Path to undergraduate e-portfolio implementation" ODCE Conference March 2008, Columbus OH
A. Prabhakar, V. Westheider, "Information Technology Freshmen Learning Community", Ohio Digital Commons for Education(ODCE), March 2008, Columbus, OH,
A.Prabhakar, G.Suckarieh, B. Resnick, J. Dong, "Incorporating Experiential Learning for Students in Engineering Technology" Santos, Brazil, March 11-14, 2007

J. Thompson, G. Suckarieh, E. Inglert, A.Prabhakar, R. Soman. L. Caldwell "Launching ePortfolios for Learning, Assessment and Employment in a Technical College", International Conference on e-portfolio, Oct 11- 14, 2006, Oxford, UK

Prabhakar, G. Suckarieh, E. Inglert, K. Ossman, J. Thompson, Laura Caldwell, V. Elkins, R. Soman, "Starting ePortfolios Project in Technology Programs", Ohio Digital Commons for Education (ODCE) 2006 Conference , Columbus, OH, March 2006

A. Prabhakar, G. Suckarieh, T. Walker, "CASROL: A web-based knowledge management system", Proceedings of the International Conference on Engineering and Computer Education, Madrid, Spain Nov 2005

A. Prabhakar, G. Suckarieh, "Honors faculty project for improving knowledge sharing among the faculty" Mid-East Honors Association Conference, Columbus, OH 2005

Briefly list the most recent professional development activities:

- Reviewer ITiCSE and SIGCSE 2010
- Simplex Creative Problem Solving method – got Train-the-trainer certificate
- Visual Studio Team System 200 Level Training, Microsoft Campus in Redmond, WA, May 14-17, 2007 (sponsored by Microsoft)
- Advanced We Application Technologies with MS Visual Studio, Cincinnati, OH April 2-5, 2007
- LiveText e-portfolio development training, March 9, 2007, Cincinnati
- International Conference on e-portfolio, Oxford, UK, Oct 2006,
- Visual Studio Live, Toronto 2006
- Microsoft Faculty Development workshop on Web development using ASP.NEt 2.0, Las Vegas, 2006
- Visual Studio Live: Toronto, Canada April 2006
- Lead presenter, "Starting ePortfolios Project in Technology Programs", Ohio Digital Commons for Education (ODCE) 2006 Conference , Columbus, OH, March 2006
- ACM SIGITE Conference, Newark, NJ, Oct 2006
- Presenter, UC FYE Research series: Topic: E-portfolio, Winter 2006
- Academic Career panelist, Ohio Celebration of Women in Computing Conference, Columbus OH, 2005
- Moderator, Women in Technology Conference 2004,2005,2006

Name: Randall B. Russ

Education – degree, discipline, institution, year:
Master's in Public Administration, with an emphasis in Administrative Organization and Management, Golden Gate University, San Francisco, California, August 1987.
Bachelor of Arts in Sociology, St. Leo University, St. Leo, Florida, September, 1986.
Associate of Arts in Instructional Technology, Community College of the Air Force, Maxwell AFB, Alabama, March 1995.
MOS Certification, Microsoft Corporation, Seattle, Washington. October 2000.
A+ Certification, Northern Kentucky University, Covington, Kentucky. April 2002. Occupation Based Certificate, Education Professional Standards Board, Frankfort, Kentucky. February 2011.

Academic experience:
University of Cincinnati, 1998-present - Adjunct Assistant Professor, Business and Commerce Department
Northern Kentucky University, 2001-present - Instructor, Community Education

Non-academic experience:
Computer Fundamentals Training – USAF (Dec 1993 – Apr 1998) Director

Training and Development Division – USAF (Sept 1987 – Oct 1993)Supervisor

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five: NA

Briefly list the most recent professional development activities: NA

Name: Hazem Said

Education:
Doctor of Philosophy in Aerospace Engineering, University of Cincinnati, 2001
Master of Science in Mechanical Engineering, Cairo University, 1996
Bachelor of Science in Mechanical Engineering, Cairo University, 1992

Academic experience:
University of Cincinnati, College of Engineering and Applied Sciences
School of Computing Sciences and Informatics Associate Professor 2000 - Present

Non-academic experience – company or entity, title, brief description of position, when (ex. 1993-1999), full time or part time: NA

Certifications or professional registrations:
Completed the following professional course from the SANS institute: Security Essentials
Completed the following professional course from the Software Engineering Institute:Software Product Lines
Completed the following training from Basadur Applied Creativity: Using Applied Creativity; Leading and Facilitating Applied Creativity sessions (Facilitator workshop); Advanced Managerial Skills and Train-The-Trainer
Completed the following professional course from the Accreditation Board of Engineering and Technology: Program Assessment workshop; Program Evaluator for Information Technology programs

Current membership in professional organizations: NA

Honors and awards:
2011 UC Marian Spencer Diversity Ambassador Award April 2011
Recognized by Class of 2008 as a special person to students[1] June 2008
Recognized by Class of 2007 as a special person to students June 2007
Who's Who Among America's Teachers, 11th Edition, Volume I, 2006-2007
Best Diverger Award, Basadur Applied Creativity Advanced Managerial 2008
Skills and Train-The-Trainer program
University of Cincinnati Honor Roll of Volunteers 2006 & 2007

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation:
Hazem Said and Mark Stockman, "Assessment process for the Information Technology program at the University of Cincinnati", ABET Best Assessment Process Symposium, Indianapolis, IN, April 3-4, 2009
Mark Stockman, Soleda Leung, John Nyland and Hazem Said, "The Information Technology Minor: Filling a Need in the Workforce of Today", *Proceedings of the 2006 Conference on Information Technology Education, Minneapolis, MN,* October 19-21, 2006

[1] Each year, the graduating seniors are asked to name a person who made a significant impact on their life while at the University. The graduating class then recognizes those individuals as special person to students.

Name: MaureenSchomaker

Education:

University of Cincinnati -Ed.D. – College of Education, Criminal Justice and Human Services, Curriculum and Instruction, Instructional Design and Technology Doctoral Student, expected 2014
M.Ed. - College of Education, Criminal Justice and Human Services Curriculum and Instruction,2005
B. A. McMicken College of Arts and Sciences History, 1999

Academic experience :
University of Cincinnati – 2008 - present Adjunct Assistant Professor, Division of Professional Practice Adjunct Assistant Professor, College of Engineering and Applied Science 2011.

College of Mount Saint Joseph 2007-2008 Cincinnati, OH Instructional Designer, Department of Information Technologies

University of Cincinnati 1999–2006 Cincinnati, OH Annual Adjunct Instructor, College of Applied Science, University College, College of Evening and Continuing Education; College of Education, Criminal Justice, Human Services, Raymond Walters College, Center for Access and Transition for learning
Program Coordinator; Academic advisor

Non-academic experience :
Western and Southern Financial Group 2007 Cincinnati, OH Manager, Performance Support, Human Resources - Guilford Institute
Member, Energy and Tech Expo Conference Steering Committee, College of Engineering and Applied Science 2010
Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution):
University of Cincinnati: Chair, Employer Manual Sub-Committee 2010 – present; Faculty Advisor for Student Vietnamese Association, 2009 – present;College of Applied Science Curriculum Committee member 2009 – present; Elected member Curriculum Committee, Division of Professional Practice 2009 – present; Chair Data Analysis Subcommittee, Division of Professional Practice 2009-present; Member, Introduction to Cooperative Education Model Syllabus Subcommittee Division of Professional Practice 2009 – present; Member, Assessment Sub Committee 2010 to present; Member, Energy and Tech Expo Conference Steering Committee, College of Engineering and Applied Science 2010
College of Mount Saint Joseph Service Activities 2007-2008 Member, Instructional Design Technology Committee; Co Facilitator Faculty Learning Community
St. Bartholomew Consolidated School Board 1998-2004 Assumed multiple roles on working school board to provide direction and support to administration, including Long Range Planning, Communications, Technology, Finance committees.

Briefly list the most important publications and presentations from the past five years:
Cooperative Education and Internship Association National Convention, San Antonio, TX- Co-Presenter, A Mixed Methods Research Approach to Creating an Employer Handbook 2011 2010

Co-presenter at Second Annual Industrial Symposium hosted by the University of Cincinnati, Employer Best Practices That Meet Short-Term and Long-Term Co-op Objectives Cooperative Education and Internship Association National Convention, Boston, MA Coordinated and managed two co-op students to provide audio video equipment and support for the convention	2010
Delivered co-operative education program overview to incoming freshman and parents for new student orientation	2009 - 10
Facilitated new student orientation regarding learning management system for graduate students in blended learning environment	2007
Delivered new hire presentation for new faculty, outlining course management system capabilities, College of Mt. St. Joseph	2007
Delivered presentation highlighting student involvement for Center for Access and Transition Sparks Awards Program, (First Year Experience) University of Cincinnati	2006
Nominated Outstanding Teacher Award – Part Time, Center for Access and Transition, (First Year Experience) University of Cincinnati	2006

Briefly list the most recent professional development activities: NA

Name: MarkStockman

Education:
Master of Business Administration, 1994
College of Business Ohio University, Athens, OH

Bachelor of Science, Industrial and Systems Engineering [cum laude], 1992 Russ College of Engineering and Technology Ohio University, Athens, OH

Academic experience:
Associate Professor, Information Technology University of Cincinnati, College of Engineering and Applied Science, Cincinnati, OH September 2007 – Present

Assistant Professor, Information Technology University of Cincinnati, College of Applied Science, Cincinnati, OH September 2001 – September 2007

Special Assistant to the Vice President, Regional Higher Education (RHE) Ohio University, Athens, OH July 2000 - August 2001

Director of Computer Services and Instructional Technology, Lancaster Campus
Ohio University, Lancaster, OH July 1996 - August 2001

Non-academic experience:
Systems Analyst TecSol, Inc., Cranberry Twp., PA ,April 1996 - July 1996

Information Specialist School Study Council of Ohio (SSCO), Columbus, OH January 1995 - April 1996

Systems Engineering Co-op Student Air Force Logistics Command, Wright-Patterson Air Force Base, OH 1989 – 1991

Certifications or professional registrations: N/A

Current membership in professional organizations:
Association for Computing Machinery (ACM)
Association for Computing Machinery, Special Interest Group for Information Technology Education (ACMSIGITE)
Cincinnati Networking Professionals Association (CINPA)
System Administrators Guild (SAGE)
USENIX – the Advanced Computing Systems Association

Honors and awards:
Recognition of Service Award – 2009 Association for Computing Machinery (ACM)
Faculty Bonus Award (Teaching) – 2007 UC College of Applied Science For outstanding work related to individual teaching activities. Bonus recommended by the Department Head of Information Technology and the Dean of the College of Applied Science then approved by the University Provost.
Faculty Bonus Award (Scholarship) – 2006 UC College of Applied Science For outstanding work related to individual scholarship activities. Bonus recommended by the Department Head of Information Technology and the Dean of the College of Applied Science then approved by the University Provost.

Faculty Recognition – 2006 UC College of Applied Science Recognition Reception Recognized for achievement in obtaining external funding. Awarded $5,000 in scholarship money for undergraduates in Information Technology by outside donors of the College of Applied Science

Service activities (within and outside of the institution):
Editorial Board, *Research in IT*, ACM-SIGITE (Association for Computing Machinery, Special Interest Group for Information Technology Education) semi-annual peer-reviewed electronic publication. *September 2005 - Present*
Program Committee, ACM-SIGITE (Association for Computing Machinery, Special Interest Group for Information Technology Education).*2008, 2009, 2010*
Program Committee, ACM-SIGITE (Association for Computing Machinery, Special Interest Group for Information Technology Education), CITC IV
Departmental Accreditation/Assessment Committee (Chair), University of Cincinnati, College of Applied Science, Department of Information Technology – Lead the department in the successful effort for ABET accreditation of IT bachelors degree program. *March 2007 – July 2010*
Department Curriculum Committee (Chair), University of Cincinnati, College of
Vice Chair/Executive Committee, ACM-SIGITE (Association for Computing Machinery, Special Interest Group for Information Technology Education). Elected to two-year term for 400+ member society of IT educators. *September 2007 – June 2009*

Briefly list the most important publications and presentations
Stockman, M. (2011).Remotely Accessible Systems for the Computing Sciences Disciplines. In Azad, A., Auer, M.,&Harward, J. (Eds.), *Internet-Based Remote Laboratories: Scalable E-Learning Tools for Engineering and ScienceDisciplines*(pp. XX-XX). Hershey, PA: IGI Global Publishing.
Stockman, M., &Nyland, J. (2010). A Teaching Pedagogy for Networking/System Administration Courses;Freshman through Senior Years. Association for Computing Machinery, Special Interest Group for InformationTechnology Education (ACM/SIGITE) Conference '10 Proceedings and the ACM Digital Library.
Stockman, M., Leung, S., Nyland, J. & Said, H. (2006). The Information Technology Minor: Filling a Need in theWorkforce of Today. Association for Computing Machinery, Special Interest Group for Information TechnologyEducation (ACM/SIGITE) Conference '06 Proceedings and the ACM Digital Library.
Stockman, M., Nyland, J. & Weed, W. (2005). Centrally Stored and Delivered Virtual Machines in theNetworking/System Administration Lab. Association for Computing Machinery, Special Interest Group forInformation Technology Education (ACM/SIGITE) Summer 2005 Newsletter, Vol. 2 Number 2.

Name: ValiTadayon

Education:
Master of Science in Computer Science – Indiana University, 1984
Master of Arts in Economics – Indiana University, 1982
Master of Business Administration in Marketing – Indiana University, 1979

Academic experience:
1988-Present; University of Cincinnati, Cincinnati, Ohio*Associate Professor*
1991-1998, *Director of Computer & Multimedia Laboratories*
1991-1998, *Coordinator of Computer Technology Program*
1991-1998, *Coordinator of Computer Tutoring Program*
1984-1988; Wilmington College, Wilmington, Ohio*Assistant Professor*
1987-1988, *Director of the Computer Science Program*
1984-1987, *Director of Outreach Program*
1980-1984; Indiana University, Bloomington, IN*Associate Instructor*

Non-academic experience:

2011-Present; Wilson Medical Center, Wilson, North Carolina*Director of Information Services*
2006-2011; Brown County Regional HealthCARE, Georgetown, Ohio *Director of Information Technology*
2002-2006; 3M, Cincinnati, Ohio *Senior Developer*
2000-2002; Corning Incorporated, Cincinnati, Ohio *Web Developer*

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution):

University of Cincinnati
Classroom of the Future Committee, Curriculum Committee, Committee on System for Evaluating Teaching Effectiveness, Committee to review Computer resources, Search Committee for Business Technology Department Head, Nominating Committee, Library committee, Cultural Diversity Committee. Computer Advisory Committee, Search Committee for Assistant Dean, Faculty Development Committee, University Software Committee, College Orientation Committee, Committee on Student Evaluation, Committee to review Computer resources, Instructional Technology Committee.

Wilmington College
Curriculum Committee, Faculty Search Committee, Computer Science Advisory Committee

Briefly list the most important publications and presentations from the past five years : NA

Briefly list the most recent professional development activities: NA

Name: Daryl Urig

Education:
Bachelor of Fine Arts in illustration and design – Columbus College of Art and Design, Columbus, OH, 1979

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

UNIVERSITY OF CINCINNATI, DAAP, Cincinnati, Ohio
1999-2004; Academic Coordinator for Applied Digital Design

Non-academic experience:

1996-Present; Total Media Source, Cincinnati, Ohio *Creative Director*
1996-1999; Libby PerzykKathman,Cincinnati, Ohio *Senior Designer / Design Director*
1986-1996;Deskey Associates Inc., Cincinnati, Ohio *Senior Package Designer*

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years : NA

Briefly list the most recent professional development activities: NA

Name: Mike Weiner

Education:
Information Technology - Bachelor of Science, June, 2007 Member of the National Society of Collegiate Scholars

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

Non-academic experience:

9/03-9/05 HYPERQUAKE LLC, Cincinnati, Ohio *Web Developer*
6/01-9/01; 6/02-9/02 TRIVANTIS CORPORATION, Cincinnati, Ohio *Web Designer/Developer*
11/00-5/02 CROSS GATE GALLERY, Lexington, Kentucky *Webmaster*

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards:
Winner of the Silver Addy® Award of the Flash-based B2B website category for wearebent.com. (2007)

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years :

Co-presenter and private consultant for Vanderbilt University's "Online Surveys" presentation at the international conference *Medinfo*, Brisbane, Australia. (2007)

Briefly list the most recent professional development activities: NA

Name: Tom Wulf, Associate Professor of Information Technology

Education:

(80+ credits towards Ed. D. in Curriculum and Instruction not completed:
University of Cincinnati 2008)
M.S. Computer Science, University of Cincinnati, 2000
B.S. Computer Science, University of Cincinnati, 1998

Academic experience:

2001 to Present Professor of Information Technology, College of Applied Science, University of Cincinnati: Adjunct Instructor, Information Engineering Technology, College of Applied cience, University of Cincinnati

Non-academic:

1998 to 2001 Interim Lab Director, University College, University of Cincinnati,

Certifications or professional registrations: None

Current membership in professional organizations:
Cincinnati Programmers Guild

Honors and awards: None

Service activities (within and outside of the institution):
Spring 2011 Conducted Alice sessions for (6^{th} grade) Girls in Science event
Summer 2009 Conducted two Alice programming workshops for High School Students
UC College of Engineering
Peer Faculty Mentor in the UC CETL Institute Peer Faculty Mentoring program.
UC CEAS CSI Safety Director (Current)
UC CEAS CSI Merit Pay Review Committee Alternate (Current)
UC CEAS CSI Space Planning Committee (Current).
UC Faculty Senate INFOTECH Committee
UC Distance Learning Taskforce (Current)
College RPT (Two Terms)
CAS Dean's Committee on Faculty Workload (Chair)
CAS Dean's College Planning Committee
CCSC Midwest Conference Planning Committee
Paper Submission Reviews (All are for conferences):
IEEE FIE, CCSC MW, ASEE, ACM SIGITE
NSF CCLI Grant Reviewing (Two years)

Briefly list the most important publications and presentations from the past five years:

September 2007 Special K12 Workshop: "After Alice: Teaching Programming with Media Computing"
CCSC Midwest 2007 Conference, Miami University, Hamilton, OH
September 2007 Special K12 Workshop: "Teaching Introductory Web Technology"
CCSC Midwest 2007 Conference, Miami University, Hamilton, OH
September 2007 Plenary Presentation: "Adaptive Hypermedia for Education"
UC CETL September Institute. Cincinnati, OH
October 2006 Tutorial: "Constructivist Approaches for Teaching Computer Programming" CCSC Midwest 2006 Conference, DePauw University, Greencastle, IN

March 2006 Workshop: “Teaching Tips and Tricks” Greater Cincinnati Consortium of Colleges and Universities.
October 2005 Paper Presentation: “Constructivist Approaches for Teaching Computer Programming” Wulf, ACM SIGITE 2005 Conference; Newark, NJ (This paper was voted best of conference.)

Briefly list the most recent professional development activities:

- Researching J2EE Enterprise Java.
- Researching J2ME Mobile Development for Blackberry and Android.
- Researching Java Game Programming.
- Researching HTML5 and CSS3.

Name: Kris Wong

Education
08/05 - 12/07 Xavier University Cincinnati, OH M.B.A., International Business Concentration
09/99 - 03/0 University of Cincinnati Cincinnati, OH B.S., Information Engineering Technology

Academic experience:
UNIVERSITY OF CINCINNATI, OCAS/CEAS, Cincinnati, Ohio
Adjunct Instructor

Non-academic experience:
09/02 – Present Seapine Software Mason, OH Senior Software Engineer
03/02 – 06/02 University of Cincinnati Cincinnati, OH Helpdesk Technician (Co-op)

Certifications or professional registrations: NA

Current membership in professional organizations: NA

Honors and awards: NA

Service activities (within and outside of the institution): NA

Briefly list the most important publications and presentations from the past five years –: NA

Briefly list the most recent professional development activities: NA

Appendix C – Equipment

As listed in the Facilities Section, the IT program manages equipment in the Networking Lab for instruction.

6 each:

Cisco 2611XM Multiservice Router
Cisco VPN 3005 Concentrator
Cisco PIX 506E Firewall
Cisco IDS 4215 Sensor
Cisco Catalyst 2950 12 port Switch

Appendix D – Institutional Summary

1. The Institution

University of Cincinnati
2600 Clifton Avenue
Cincinnati, OH 45221

Name and title of the chief executive officer:
Gregory Williams, JD, PhD
President
University of Cincinnati
Office of the President
UNIV PAV 625, 2618 McMicken Cir
Cincinnati OH 45221
Tel: (513)556-2201; Fax: (513)556-3010
E-mail: president@uc.edu

Name and title of person submitting the self-study report:
Carlo Montemagno, PhD
Dean
Geier Professor of Engineering Education
College of Engineering and Applied Science
801 Engineering Research Center
PO Box 210018
Cincinnati, OH 45221-0018
(513) 556-2933
(513) 5656-3626 (fax)
Carlo.Montemagno@UC.Edu

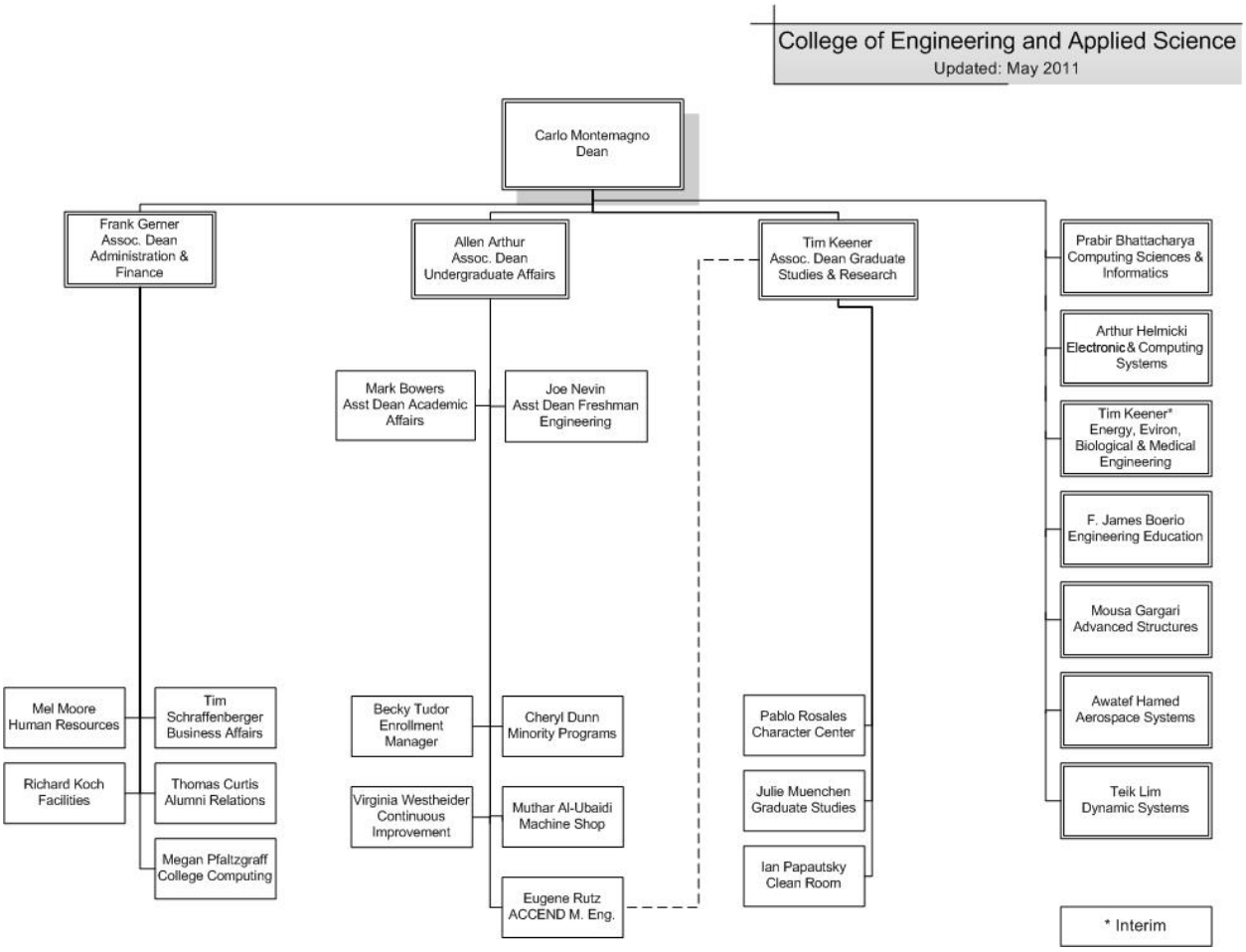
Name of ABET contact:
Mr. Allen Arthur, MS
Associate Dean for Undergraduate Affairs
College of Engineering and Applied Science
665 Baldwin Hall
Cincinnati, OH 45221
(513) 556-2736; (513) 556-5418 (fax)
Allen.Arthur@UC.Edu

The University of Cincinnati is accredited by:
Higher Learning Commission Accreditation (HLC)
North Central Association (NCA)
Initial accreditation 1913
First campus visit for accreditation review 1969
Since 1969 reaccreditation by HLC/NCA every 10 years
Last reaccreditation visit April 2009

2. Type of Control

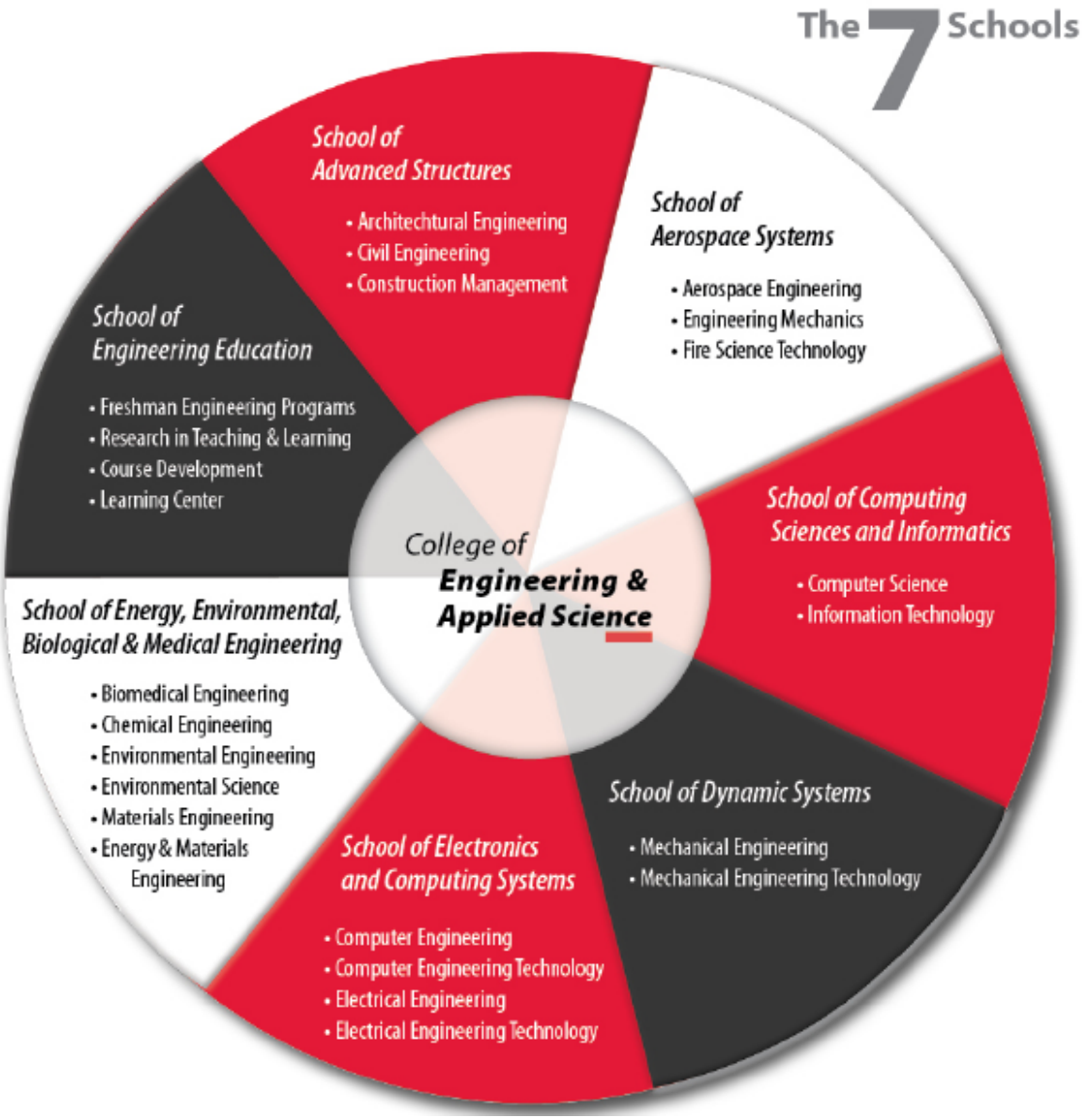
Public, State University

3. Educational Unit



CEAS Undergraduate Affairs

The College of Engineering and Applied Science (CEAS) is comprised of seven schools. Each school is composed of programs of related areas of studies and is under the direction of the School Director. Each school has program chairs responsible for the specific programs reporting under their school.



School of Advanced Structures

Director: Dr. Mousa Gargari, Professor — mousa.gargari@uc.edu
Assistant: Raena Hoskins
Business Affairs: Dawn Mays
Program Chairs:
Civil Engineering:
Dr. James Swanson, Assoc Professor — james.swanson@uc.edu
Construction Management:
Dr. Hazem Elzarka, Professor — hazem.elzarka@uc.edu
ABET Coordinator:
Dr. Anastasios Ioannides, Assoc. Professor — anastasios.ioannides@uc.edu

School of Aerospace Systems

Director: Dr. Awatef Hamed, Professor — awatef.hamed@uc.edu
Assistant: Brenda Smith, Kathy Angne
Business Affairs: Leva Wilson
Undergraduate Program Chair:
Dr. Bruce Walker, Assoc. Professor — bruce.walker@uc.edu
Program Chair/Coordinator
ABET Continuous Improvement
Dr. Paul Orkwis, Professor — paul.orkwis@uc.edu

School of Computing and Informatics

Director: Dr. Prabir Bhattacharya, Professor — bhattapr@ucmail.uc.edu
Assistant: Darla Bowen, Mary Davis
Business Affairs: Janie Runck
Program Chairs:
Computer Science: Dr. John Schlipf, Professor — john.s.schlipf@uc.edu
Information Technology:
Dr. Patrick Kumpf, Assoc Professor — patrick.kumpf@uc.edu
ABET Coordinators
Computer Science: Dr. John Schlipf, Professor — john.s.schlipf@uu.edu
Information Technology:
Mr. Mark Stockman, Assoc. Professor — mark.stockman@uc.edu

School of Dynamic Systems

Director: Dr. Teik Lim, Professor teik.lim@uc.edu
Assistant: Sue Lyons, Sharon Knecht
Business Affairs: Rhonda Christman
Undergraduate Program Chair:
Dr. Robert Rost, Professor bob.rost@uc.edu
Program Coordinator:
Dr. Muthar Al-Ubaidi , Professor muthar.al-baidi@uc.edu
ABET Coordinators
Mechanical Engineering: Dr. Jay Kim, Professor jay.kim@uc.edu
Mechanical Engineering Technology
Dr. Ahmed Elgafy, Visiting Professor elgafya@ucmail.uc.edu

School of Electronics and Computing Systems

Director: Dr. Art Helmicki, Professor arthur.helmicki@uc.edu
Assistant: Teresa Hamad, Sharon Knecht
Business Affairs: Maria Keri
Program Chairs:
Computing Engineering: Dr. Carla Purdy carla.purdy@uc.edu
Electrical Engineering: Dr. Tom Mantei, Professor thomas.mantei@uc.edu
Electrical and Computing Engineering Technology
Dr. Max Rabiee, Professor max.rabiee@uc.edu
ABET Coordinator EAC
Dr. Karen Davis, Professor karen.davis@uc.edu
ABET Coordinator TAC
Dr. Frank Zhou, Assoc. Professor xuefu.zhou@uc.edu

School of Energy, Environmental, Biological and Medical Engineering

Director: Dr. Timothy Keener, Professor
Assistant: Maureen Leigh
Business Affairs: Mary Ann Schaefer
Program Chairs:
Biomedical Engineering: Dr. Dave Butler, Professor david.butler@uc.edu
Chemical Engineering: Dr. Peter Smirniotis, Professor panagiotis.smitniotis@uc.edu
Materials Engineering: Dr. Vadim Guliants, Professor vadim.guiiants@uc.edu
ABET Coordinators:
Biomedical Engineering: Dr. Bala Haridas, Field Svc Assist. Professor
bala.haridas@uc.edu
Chemical Engineering: Dr. Rakesh Govind, Professor rakesh.govind@uc.edu

Chemical Engineering: Dr. Anastasios Angelopoulas, Asst. Professor angeloas@uc.edu
Materials Engineering: Dr. Dale Schaefer, Professor dale.schaefer@uc.edu
Materials Engineering: Dr. Donglu Shi, Professor donglu.she@uc.edu

School of Engineering Education
Director: Dr. James Boerio, Professor f.james.boerio@uc.edu
Assistant: Magnolia Modaress
ABET Coordinator: Dr. Rod Roseman, Assoc. Professor Rodney.roseman@uc.edu

Department of Engineering and Applied Science
Director: Dr. Muthar Al-Ubaidi, Professor muthar.al-ubaidi@uc.edu

CEAS ABET Committee Chairs
Dr. Anant Kukreti, Professor anant.kukreti@uc.edu
Dr. Cathy Maltbie, Research Associate cathy.maltbie@uc.edu
Ms.Virginia.Westheider, Academic Director virginia.westheider@uc.edu

CEAS ABET Committee Contacts
Allen Arthur, Associate Dean Undergraduate Affairs allen.arthur@uc.edu
Virginia Westheider, Academic Director virginia.westheider@uc.edu

1. Academic Support Units

List the names and titles of the individuals responsible for each of the units that teach courses required by the program being evaluated.

Academic Support Unit	Department Head
Biology	Dr. Guy N. Cameron
Chemistry	Dr. Bill Heineman
Communication	Dr. Teresa Sabourin
Economics	Dr. Sourushe Zandvakili
English	Dr. Russel Durst
Geology	Dr. Lewis Owen
Mathematics	Dr. Shuang Zhang
Philosophy	Dr. Robert Skipper, Jr.
Physics	Dr. Kay Kinoshita
Division of Professional Practice	Dr. Kettil Cedercreutz, Director

2. Non-Academic Units

CEAS Business Affairs

Tim Schraffenberger, MPA	Director	tim.schraffenberger@uc.edu
Alisha Campbell, MA	Asst. Director	alisha.campbell@uc.edu
Sherri Cmar	Financial Admin I	sherri.cmar@uc.edu

CEAS Student Services Staff

Administration and Staff

Joseph Nevin	Asst Dean	Advising	nevinjh@ucmail.uc.edu
Mark Bowers	Asst. Dean	Advising	bowersmt@ucmail.uc.edu
Anne Hoehn	Academic Director	Advising	anne.hoehn@uc.edu
Marsha Brandt	Admin Coord-9	Advising	brandtma@ucmail.uc.edu
Jennifer Kearney	Admin Sec 2-9	Advising	kearnej@ucmail.uc.edu
Minnie Easley	Admin Sec 1	Advising	minnie.easley@uc.edu
Kenneth Winston Simonson			
	Academic Director	E3 Minority Prog.	simonskw@ucmai.uc.edu
Cheryl Dunn	Academic Director	Minority Programs	dunnca@ucmail.uc.edu
Christine Johnson	Admin Sec 1-9	Minority Programs	johnscn@ucmail.uc.edu
Marlo Thigpen	Program Coordinator	Minority Programs	thigpeme@ucmail.uc.edu

Full time Academic Advisors

Darryl Daniels	Asst. Director	Advising	Darryl.daniels@uc.edu
Aimee Frame*	Academic Advisor	Advising	framea@ucmail.uc.edu
Arnett Glassco	Asst. Director	Advising	Arnett.glassco@uc.edu
Linda Moeller	Program Mgr.	Advising	linda.moeller@uc.edu
Kimberly Zimmerer	Academic Advisor	Advising	Kimberly.zimmerer@uc.edu

ACCEND Advisors

Eugene Rutz	Academic Director	All ACCEND Students	rutzee@ucmail.uc.edu
Mark Turner	Assoc. Professor	Aerospace Engrg.	turnermr@ucmail.uc.edu
Soon Jai Khang	Professor	Chemical Engrg.	khangsi@ucmai.uc.edu
Richard Miller	Professor	Civil Engrg.	millra@ucmail.uc.edu
Chia Yung Han	Assoc. Professor	Computer Science	han@ucmail.uc.edu
Thomas Mantei	Professor	Electrical Engrg.	manteitd@ucmail.uc.edu
Aimee Frame*	Academic Advisor	Dynamic Systems	framea@ucmail.uc.edu

Robert Rost	Assoc. Professor	Mechanical Engrg	rostr@ucmail.uc.edu
*A. Frame	Academic Advisor - Dynamic Systems and ACCEND Dynamic Systems		

Enrollment Management

Rebecca Tudor	Director	Undergraduate Enrollment	rebecca.tudor@uc.edu
Kimberly McCoy	Program Coord.	Undergrad. Enrollment	kimberly.mccoy@uc.edu
Renee Smith	Program Coord.	Undergraduate Enrollment	renee.smith@uc.edu

Facilities

Richard Koch	Director	CEAS-College Facilities	richard.koch@uc.edu
David Warmack	Coord. Bldg. Svcs.	CEAS-College Facilities	david.warmack@uc.edu

CEAS Library

Ted Baldwin	Director, Assoc. Sr. Librarian Univ. CEAS	ted.baldwin@uc.edu
Jim Clasper	Assistant	jim.clasper@uc.edu
Rose Burns	Circulations & Reserves Supervisor	rose.burns@uc.edu
Susan Hight	Technical Processing and Serials Assistant	susan.hight@uc.edu
Amal Chaturvedi	Graduate Student	amal.chaturvedi@uc.edu

Office of College Computing

Megan Pfaltzgraff	Director of College Computing	megan.pfaltzgraff@uc.edu
Lana Petrou	Information Technology Analyst	lana.petrou@uc.edu
Joseph Dowd	Operating Systems Analyst	joseph.dowd@uc.edu
Tim McGeorge	Application Analyst/Web Development	tim.mcgeorge@uc.edu
Tim Nugent	Equipment Application Specialist	timothy.nugent@uc.edu
Mark Fassler	Information Tech Analyst	mark.fassler@uc.edu
Mike Ames	Information Tech Analyst	mike.ames@uc.edu

3. Credit Unit

Currently, the University of Cincinnati operates on a quarter basis. One quarter credit hour represents one class lecture period (50 minutes) or two to three hours of laboratory work per week. Each quarter has ten full weeks of instruction plus an additional week of final exams at the end of each quarter.

In September 2012, the University of Cincinnati plans to convert to a semester system. The details related to this conversion are currently being discussed at all levels, University-wide, by College, and by each program. The curriculum content contained in the programs will remain consistent with the specific course numbers, names and semester credit units assigned being modified as necessary. As noted on UC's website, http://www.uc.edu/conversion/faqs, the following terms are important when considering this conversion process.

- **Semester Course Sequence:** Two or three courses that are intended to be taken together in order to fulfill a degree or program requirement. These courses are meant to be taken in a specific order, as the earlier courses are generally prerequisites for later courses. *Example*: course sequence Spanish 101, 102 and 103. A student would need to take those three courses, in that order, to fulfill a language requirement.
  Semester Credit Conversion: When UC converts to semesters in 2012, each transition student's credits will be multiplied by two-thirds to convert the quarter credits to semester credits. While this will cause a student's total number of credits earned to decrease by one-third, degree requirements will also decrease by one-third at that time. The student's grade point average (GPA) will **not** be affected by the conversion of quarter credit hours to semester credit hours.
  Semester Credit Hour: One semester credit hour will be awarded for a minimum of 750 minutes of formalized instruction during an academic term. Typically, students should work out-of-class on assignments an average of two hours for every one hour of formalized instruction.

Table D-1. Program Enrollment and Degree Data

Information Technology BS (IT, ITBS, IET, IETE ITT)

Academic Year	Fall Term Status	Class Standing					Bacc Total	Bacc Degrees Granted
		FR	SO	PJ	JR	SR		
05A-06U	FT	7	41		27	69	144	77
	PT	9	21		8	85	123	
06A-07U	FT	21	35		20	47	123	49
	PT	7	27		13	74	121	
07A-08U	FT	13	40		14	48	115	38
	PT	7	19		12	52	90	
08A-09U	FT	20	25		34	62	141	39
	PT	4	14		9	54	81	
09A-10U	FT	32	34		27	66	159	43
	PT	7	19		17	51	94	
10A-11U	FT	31	45		39	57	172	12
	PT	10	22		14	51	97	

Table D-2. Personnel

Information Technology	Headcount		FTE
	Full Time	Part Time	
Administrative	1	2	
Faculty (Tenure Track)	6		
Other Faculty (excluding student Assistants)		17 80%	
Student Teaching Assistants	0		
Technicians/specialists	3		
Office/Clerical Employees	1		
Others	11	19	

Report data for the program being evaluated.

1. Data on this table should be for the fall term immediately preceding the visit. Updated tables for the fall term when the ABET team is visiti9ng are to be prepared and presented to the team when they arrive.
2. For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 15 semester credit-hours (or 24 quarter credit-hours) per term of institutional course work, meaning all courses – science, humanities and social sciences, etc. For faculty members, 1 FTE equals what your institution defines as a full-time load.
3. Persons holding joint administrative/faculty positions or other combined assignments should be allocated to each category according to the fraction of the appointment assigned to that category.
4. Specify any other category considered appropriate, or leave blank.

UNIVERSITY OF CINCINNATI, COLLEGE OF APPLIED SCIENCE
OFFICE OF CAREER PLACEMENT
2007 GRADUATE REPORT

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2007 GRADUATE REPORT

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CONTACT INFORMATION

EMPLOYER CONTACT
Kimberly Zimmerer
Office of Career Placement
University of Cincinnati
College ofApplied Science
2220 Victory Parkway
Cincinnati, OH 45206
Phone: (513) 556-6571
Fax: (513) 556-4224
www.uc.edu/cas/career/
kimberly.zimmerer@uc.edu

STUDENT ADMISSION CONTACT
Office ofAdmissions
University of Cincinnati
340 University Pavilion
PO Box 210091
Cincinnati, OH 45221-0091
Phone: (513) 556-1100
Fax: (513) 556-1105
http://www.uc.edu/future/

ABOUT THE COLLEGE

The OMI College ofApplied Science was founded in 1828 as a private education institution and operated exclusively as an evening college until 1901 when day courses were converted to collegiate programs. In 1934 a cooperative education plan was initiated, the first two-year co-op program in the nation. In 1969, the College merged with the University of Cincinnati and by 1976 the first Baccalaureate Degrees were awarded.

Today, the University of Cincinnati OMI College of Applied Science sits proudly overlooking the Ohio River from one of Cincinnati's seven hills. The five-building campus houses classrooms, laboratories, high-bay areas, industry training facilities, an extensive technical library , electronic auditorium, and cradles a quaint student courtyard.

The reputation of the college for rigorous hands-on, work integrated, programs has blossomed. Students attending the school must be prepared for intense course work emphasizing mathematics, science, technology and communication skills. However, often just as meaningful, are the required curriculum-related work experiences which are designed with the school's partners in business, industry and government. While co-op assignments are made on the strength of learning potential alone, most students find that co-op income helps substantially toward paying for a college degree.

The college takes pride in the individual attention class sizes afford. Qualifying students, with various academic backgrounds, can develop toward levels of technology that have been accepted as among the best in the nation. Students most often attracted by our programs are those who like practical application.Today's technologists bring the theoretical design of architects and engineers to production. Leading to that practical base, the college uses both extensive laboratory work and experiential education.

Nationwide, employers like the formula. For the past three years 98% of the graduates desiring full-time employment have reached that goal within the first few months following graduation. For the past ten years 93% have been successful. Salaries offered compare favorably with other highly regarded technical degrees.

The report presented in this document is the outcome of the class of 2007, December through August, for majors at the College ofApplied Science still accepting new students. (This report does not include the college's Open Learning Fire Science Program.) Included are comparisons with the last ten years and descriptions of our programs, highlighting consistency and quality

UNIVERSITY OF CINCINNATI, COLLEGE OF APPLIED SCIENCE

POST-GRADUATION DECISIONS 2007

	Total number of graduates	Number Employed	Number employed in field of study	Average salary (annual)	Of those seeking, % successfully employed	Continuing Education	Entering Military Service	Plans Unstructured	Seeking Employment	**Declined to provide info.
Bachelor Degree										
Architectural Engineering Technology	15	11	11	$38,163	92%	2	0	1	1	0
Chemical Technology	5	4	4	$39,375	100%	0	0	1	0	0
Computer Engineering Technology	10	8	8	$49,640	80%	0	0	0	2	0
Construction Management	28	26	25	$47,409	96%	1	0	0	1	0
Culinary Arts & Science	2	2	2	N/A	100%	0	0	0	0	0
Electrical Engineering Technology	9	8	8	$48,006	100%	1	0	0	0	0
Horticulture	3	3	3	N/A	100%	0	0	0	0	0
Information Technology	30	29	28	$43,229	100%	0	0	1	0	0
*Computer Science Technology	1	1	1	N/A	100%	0	0	0	0	0
*Information Engineering Tech	11	10	9	$43,667	91%	0	0	0	1	0
*Info Tech-Business Track	4	4	4	N/A	100%	0	0	0	0	0
*Info Tech-Technology Track	4	4	4	N/A	100%	0	0	0	0	0
Mechanical Engineering Technology	42	42	41	$49,792	100%	0	0	0	0	0
TOTAL	**164**	**152**	**148**		**97%**	**4**	**0**	**3**	**5**	**0**
Associate Degree										
Architectural Technology	0	0	0	N/A	--	0	0	0	0	0
Business Management Technology	5	2	1	N/A	100%	3	0	0	0	0
Chemical Technology	3	1	1	N/A	100%	2	0	0	0	0
Civil & Construction Engineering Tech.	31	4	4	N/A	100%	27	0	0	0	0
Electrical Engineering Technology	2	2	2	N/A	100%	0	0	0	0	0
Information Technology	4	4	4	N/A	100%	0	0	0	0	0
*Computer Technology	1	0	0	N/A	0%	0	0	0	1	0
Manufacturing Engineering Technology	10	3	3	N/A	100%	7	0	0	0	0
Mechanical Engineering Technology	14	9	8	$39,500	100%	5	0	0	0	0
TOTAL	**70**	**25**	**23**		**96%**	**44**	**0**	**0**	**1**	**0**

*Major no longer offered.

**Every student was contacted via phone, email, in-person, or information form. Those students declining to provide information were only included in the "Total number of graduates" column.

UNIVERSITY OF CINCINNATI, COLLEGE OF APPLIED SCIENCE

AVERAGE ENTRY-LEVEL SALARIES (ANNUAL)
1998-2007

	2007 SALARIES												
Bachelor Degree	**Number Employed**	**Average Salary**	**Low Salary**	**High Salary**	**2006**	**2005**	**2004**	**2003**	**2002**	**2001**	**2000**	**1999**	**1998**
Architectural Engineering Technology	11	$38,163	$34,000	$44,000	$36,571	$33,939	$35,136	$35,750	$34,738	$34,958	$32,000	$32,153	$31,069
Chemical Technology	4	$39,375	$32,000	$44,000	$37,250	$37,027	$31,167	N/A	N/A	$34,847	N/A	--	$29,100
Computer Engineering Technology	8	$49,640	$38,000	$60,000	$46,857	$38,833	N/A						
Construction Management	26	$47,409	$40,000	$55,000	$44,958	$43,285	$43,074	$43,927	$43,049	$41,793	$40,192	$37,590	$35,602
Culinary Arts & Science	2	N/A	N/A	N/A	N/A								
Electrical Engineering Technology	8	$48,006	$37,440	$55,000	$43,630	$45,946	$51,429	$41,667	$44,938	$43,045	$43,260	$36,349	$37,555
Horticulture	3	N/A	N/A	N/A	N/A								
Information Technology	29	$43,229	$18,000	$62,400	$43,500								
*Computer Science Tech	1	N/A	N/A	N/A	$53,800								
* Information Engineering Tech	10	$43,667	$38,000	$50,000	$43,113	$42,636	$38,301	$36,049	$41,483	$40,558	$43,800	--	--
* Information Tech-Bus Track	4	N/A	N/A	N/A	N/A								
* Information Tech-Tech Track	4	N/A	N/A	N/A	N/A								
Mechanical Engineering Technology	42	$49,792	$38,200	$70,000	$48,778			$42,750	$40,833	$42,225	$42,733	$39,600	$39,457

*Major no longer offered at CAS

Associate Degree	**Number Employed**	**Average Salary**	**Low Salary**	**High Salary**	**2006**	**2005**	**2004**	**2003**	**2002**	**2001**	**2000**	**1999**	**1998**
Architectural Technology	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	--
Business Management Technology	2	N/A	N/A	N/A	N/A								
Chemical Technology	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$28,600	N/A	--	$27,890
Civil & Construction Engineering Tech.	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Electrical Engineering Technology	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$27,500
Information Technology	4	N/A	N/A	N/A	N/A								
*Computer Technology	0	N/A	N/A	N/A	N/A								
Manufacturing Engineering Technology	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mechanical Engineering Technology	9	$39,500	$30,000	$45,000	N/A	N/A	N/A	N/A	N/A	$35,333	N/A	N/A	$28,500

ARCHITECTURAL ENGINEERING TECHNOLOGY

Architectural Engineering Technology (AET) program synthesizes the technical, functional and form elements of building construction. The underlying philosophy of the program is to create production oriented graduates who can work with architects and their supporting engineering staffs of structural, mechanical, and electrical engineers. The academic thrust of the program is applied technology - how to produce the job. Emphasis is always on the integration of disciplines and the professional communication of decisions.

The Architectural Engineering Technology *Bachelor of Science* degree is ABET accredited. This allows a graduate to pursue registration as a professional engineer. If a student is interested in pursuing registration as a professional architect, a professional degree will be required. This professional degree is usually earned as a Masters at an accredited school of architecture.

An important component of the Architectural Engineering Technology degree is the co-op work experience. This program places the student in a paying job for six quarters between the freshman and senior years. This co-op component requires five years to earn a baccalaureate degree.

For those who are interested in careers in the residential design market, the Architectural Technology program may be adequate. This program leads to an *Associate of Science* degree. Two quarters of co-op and six quarters of academics are required for this degree. Graduation would occur in either August or December.

A dual degree capability exists in the Department of Construction Science. In six years a student may achieve Bachelor of Science degrees in both Architectural Engineering Technology and Construction Management.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	0
Employed Relevant	0
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

ARCHITECTURAL ENGINEERING TECHNOLOGY

BACHELOR DEGREE GRADUATES

Total number of graduates	15
Employed Relevant	11
Employed Non-relevant	0
Continuing Education	2
Entering Military Service	0
Plans Unstructured	1
Seeking Employment	1
Declined to Provide Information	0
Average yearly salary	$38,163

RELEVANT EMPLOYERS	POSITIONS
Brown and BillsArchitects	Project Manager
Burgess + Niple, Inc.	Planning and Design
DNK Architects	Architect
FRCH (3)	Project Coordinator
	Job Captain
	Professional
K4 Architecture	Architectural Intern
KTDesign Group	Project Coordinator
Richard Fleischman + PartnersArchitects, Inc.	Draftsman
Tilsley andAssociates Architects	Architectural Associate/Designer
Turner Construction	Field Engineer

NON-RELEVANT EMPLOYERS	POSITIONS
Fidelity Investments	401 (K) Plan & Non-qualified Retirement Plan Specialist

CONTINUING EDUCATION INSTITUTIONS	MAJORS
UC, College ofArts and Sciences	BS-Construction Management
UC, DAAP	MA-Architecture

BUSINESS MANAGEMENT TECHNOLOGY

This career-oriented associate degree program is designed to prepare students for supervisory and administrative positions at the entry and mid-management levels in various areas of business and industry. The program offers preparation for initial positions in accounting, financial services, and marketing and undertakes to provide skills and attitudes conducive to advancement. It may also be considered an exploratory program to awaken the student's interest in some area of business in which he/she may later specialize.

Many opportunities are available to graduates of this program. Career options available vary according to interests, needs, and abilities.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	5
Employed Relevant	1
Employed Non-relevant	1
Continuing Education	3
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS	POSITIONS
Heids Bowling Lanes	Night Manager

NON-RELEVANT EMPLOYERS	POSITIONS
OneStop Entertainment	Owner

CONTINUING EDUCATION INSTITUTIONS	MAJORS
Aveda Fredric's Institute	Cosmetology
UC, Clermont College	Undecided
UC, College of Arts and Sciences	BA-Organizational Leadership

CHEMICAL TECHNOLOGY

The Chemical Technology Program is focused on career options in chemistry-based fields of interest. The emphasis throughout the curriculum is on chemical analysis, both qualitative and quantitative methods. Students receive instruction and practice in a continuum across sample preparation, wet chemical methods, chemical instrumentation, and instrumental methods of chemical analysis. The bachelor program requires mandatory six quarters of cooperative work and the associate program requires two. This experience enhances students' maturity and work ethic, and broadens and sharpens their laboratory skills. It also familiarizes them with the culture of industry as compared to that in school.

The bachelor's degree also provides a good background for advanced study in such fields as biochemistry, botany, business management, chemical engineering, dentistry forensic chemistry, geochemistry, geology, medicinal chemistry, medicine, metallurgy, microbiology, museum science, oceanography, patent law, pharmacology, toxicology, veterinary medicine and zoology

ASSOCIATE DEGREE GRADUATES

Total number of graduates	3
Employed Relevant	1
Employed Non-relevant	0
Continuing Education	2
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS
Shepherd Chemical

POSITIONS
Lab Technician

CONTINUING EDUCATION INSTITUTIONS
Ohio State University
UC, College of Applied Science

MAJORS
BA-Chemistry
BS-Chemical Technology

CHEMICAL TECHNOLOGY (Con't)

BACHELOR DEGREE GRADUATES

Total number of graduates	5
Employed Relevant	4
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	1
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$39,375

RELEVANT EMPLOYERS	POSITIONS
Barrett Paving Materials	Laboratory Engineer
International Paper	Analytical Technician
PPG Industries	Lab Technician
Sun Chemical	Lab Technician

COMPUTER ENGINEERING TECHNOLOGY

The Bachelor of Science in Computer Engineering Technology program integrates elements of both computer technology and electrical engineering technology. It is this combination that sets it apart from programs in computer science. Each lecture course has an accompanying laboratory in order to give students hands-on experience. The emphasis on the practical sets the program apart from one in computer engineering.

The program incorporates computer skills, including programming, knowledge of operating systems, networking, application and troubleshooting. It emphasizes knowledge of electrical electronic principles required to understand hardware applications. Communication skills are also stressed. A capstone experience is required of each student in the form of a Senior Design project.

BACHELOR DEGREE GRADUATES

Total number of graduates	10
Employed Relevant	8
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	2
Declined to Provide Information	0
Average yearly salary	$49,640

RELEVANT EMPLOYERS	POSITIONS
Alexander & Associates	Power Controls
AOL Time Warner	Technical Security Engineer
Infimatic LLC of MAG-IAS Group	Software Engineer (2)
	ITI Systems Support
London Software Company	Unknown
Ultimate Insurance Resource	System Administrator/Programmer
Valcom	Contract Position

CONSTRUCTION MANAGEMENT

The *Bachelor of Science* degree in Construction Management (CM) is a comprehensive five year cooperative education program which is aimed at developing project managers who have a strong understanding of management principles and application to today's complex construction projects. The curriculum is based on a DESIGN-CONSTRUCTION-MAINTAIN continuum. The program is accredited by the American Council on Construction Education (ACCE).

Upon completion of the degree program, students would have acquired skills in communication, problem solving, planning, control and resource management. Other support knowledge acquired in the degree program include constructability, contracts, finance, safety and the design of construction operations. A unique component of the construction management degree is the co-op work experience. This program places the student in a rewarding, paying job for six quarters between the freshman and senior years. A dual degree capability exists in the Department of Construction Science. In six years a student may achieve *Bachelor of Science* degrees in **both** Architectural Engineering Technology and Construction Management.

Students who only intend to acquire the technical skills required in construction technology may acquire, after eight quarters in the program, an *Associate of Science* degree in Civil and Construction Engineering Technology. The Civil and Construction Engineering Technology degree is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. This associate degree prepares students to work in the production aspect of construction projects. Typically, the students have skills in surveying, estimating, computer-aided drafting, material testing and building inspection. Two quarters of cooperative education are required before receiving this degree.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	31
Employed Relevant	4
Employed Non-relevant	0
Continuing Education	27
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS
Barrett Paving Materials
Dolibda Construction
Peck Hannaford & Briggs
Turner Construction

POSITIONS
Quality Control
Carpenter
Project Manager
Field Engineer

CONTINUING EDUCATION INSTITUTIONS
Ohio State University
UC, College of Applied Science

MAJORS
BA-Economics
BS-CM (26)

CONSTRUCTION MANAGEMENT

BACHELOR DEGREE GRADUATES

Total number of graduates	28
Employed Relevant	25
Employed Non-relevant	1
Continuing Education	1
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	1
Declined to Provide Information	0
Average yearly salary	$47,409

RELEVANT EMPLOYERS	POSITIONS
Balfour Beatty	Project Engineer Field
Bovis Lend Lease (4)	Assistant Project Engineer
	Project Engineer/Field Engineer
	Field Engineer
	Field Engineer
Bray-Arnsperger Excavating, Inc.	Project Manager
Danis Building Construction	Project Engineer
Dugan & Meyers	Project Engineer
Holden Excavating	Estimator/Project Manager
John R. Jurgensen Co. (2)	Project Manager/Estimator
	Project Manager
Kroger	Unknown
Messer Construction (2)	Project Engineer (2)
Miller Valentine Group	Assistant Construction Manager
Moss & Associates (2)	Project Engineer (2)
Paul Hemmer Companies	Project Manager
Quandel (2)	Project Engineer (2)
Skanska USA Building, Inc.	Assistant Project Engineer
Turner Construction (4)	Field Engineer (4)

NON-RELEVANT EMPLOYERS	POSITIONS
Dayton Freight Lines	Management Trainee

CONTINUING EDUCATION INSTITUTIONS	MAJORS
UC, College of Engineering	BS-Civil Engineering

CULINARY ARTS & SCIENCE

The University of Cincinnati's College of Applied Science (CAS) and Cincinnati State Technical and Community College offer a new baccalaureate degree in Culinary Arts and Science. This unique dual enrollment program has students spending their first two years at Cincinnati State and then completing their bachelor's degree at UC. This is the first culinary program of its kind in Ohio and only the third in the U.S.

This arrangement provides students with a seamless pathway to completing a bachelor's degree that begins as a student enters the program at Cincinnati State and continues through to degree completion at the University of Cincinnati.

The new program immerses students in the culinary arts and then broadens their education in the science of food. The culinary arts features the creativity exhibited by a chef in completing a meal. This is the focus for students at Cincinnati State where students complete the initial two years and earn an associate degree. Then, students shift to UC to complete the baccalaureate program focusing on the science of food, its components and how they react to heat, cooling, storage and other variables.

Those enrolled in the program are considered students of both UC and Cincinnati State. Even while working toward an associate's degree at Cincinnati State, students are able to live in UC residence halls and participate in activities open to UC students.

BACHELOR DEGREE GRADUATES

Total number of graduates	2
Employed Relevant	2
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS

Heinz
Miami University

POSITIONS

Unknown
Exec Chef of Culinary Operations

ELECTRICAL ENGINEERING TECHNOLOGY

The Bachelor curriculum supports advanced technical education needs, including factory automation of regional industries. The program is structured to develop expertise in five discipline areas of computer applications, process control, instrumentation design, electrical power distribution and data communications. The Associate degree program provides a strong foundation in mathematics, science, and fundamental electrical subjects with specialization in electronic devices, circuits, and power apparatus. Emphasis is on digital electronics with one-third of the contact hours involved in laboratory practice.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	2
Employed Relevant	2
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS	POSITIONS
Instant Tax Service	Network Admin/Cable Tech Head
Machine Drive Company	Unknown

BACHELOR DEGREE GRADUATES

Total number of graduates	9
Employed Relevant	8
Employed Non-relevant	0
Continuing Education	1
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$48,006

RELEVANT EMPLOYERS	POSITIONS
Alexander and Associates, Inc. (3)	Electrical Design Engineer
	Engineer
	Design Engineer
Flight Safety International	Senior Flight SimTech
ITT Aerospace	Hardware Engineer
Mobilcomm	Field Service Engineer
Sargent & Lundy	Associate I
SEC-TRON Inc.	Project Manager

CONTINUING EDUCATION INSTITUTIONS	MAJORS
Xavier University	MBA-Executive

HORTICULTURE

An art as old as the Garden of Eden and a science as new as tomorrow, horticulture deals with the development, growth, distribution, and utilization of fruits, vegetables, and ornamental plants. Horticulture is a hobby to some and a profession to others. It enriches our lives with nutritious, flavorsome foods and the aesthetics and utility of ornamental plants. In the Horticulture program you will learn the relation ships between horticulture and natural, ecological processes, and develop a responsible horticultural approach toward the environment.

Courses in the curriculum have been partitioned into groups of similar courses called clusters. Requirements for the Bachelor of Science in Horticulture (Scientific Track or Business Track) are listed below.

Career opportunities within the Horticulture/Green Industry are excellent. In particular, the degree can lead to positions in the environment, landscape, and lawn care fields, as well as within education and government. The baccalaureate degree provides opportunities for further career advancement and personal satisfaction.

BACHELOR DEGREE GRADUATES

Total number of graduates	3
Employed Relevant	3
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT-EMPLOYERS

Hyde Park Landscape
Kenton County Cooperative Extension Service
Legendary Run Golf Course

POSITIONS

Landscape Designer
Horticulture Technician
Assistant Superintendent

INFORMATION TECHNOLOGY

Information Technology (IT) in its broadest sense encompasses all aspects of computing technology. IT, as an academic discipline, focuses on meeting the needs of users within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies. Information Technology is an academic discipline distinct from computer engineering, computer science and management information systems. IT encompasses software engineering and development, computer networking and communications, Web technologies, computer security, database management, and digital media technologies. The IT professional is hired by organizations of all sizes in all industries. Students will receive a broad education across the IT spectrum as well as technical specialization in the areas of their choice.

The IT degree at the College of Applied Science offers a Bachelor and Associate degree option in both the day and evening schedules. Students will choose a primary track specialization within IT (Software Development, Networking, or Web Technologies) and BS students will also choose a secondary track specialization (Software Development, Networking, Web Technologies, Database or Digital Media). Co-op experience is a vital part of the IT curriculum; all students will work as a student professional in alternating quarters starting in their second year of study. BS students will co-op five quarters and AS students two quarters. In addition to co-op, students at the College of Applied Science learn by experience through the integration of intensive, hands-on activities built into the courses and through the Senior Design project completed in the final year of study

ASSOCIATE DEGREE GRADUATES

Total number of graduates	4
Employed Relevant	4
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS

The Christ Hospital
University of Cincinnati
Unknown
Valcom (Duke Energy)

POSITIONS

System Administrator
IT Analyst
Unknown
UNIX Administration

INFORMATION TECHNOLOGY (Con't)

BACHELOR DEGREE GRADUATES

Total number of graduates	30
Employed Relevant	28
Employed Non-relevant	1
Continuing Education	0
Entering Military Service	0
Plans Unstructured	1
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$43,229

RELEVANT EMPLOYERS	POSITIONS
Auglaize County NeilArmstrong Airport	Manager
Bent LLC	Director of Development/Principal
BGI Temporary Services	Contractor-UC, UCIT
Cincy Web Design	Developer/Designer
Citigroup (2)	IT Security Analyst
	Analyst for Information Security
Computer Science	Customer Support Associate/SR
ESPN	Full-time Position
Fifth Third Bank	Help Desk Technician
FTJ Fund Choice	Application Developer
General Electric (2)	Info Mgmt Leadership Prog (2)
Gleason M&M Precision	Software Engineering Technician
Kendle International	Test Analyst
Lucrum, Inc	Solutions Developer
National City	Project Manager
PEDCO E & A	Full-time Position
Rite Track Equipment	IT Assistant
Robert Half Technology	Contractor
SAEC	Software Developer
Sibco Building Products	System Administrator
TEKSystems	Contractor
The Kroger Company	Integration Analyst
Truck Cab MFG	Unknown
University of Cincinnati (2)	Equipment Application Specialist
	Applications Analyst
Wells Fargo	Leadership Development Program
Wyoming High School	Building Technology Manager

NON-RELEVANT EMPLOYERS	POSITIONS
Microcenter	Sales

PREVIOUS MAJORS FROM THE IT DEPARTMENT

When the Information Technology degree was created, the IT Department at the College of Applied Science stopped accepting students into the following majors: Computer Science Technology, Computer Technology, Information Engineering Technology, and Information Technology-Business or Technical Track. Students were given the option to transfer to this new major or complete their current major subject to graduation deadlines. Listed below is the graduate information from students electing to remain in their original majors.

COMPUTER SCIENCE TECHNOLOGY

BACHELOR DEGREE GRADUATES

Total number of graduates	1
Employed Relevant	1
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS	POSITIONS
Signalysis	Software Developer

COMPUTER TECHNOLOGY

ASSOCIATE DEGREE GRADUATES

Total number of graduates	1
Employed Relevant	0
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	1
Declined to Provide Information	0
Average yearly salary	N/A

INFORMATION ENGINEERING TECHNOLOGY

BACHELOR DEGREE GRADUATES

Total number of graduates	11
Employed Relevant	9
Employed Non-relevant	1
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	1
Declined to Provide Information	0
Average yearly salary	$43,667

RELEVANT EMPLOYERS	POSITIONS
Hixson	Systems Administrator
Jenzabar, Inc.	Network Administrator
Resurgent Capital Services	Data Analyst
Seapine Software	QA Analyst
Siemens IT Solutions	NAFS Mountain States Supervisor
University of Cincinnati (3)	Info Tech Analyst (2)
	Application Analyst
Verizon Communications Inc.	Web and Database Administrator

NON-RELEVANT EMPLOYERS	POSITIONS
Catholic Health Initiatives	Account Mng Clinical Engineering

INFORMATION TECHNOLOGY - BUSINESS TRACK

BACHELOR DEGREE GRADUATES

Total number of graduates	4
Employed Relevant	4
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS	POSITIONS
Duke Energy	Project Manager
United Healthcare	Director, Business Technology
University of Cincinnati	IT Analyst
Vertical Solutions, Inc.	Director of Technical Services

INFORMATION TECHNOLOGY - TECHNICAL TRACK

BACHELOR DEGREE GRADUATES

Total number of graduates	4
Employed Relevant	4
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS	POSITIONS
Children's Hospital	Application Specialist
Great American Insurance	Business Analyst
Media Prowess/Katwomanofsteele	Self-Employed
Saralee	Technical Support Analyst

MANUFACTURING ENGINEERING TECHNOLOGY

The *Associate degree* in Manufacturing EngineeringTechnology is designed to meet the needs of industrial organizations in Ohio and throughout the nation.

The program is devised to develop strength in analytical reasoning, understanding of the scientific basis for manufacturing, fundamental manufacturing and product technologies, and effective written and oral communications. Graduates have studied all aspects of automation used in manufacturing. The program is designed to raise questions and help explore the interactions between technology and society. Computers are used for design, control, planning, analysis and communications functions as a matter of course.

Full-time students follow a cooperative work experience schedule.Two of the eight curriculum quarters are devoted to the co-op requirement. Employment opportunities include: manufacturing methods analyst, quality technician, and management trainee.

MANUFACTURING ENGINEERING TECHNOLOGY
ASSOCIATE DEGREE GRADUATES

Total number of graduates	10
Employed Relevant	3
Employed Non-relevant	0
Continuing Education	7
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS
Duke Energy
Parkway Products
R.A. Jones

POSITIONS
Engineer
Quality Engineer
Product Engineer

CONTINUING EDUCATION INSTITUTIONS
UC, College ofApplied Science

MAJORS
BS-Mechanical Eng Technology (7)

MECHANICAL ENGINEERING TECHNOLOGY

The MET curriculum focuses on design, manufacturing and energy technologies. The academic instruction covers the relevant theory needed in each area with core courses being integrated with extensive laboratory assignments. This combination of hands-on experience with ample academic instruction is the main advantage of the MET curriculum. The MET department takes mechanical design education all the way to the level of technology!

The MET program's dynamic, hands-on approach is coupled with rigorous academic preparation, both for the professional engineers (PE) exam and for enrollment in prestigious MSc and MBA programs (allowing students to pursue more advanced degrees, such as the PhD). MET graduates routinely start their professional careers within the product development, production development, energy production and energy distribution functions of industry Employers are especially attracted by the METgrad's ability to take entire projects from the design stage all the way through to implementationAs a result, the majority find themselves independently managing industrial projects during their first professional years. Many choose to move to upper management later on in their careers.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	14
Employed Relevant	8
Employed Non-relevant	1
Continuing Education	5
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$39,500

RELEVANT EMPLOYERS	POSITIONS
Burgess + Niple, Inc.	Mechanical Designer
Campbell Hausfeld	Engineering Technician
Emerald Hilton-Davis	Ice Plant Engineer
ITT/KONI	R&D Associate
National Oilwell Varco	Mechanical Design Engineer
REPS Resource	Project Leader
Triumpf Engineering	Mechanical Designer
Unknown	Unknown

NON-RELEVANT EMPLOYERS	POSITIONS
Unknown	Unknown

CONTINUING EDUCATION INSTITUTIONS	MAJORS
UC, College ofApplied Science	AAS-Manuf. Eng. Technology (1)
	BS-Mechanical Eng Technology (4)

MECHANICAL ENGINEERING TECHNOLOGY (Con't)
BACHELOR DEGREE GRADUATES

Total number of graduates	42
Employed Relevant	41
Employed Non-relevant	1
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$49,792

RELEVANT EMPLOYERS	POSITIONS
Advanced Testing Laboratory	Test Technician (2)
Air Technologies	Application Engineer
Alexander & Associates (2)	Mechanical Engineer
	Design Engineer
Babcock Willcox	Engineer I
CDI Aerospace	Engineer I
Cummins	Unknown
Die Craft Machining and Engineering (2)	Engineering Manager
	Manufacturing Engineer
DRT Mfg, Co.	Design Engineer
Duke Energy (2)	Engineer (2)
Eastman Kodak	Mechanical Engineer
Edwards Products	Design Engineer
Ellis & Watts International	Senior Engineering Technician
FKI Logistex	Mechanical Engineer
Fujitec America, Inc.	Project Manager
GBI	Product Specialist
General Electric	Engineer Designer
General Tool	Manufacturing Engineer
Hixson	Unknown
Honda	Technical Specialist
Messer Construction	Systems Engineer
Meyer Tool	Project Manager (3)
Peck Hannaford & Briggs (2)	Project Engineer
	Project Manager/HVAC Designer
Procter & Gamble	R & D Engineer
	Unknown
	Packaging Engineer
Procter & Gamble Baby Care	Research Engineer
Rolls Royce	Graduate Packaging Eng-Mech
Storm Engineering	Field Engineer
StreamKey	Applications Engineer
Toyota Motor Company	EIT
U.S. EPA	Unknown
Unknown (2)	Unknown (2)
Valco Cincinnati	Unknown

NON-RELEVANT EMPLOYERS	POSITIONS
Restaurant Associates of Cincinnati	Chief Information Officer

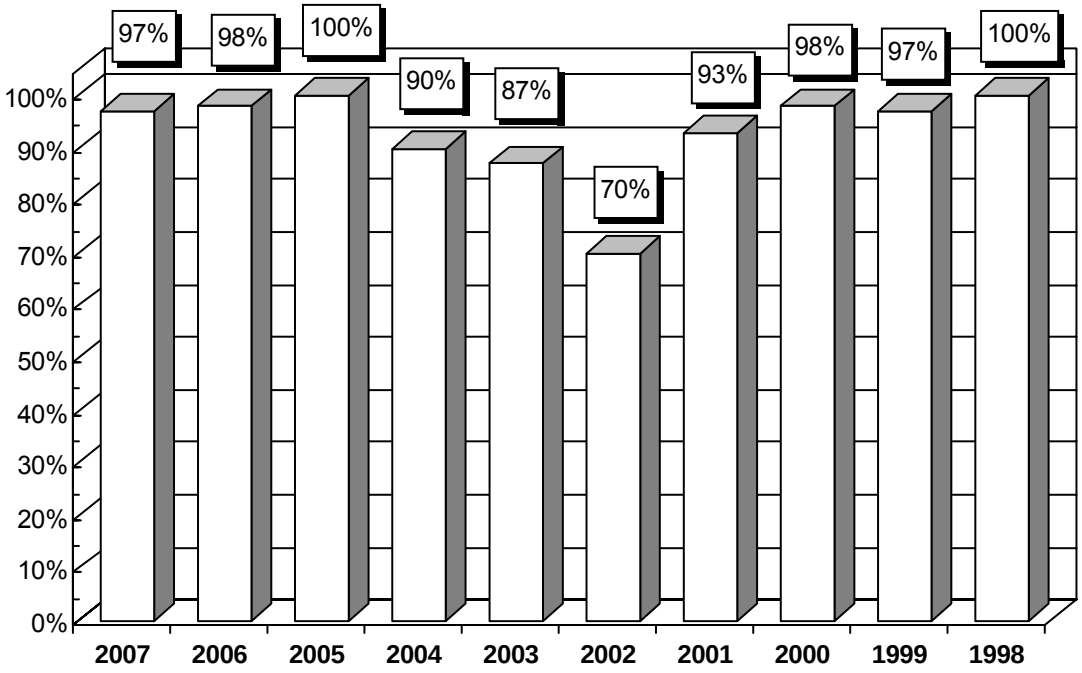
UNIVERSITY OF CINCINNATI COLLEGE OF APPLIED SCIENCE
SUCCESSFUL JOB DEVELOPMENT OF STUDENTS DESIRING EMPLOYMENT 1998-2008

ASSOCIATE DEGREE	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
Architectural Technology	**N/A**	N/A	---	---	---	100%	---	---	---	100%
Business Management Tech.	**100%**	N/A	100%							
Chemical Technology	**100%**	N/A	---	---	---	100%	100%	---	---	100%
Civil & Construction Eng. Tech	**100%**	N/A	100%	---	---	---	100%	100%	100%	100%
Electrical Eng. Tech.	**100%**	N/A	---	---	---	60%	100%	100%	100%	100%
Information Technology	**100%**	N/A								
*Computer Technology	**0%**									
Manufacturing Eng. Tech	**100%**	N/A	100%	---	---	100%	100%	100%	100%	100%
Mechanical Eng. Tech	**100%**	N/A	100%	100%	100%	67%	100%	100%	100%	100%

BACHELOR DEGREE	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
Architectural Eng. Tech.	**92%**	100%	100%	100%	88%	77%	87%	100%	100%	100%
Chemical Technology	**100%**	100%	100%	100%	100%	67%	100%	100%	100%	100%
Computer Eng. Tech.	**80%**	100%	100%	67%						
Construction Management	**96%**	100%	100%	100%	95%	86%	100%	100%	100%	100%
Culinary Arts & Science	**100%**									
Electrical Eng. Tech.	**100%**	93%	100%	91%	73%	100%	100%	94%	100%	100%
Horticulture	**100%**	100%	100%							
Information Technology	**100%**	96%	100%							
*Computer Science Tech.	**100%**									
*Information Eng. Tech	**91%**									
*Info Tech-Business Track	**100%**									
*Info Tech-Technical Track	**100%**									
Mechanical Eng. Tech.	**100%**	97%	100%	92%	85%	36%	81%	100%	92%	100%

UNIVERSITY OF CINCINNATI COLLEGE OF APPLIED SCIENCE
SUCCESSFUL JOB DEVELOPMENT
OF STUDENTS DESIRING EMPLOYMENT - 1998-2007

ALL MAJORS COMBINED



2008/2009 College of Applied Science Graduate Placement Report

Class of 2008/2009	Major	Total Grads	Employed Relevant and Nonrelevant	Seeking	Con't Education	Military	Plans Unstructured	Unknown/ No Response	Percentage Employed of those Seeking	Average Salary	High Salary	Low Salary
Bachelor	AET	19	5	7	1	1	0	5	42%	$ 48,950	$ 60,900	$ 42,269
Associate	ARTN	4	0	1	2	0	0	1	0%			
Bachelor	CAS	4	2	2	0	0	0	0	50%	N/A	N/A	N/A
Bachelor	CET	5	3	2	0	0	0	0	60%	N/A	N/A	N/A
Associate	CHTN	4	0	0	4	0	0	0				
Bachelor	CM	49	29	7	1	0	0	12	81%	$ 50,536	$ 59,000	$ 41,000
Bachelor	CTN	16	6	5	1	0	1	3	55%	$ 46,225	$ 51,000	$ 35,000
Associate	CVTN	23	0	0	22	0	0	1				
Associate	EETN	4	0	0	4	0	0	0				
Bachelor	ET	10	2	6	0	0	1	1	25%	N/A	N/A	N/A
Bachelor	FHM	4	1	2	0	0	0	1	33%	N/A	N/A	N/A
Bachelor	HORT	6	2	1	0	0	0	3	67%	N/A	N/A	N/A
Associate	IT	1	0	0	1	0	0	0				
Bachelor	IT	35	22	6	0	0	1	6	79%	$ 44,350	$ 60,000	$ 31,000
Bachelor	MET	33	16	13	0	0	1	3	55%	$ 49,821	$ 67,000	$ 33,000
Associate	METN	6	0	1	5	0	0	0	0%	N/A	N/A	N/A
Associate	MFET	3	0	0	3	0	0	0				
TOTAL		***226***	***88***	***53***	***44***	***1***	***4***	***36***	62%	***$ 47,976***	***$ 59,580***	***$36,454***

UNIVERSITY OF CINCINNATI, COLLEGE OF APPLIED SCIENCE
OFFICE OF CAREER PLACEMENT
2008 GRADUATE REPORT

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2008 GRADUATE REPORT

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CONTACT INFORMATION

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ABOUT THE COLLEGE

The OMI College ofApplied Science was founded in 1828 as a private education institution and operated exclusively as an evening college until 1901 when day courses were converted to collegiate programs. In 1934 a cooperative education plan was initiated, the first two-year co-op program in the nation. In 1969, the College merged with the University of Cincinnati and by 1976 the first Baccalaureate Degrees were awarded.

Today, the University of Cincinnati OMI College of Applied Science sits proudly overlooking the Ohio River from one of Cincinnati's seven hills. The five-building campus houses classrooms, laboratories, high-bay areas, industry training facilities, an extensive technical library , electronic auditorium, and cradles a quaint student courtyard.

The reputation of the college for rigorous hands-on, work integrated, programs has blossomed. Students attending the school must be prepared for intense course work emphasizing mathematics, science, technology and communication skills. However, often just as meaningful, are the required curriculum-related work experiences which are designed with the school's partners in business, industry and government. While co-op assignments are made on the strength of learning potential alone, most students find that co-op income helps substantially toward paying for a college degree.

The college takes pride in the individual attention class sizes afford. Qualifying students, with various academic backgrounds, can develop toward levels of technology that have been accepted as among the best in the nation. Students most often attracted by our programs are those who like practical application.Today's technologists bring the theoretical design of architects and engineers to production. Leading to that practical base, the college uses both extensive laboratory work and experiential education.

Nationwide, employers like the formula. For the past three years 97% of the graduates desiring full-time employment have reached that goal within the first few months following graduation. For the past ten years 94% have been successful. Salaries offered compare favorably with other highly regarded technical degrees.

The report presented in this document is the outcome of the class of 2008, December through August, for majors at the College ofApplied Science still accepting new students. (This report does not include the college's Open Learning Fire Science Program.) Included are comparisons with the last ten years and descriptions of our programs, highlighting consistency and quality

UNIVERSITY OF CINCINNATI, COLLEGE OF APPLIED SCIENCE

POST-GRADUATION DECISIONS 2008

	Total number of graduates	Number Employed	Number employed in field of study	Average salary (annual)	Those desiring employment, % successfully employed	Continuing Education	Entering Military Service	Plans Unstructured	Seeking Employment	**Declined to provide info.
Bachelor Degree										
Architectural Engineering Technology	19	14	14	$40,250	82%	2	0	0	3	0
Chemical Technology	10	9	9	$39,025	100%	0	0	1	0	0
Computer Engineering Technology	8	7	7	$51,667	88%	0	0	0	1	0
Construction Management	38	34	34	$49,407	100%	2	0	2	0	0
Culinary Arts & Science	7	6	4	N/A	86%	0	0	0	1	0
Electrical Engineering Technology	18	17	16	$54,167	94%	0	0	0	1	0
Horticulture	3	3	3	$28,600	100%	0	0	0	0	0
Information Technology	24	22	22	$48,987	100%	0	0	2	0	0
*Computer Science Technology	1	1	1	N/A	100%	0	0	0	0	0
*Information Engineering Tech	5	5	5	N/A	100%	0	0	0	0	0
*Info Tech-Business Track	4	4	4	N/A	100%	0	0	0	0	0
*Info Tech-Technology Track	5	4	4	N/A	80%	0	0	0	1	0
Mechanical Engineering Technology	33	28	28	$50,547	93%	1	1	1	2	0
TOTAL	**175**	**154**	**151**		**94%**	**5**	**1**	**6**	**9**	**0**
Associate Degree										
Architectural Technology	4	0	0	N/A	--	4	0	0	0	0
Business Management Technology	2	1	0	N/A	100%	1	0	0	0	0
Chemical Technology	1	0	0	N/A	--	1	0	0	0	0
Civil & Construction Engineering Tech.	24	2	2	N/A	100%	22	0	0	0	0
Electrical Engineering Technology	4	1	1	N/A	100%	3	0	0	0	0
Information Technology	2	1	1	N/A	100%	1	0	0	0	0
*Info Tech-Business Track	1	1	0	N/A	100%	0	0	0	0	0
Manufacturing Engineering Technology	13	3	3	N/A	100%	10	0	0	0	0
Mechanical Engineering Technology	31	7	7	N/A	100%	24	0	0	0	0
TOTAL	**82**	**16**	**14**		**100%**	**66**	**0**	**0**	**0**	**0**

*Major no longer offered.

**Every student was contacted via phone, email, in-person, or information form. Those students declining to provide information were only included in the "Total number of graduates" column.

UNIVERSITY OF CINCINNATI, COLLEGE OF APPLIED SCIENCE

AVERAGE ENTRY-LEVEL SALARIES (ANNUAL)
1999-2008

	2008 SALARIES												
Bachelor Degree	**Number Employed**	**Average Salary**	**Low Salary**	**High Salary**	**2007**	**2006**	**2005**	**2004**	**2003**	**2002**	**2001**	**2000**	**1999**
Architectural Engineering Technology	14	$40,250	$32,000	$54,000	$38,163	$36,571	$33,939	$35,136	$35,750	$34,738	$34,958	$32,000	$32,153
Chemical Technology	9	$39,025	$28,000	$56,000	$39,375	$37,250	$37,027	$31,167	N/A	N/A	$34,847	N/A	--
Computer Engineering Technology	7	$51,667	$40,000	$60,000	$49,640	$46,857	$38,833	N/A					
Construction Management	34	$49,407	$40,000	$62,500	$47,409	$44,958	$43,285	$43,074	$43,927	$43,049	$41,793	$40,192	$37,590
Culinary Arts & Science	6	N/A	N/A	N/A	N/A	N/A							
Electrical Engineering Technology	17	$54,167	$47,000	$62,000	$48,006	$43,630	$45,946	$51,429	$41,667	$44,938	$43,045	$43,260	$36,349
Horticulture	3	$28,600	$20,800	$40,000	N/A	N/A							
Information Technology	22	$48,987	$32,000	$60,000	$43,229	$43,500							
* Computer Science Tech	1	N/A	N/A	N/A	N/A	$53,800							
* Information Engineering Tech	5	N/A	N/A	N/A	$43,667	$43,113	$42,636	$38,301	$36,049	$41,483	$40,558	$43,800	--
* Information Tech-Bus Track	4	N/A	N/A	N/A	N/A	N/A							
* Information Tech-Tech Track	4	N/A	N/A	N/A	N/A	N/A							
Mechanical Engineering Technology	28	$50,547	$39,520	$55,000	$49,792	$48,778			$42,750	$40,833	$42,225	$42,733	$39,600

*Major no longer offered at CAS

Associate Degree	**Number Employed**	**Average Salary**	**Low Salary**	**High Salary**	**2007**	**2006**	**2005**	**2004**	**2003**	**2002**	**2001**	**2000**	**1999**
Architectural Technology	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Business Management Technology	1	N/A	N/A	N/A	N/A	N/A							
Chemical Technology	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$28,600	N/A	--
Civil & Construction Engineering Tech.	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Electrical Engineering Technology	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Information Technology	1	N/A	N/A	N/A	N/A	N/A							
* Information Tech-Bus Track	1	N/A	N/A	N/A	N/A	N/A							
Manufacturing Eng. Technology	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mechanical Engineering Technology	7	N/A	N/A	N/A	$39,500	N/A	N/A	N/A	N/A	N/A	$35,333	N/A	N/A

ARCHITECTURAL ENGINEERING TECHNOLOGY

Architectural Engineering Technology (AET) program synthesizes the technical, functional and form elements of building construction. The underlying philosophy of the program is to create production oriented graduates who can work with architects and their supporting engineering staffs of structural, mechanical, and electrical engineers. The academic thrust of the program is applied technology - how to produce the job. Emphasis is always on the integration of disciplines and the professional communication of decisions.

The Architectural Engineering Technology *Bachelor of Science* degree is ABET accredited. This allows a graduate to pursue registration as a professional engineer. If a student is interested in pursuing registration as a professional architect, a professional degree will be required. This professional degree is usually earned as a Masters at an accredited school of architecture.

An important component of the Architectural Engineering Technology degree is the co-op work experience. This program places the student in a paying job for six quarters between the freshman and senior years. This co-op component requires five years to earn a baccalaureate degree.

For those who are interested in careers in the residential design market, the Architectural Technology program may be adequate. This program leads to an *Associate of Science* degree. Two quarters of co-op and six quarters of academics are required for this degree. Graduation would occur in either August or December.

A dual degree capability exists in the Department of Construction Science. In six years a student may achieve Bachelor of Science degrees in both Architectural Engineering Technology and Construction Management.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	4
Employed Relevant	0
Employed Non-relevant	0
Continuing Education	4
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

CONTINUING EDUCATION INSTITUTIONS

UC, College of Arts and Sciences

MAJORS

BS-Construction Management (2)
BS-Architectural Engineering Tech. (2)

ARCHITECTURAL ENGINEERING TECHNOLOGY

BACHELOR DEGREE GRADUATES

Total number of graduates	19
Employed Relevant	14
Employed Non-relevant	0
Continuing Education	2
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	3
Declined to Provide Information	0
Average yearly salary	$40,250

RELEVANT EMPLOYERS	POSITIONS
Architects Plus	Project Designer
Browning Day Mullins DierdorfArchitects	Graduate Architect
Burgess & Niple	Architectural Designer
CDS Associates	Architectural Support
Champlin/Haupt Architects	Structural Document Specialist
Cole + RussellArchitects	Project Associate
Construction Process Solution	Construction Consultant
CUC	Architectural Designer
FRCH Design Worldwide	Project Coordinator
Hixson	Architecture Department
Jedson Engineering, Inc.	CSA Engineer
PE Services	Plumbing Engineering
Rick Swisher Architect	Full-time Position
Turner	Project Engineer

CONTINUING EDUCATION INSTITUTIONS	MAJORS
Boston ArchitecturalCollege	Masters of Architecture
University of Michigan	Masters of Architecture

BUSINESS MANAGEMENT TECHNOLOGY

This career-oriented associate degree program is designed to prepare students for supervisory and administrative positions at the entry and mid-management levels in various areas of business and industry. The program offers preparation for initial positions in accounting, financial services, and marketing and undertakes to provide skills and attitudes conducive to advancement. It may also be considered an exploratory program to awaken the student's interest in some area of business in which he/she may later specialize.

Many opportunities are available to graduates of this program. Career options available vary according to interests, needs, and abilities.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	2
Employed Relevant	0
Employed Non-relevant	1
Continuing Education	1
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

NON-RELEVANT EMPLOYERS
US Playing Cards

POSITIONS
Inspector

CONTINUING EDUCATION INSTITUTIONS
UC, College of SocialWork

MAJORS
BS-Social Work

CHEMICAL TECHNOLOGY

The Chemical Technology Program is focused on career options in chemistry-based fields of interest. The emphasis throughout the curriculum is on chemical analysis, both qualitative and quantitative methods. Students receive instruction and practice in a continuum across sample preparation, wet chemical methods, chemical instrumentation, and instrumental methods of chemical analysis. The bachelor program requires mandatory six quarters of cooperative work and the associate program requires two. This experience enhances students' maturity and work ethic, and broadens and sharpens their laboratory skills. It also familiarizes them with the culture of industry as compared to that in school.

The bachelor's degree also provides a good background for advanced study in such fields as biochemistry, botany, business management, chemical engineering, dentistry forensic chemistry, geochemistry, geology, medicinal chemistry, medicine, metallurgy, microbiology, museum science, oceanography, patent law, pharmacology, toxicology, veterinary medicine and zoology

ASSOCIATE DEGREE GRADUATES

Total number of graduates	1
Employed Relevant	0
Employed Non-relevant	0
Continuing Education	1
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

CONTINUING EDUCATION INSTITUTIONS
UC, College of Applied Science

MAJORS
BS-Chemical Technology

CHEMICAL TECHNOLOGY (Con't)

BACHELOR DEGREE GRADUATES

Total number of graduates	10
Employed Relevant	9
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	1
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$39,025

RELEVANT EMPLOYERS	POSITIONS
Adecco Technical	Consultant
Advanced Testing Laboratory	Chemist
Barrett Paving Materials,Inc.	Laboratory Engineer
Candle-lite	Chemist Assistant
Cargill Flavor Systems	Lab Technician
Duke Energy	Engineering Technologist
Evonik Degussa	Lab Technician
Procter & Gamble	Researcher
Sun Chemical	Lab Technician II

COMPUTER ENGINEERING TECHNOLOGY

The Bachelor of Science in Computer Engineering Technology program integrates elements of both computer technology and electrical engineering technology. It is this combination that sets it apart from programs in computer science. Each lecture course has an accompanying laboratory in order to give students hands-on experience. The emphasis on the practical sets the program apart from one in computer engineering.

The program incorporates computer skills, including programming, knowledge of operating systems, networking, application and troubleshooting. It emphasizes knowledge of electrical electronic principles required to understand hardware applications. Communication skills are also stressed. A capstone experience is required of each student in the form of a Senior Design project.

BACHELOR DEGREE GRADUATES

Total number of graduates	8
Employed Relevant	7
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	1
Declined to Provide Information	0
Average yearly salary	$51,667

RELEVANT EMPLOYERS

C Forward
Cincinnati Financial Corporation
IIntelligrated
LexisNexis
Messer Construction
Oystar Jones
Sentrilock LLC

POSITIONS

Network Technician
Web Developer/Analyst
Software Engineer-R&D
Technical Support
Infostructure Analyst
Electrical Engineer
Technical Support Representative

CONSTRUCTION MANAGEMENT

The *Bachelor of Science* degree in Construction Management (CM) is a comprehensive five year cooperative education program which is aimed at developing project managers who have a strong understanding of management principles and application to today's complex construction projects. The curriculum is based on a DESIGN-CONSTRUCTION-MAINTAIN continuum. The program is accredited by the American Council on Construction Education (ACCE).

Upon completion of the degree program, students would have acquired skills in communication, problem solving, planning, control and resource management. Other support knowledge acquired in the degree program include constructability, contracts, finance, safety and the design of construction operations. A unique component of the construction management degree is the co-op work experience. This program places the student in a rewarding, paying job for six quarters between the freshman and senior years. A dual degree capability exists in the Department of Construction Science. In six years a student may achieve *Bachelor of Science* degrees in **both** Architectural Engineering Technology and Construction Management.

Students who only intend to acquire the technical skills required in construction technology may acquire, after eight quarters in the program, an *Associate of Science* degree in Civil and Construction Engineering Technology. The Civil and Construction Engineering Technology degree is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. This associate degree prepares students to work in the production aspect of construction projects. Typically, the students have skills in surveying, estimating, computer-aided drafting, material testing and building inspection. Two quarters of cooperative education are required before receiving this degree.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	24
Employed Relevant	2
Employed Non-relevant	0
Continuing Education	22
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS
Bray Arnsperger Excavating
Hensel Phelps Construction Co.

POSITIONS
Estimator
Field Engineer

CONTINUING EDUCATION INSTITUTIONS
UC, College of Applied Science

UC, College of Business

MAJORS
BS-AET(4)
BS-CM (17)
BA-Operations Management

CONSTRUCTION MANAGEMENT

BACHELOR DEGREE GRADUATES

Total number of graduates	38
Employed Relevant	34
Employed Non-relevant	0
Continuing Education	2
Entering Military Service	0
Plans Unstructured	2
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$49,407

RELEVANT EMPLOYERS	POSITIONS
Baker Concrete Construction	Field Engineer
Bray -Arnsperger Excavating	Assistant Project Manager
Buffalo Rings andWings	Project Manager
Danis Building Construction Company	Project Engineer (2)
Gilbane	Office Engineer
Helix Electric	Project Engineer
Hensel Phelps Construction Co.	Field/Office Engineer
Macy's	Construction Coordinator
Marathon Petroleum Co.	Project Controls Specialist
Messer Construction	Project Engineer (3)
Miller-Valentine Commercial Construction	Assistant Project Manager
	Assistant Construction Manager
Moss &Associates	Project Engineer
Oswald Company, Inc.	Project Engineer
RLE	Assistant Superintendent
Schumacher Dugan	Project Engineer
Self-employed	Owner
	President
Skyline Steel, Inc.	Project Manager
TCM &Associates	CEO
Turner	Field Engineer (3)
	Project Engineer (3)
	Unknown
Universal Contracting	Assistant Project Manager
Whiting-Turner	Project Engineer
Winter Companies	Office Engineer
	Project Engineer

CONTINUING EDUCATION INSTITUTIONS	MAJORS
UC, College ofLaw	JD-Law
Undecided	JD-Law

CULINARY ARTS & SCIENCE

The University of Cincinnati's College of Applied Science (CAS) and Cincinnati State Technical and Community College offer a baccalaureate degree in Culinary Arts and Science. This unique dual enrollment program has students spending their first two years at Cincinnati State and then completing their bachelor's degree at UC. This is the first culinary program of its kind in Ohio and only the third in the U.S.

This arrangement provides students with a seamless pathway to completing a bachelor's degree that begins as a student enters the program at Cincinnati State and continues through to degree completion at the University of Cincinnati.

The program immerses students in the culinary arts and then broadens their education in the science of food. The culinary arts features the creativity exhibited by a chef in completing a meal. This is the focus for students at Cincinnati State where students complete the initial two years and earn an associate degree. Then, students shift to UC to complete the baccalaureate program focusing on the science of food, its components and how they react to heat, cooling, storage and other variables.

Those enrolled in the program are considered students of both UC and Cincinnati State. Even while working toward an associate's degree at Cincinnati State, students are able to live in UC residence halls and participate in activities open to UC students.

BACHELOR DEGREE GRADUATES

Total number of graduates	7
Employed Relevant	4
Employed Non-relevant	2
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	1
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS	POSITIONS
Cargill Flavor Systems	Beverage Technologist
	Unknown
Givaudan Flavors	Unknown
Wild Flavors	Beverage Technician

NON-RELEVANT EMPLOYERS	POSITIONS
Riverview Community	Cook
VA Medical Center	Program Support Assistant

ELECTRICAL ENGINEERING TECHNOLOGY

The Bachelor curriculum supports advanced technical education needs, including factory automation of regional industries. The program is structured to develop expertise in five discipline areas of computer applications, process control, instrumentation design, electrical power distribution and data communications. The Associate degree program provides a strong foundation in mathematics, science, and fundamental electrical subjects with specialization in electronic devices, circuits, and power apparatus. Emphasis is on digital electronics with one-third of the contact hours involved in laboratory practice.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	4
Employed Relevant	1
Employed Non-relevant	0
Continuing Education	3
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS
Contingent Network Services

POSITIONS
TAC Engineer-Level 1

CONTINUING EDUCATION INSTITUTIONS
UC, College ofApplied Science

MAJORS
BS-ET (3)

ELECTRICAL ENGINEERING TECHNOLOGY (Con't)

BACHELOR DEGREE GRADUATES

Total number of graduates	18
Employed Relevant	16
Employed Non-relevant	1
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	1
Declined to Provide Information	0
Average yearly salary	$54,167

RELEVANT EMPLOYERS	POSITIONS
Boeing	Unknown
Cincinnati Incorporated	Design Engineer
Cincinnati Test Systems	Controls Engineer
Duke Energy	Unknown
Eskom - Johanesbur, South Africa	Junior Electrical Engineer
Harrison Communication	Unknown
HAWA Incorporated	Electrical Designer/Associate
Intelligrated	Software Engineer-R&D
KLH Engineers PSC	Electrical Engineer
Oystar Jones	Electrical Engineer
P3 Systems - Struttgart Germany	Test Engineer
Psion Teklogix	RMR Engineering Technician
Rite Track	Production Supervisor
Valentine Research	Staff Engineer
Ventek, LLC	Applications Engineer
Xetron	Embedded Software Engineer

NON-RELEVANT EMPLOYERS	POSITIONS
FRCH Design Worldwide	Brand Strategist

HORTICULTURE

An art as old as the Garden of Eden and a science as new as tomorrow, horticulture deals with the development, growth, distribution, and utilization of fruits, vegetables, and ornamental plants. Horticulture is a hobby to some and a profession to others. It enriches our lives with nutritious, flavorsome foods and the aesthetics and utility of ornamental plants. In the Horticulture program you will learn the relation ships between horticulture and natural, ecological processes, and develop a responsible horticultural approach toward the environment.

Courses in the curriculum have been partitioned into groups of similar courses called clusters. Requirements for the Bachelor of Science in Horticulture (Scientific Track or Business Track) are listed below.

Career opportunities within the Horticulture/Green Industry are excellent. In particular, the degree can lead to positions in the environment, landscape, and lawn care fields, as well as within education and government. The baccalaureate degree provides opportunities for further career advancement and personal satisfaction.

BACHELOR DEGREE GRADUATES

Total number of graduates	3
Employed Relevant	3
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$28,600

RELEVANT-EMPLOYERS
Legendary Run GolfClub
Naks Hydroseeding Inc.
University of Cincinnati

POSITIONS
Greenskeeper
Foreman
Horticulturalist

INFORMATION TECHNOLOGY

Information Technology (IT) in its broadest sense encompasses all aspects of computing technology. IT, as an academic discipline, focuses on meeting the needs of users within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies. Information Technology is an academic discipline distinct from computer engineering, computer science and management information systems. IT encompasses software engineering and development, computer networking and communications, Web technologies, computer security, database management, and digital media technologies. The IT professional is hired by organizations of all sizes in all industries. Students will receive a broad education across the IT spectrum as well as technical specialization in the areas of their choice.

The IT degree at the College of Applied Science offers a Bachelor and Associate degree option in both the day and evening schedules. Students will choose a primary track specialization within IT (Software Development, Networking, or Web Technologies) and BS students will also choose a secondary track specialization (Software Development, Networking, Web Technologies, Database or Digital Media). Co-op experience is a vital part of the IT curriculum; all students will work as a student professional in alternating quarters starting in their second year of study. BS students will co-op five quarters and AS students two quarters. In addition to co-op, students at the College of Applied Science learn by experience through the integration of intensive, hands-on activities built into the courses and through the Senior Design project completed in the final year of study

ASSOCIATE DEGREE GRADUATES

Total number of graduates	2
Employed Relevant	1
Employed Non-relevant	0
Continuing Education	1
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS
Blackband

POSITIONS
IT Support Specialist

CONTINUING EDUCATION INSTITUTIONS
UC, College of Applied Science

MAJORS
BS-IT

INFORMATION TECHNOLOGY (Con't)

BACHELOR DEGREE GRADUATES

Total number of graduates	24
Employed Relevant	22
Employed Non-relevant	0
Continuing Education	0
Entering Military Service	0
Plans Unstructured	2
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	$48,987

RELEVANT EMPLOYERS	POSITIONS
Axcess Financial	Helpdesk
Cincinnati Bell	Application Analyst
Duke Energy	Application Developer II
	Local IT Coordinator
Epsilon	Developer
General Electric	P M Business Solutions
	Unknown
Hamilton County	Web Developer
Hewlett-Packard	Desktop Engineer
	Full-time Position
	Senior Consultant
Kroger Company	Programmer/Analyst
	Software Engineer
	Unknown
	Web Support Engineer
Online Computer Library Center	Software Developer
Photrade.com	Web Developer
Pomeroy	Helpdesk Technician
Roundarch	Interactive Developer
The David J. Joseph Co.	Software Engineer
UC, Admin & Finance - ITDepartment	Info Tech Analyst
University of Cincinnati	Equipment/Applications Specialist

PREVIOUS MAJORS FROM THE IT DEPARTMENT

When the Information Technology degree was created, the IT Department at the College of Applied Science stopped accepting students into the following majors: Computer Science Technology, Computer Technology, Information Engineering Technology, and Information Technology-Business or Technical Track. Students were given the option to transfer to this new major or complete their current major subject to graduation deadlines. Listed below is the graduate information from students electing to remain in their original majors.

COMPUTER SCIENCE TECHNOLOGY

BACHELOR DEGREE GRADUATES

Total number of graduates..... 1
Employed Relevant..... 1

RELEVANT EMPLOYERS	POSITIONS
GIRD	IT Specialist

INFORMATION ENGINEERING TECHNOLOGY

BACHELOR DEGREE GRADUATES

Total number of graduates..... 5
Employed Relevant..... 5

RELEVANT EMPLOYERS	POSITIONS
Fifth Third Bancorp	Applications Developer II
Specialty Books	Web and Systems Programmer
Teksystems	Business Intelligence Analyst
The Wornick Company	Sr. Programmer/Analyst
Xpedx – An International Paper Company	eBusiness Program Manager

INFORMATION TECHNOLOGY - BUSINESS TRACK

ASSOCIATE DEGREE GRADUATES

Total number of graduates..... 1
Employed Non-relevant 1

NON-RELEVANT EMPLOYERS	POSITIONS
Oldfield Pump Co	Parts Manager

BACHELOR DEGREE GRADUATES

Total number of graduates..... 4
Employed Relevant 4

RELEVANT EMPLOYERS	POSITIONS
KiZAN Technologies	Consultant
Kroger Company	Senior Analyst
Patheon Pharmaceutical, Inc.	IT Analyst
WellPoint, Inc.	Infrastructure Services Sr Advisor

INFORMATION TECHNOLOGY - TECHNICAL TRACK

BACHELOR DEGREE GRADUATES

Total number of graduates..... 5
Employed Relevant 4
Seeking Employment 1

RELEVANT EMPLOYERS	POSITIONS
Children's Hospital	Technical Specialist
Hewlett-Packard	Systems Engineer
The Midland Company	Network Design &Administration
The Wornick Company	IT Operations Manager

MANUFACTURING ENGINEERING TECHNOLOGY

The *Associate degree* in Manufacturing EngineeringTechnology is designed to meet the needs of industrial organizations in Ohio and throughout the nation.

The program is devised to develop strength in analytical reasoning, understanding of the scientific basis for manufacturing, fundamental manufacturing and product technologies, and effective written and oral communications. Graduates have studied all aspects of automation used in manufacturing. The program is designed to raise questions and help explore the interactions between technology and society. Computers are used for design, control, planning, analysis and communications functions as a matter of course.

Full-time students follow a cooperative work experience schedule.Two of the eight curriculum quarters are devoted to the co-op requirement. Employment opportunities include: manufacturing methods analyst, quality technician, and management trainee.

MANUFACTURING ENGINEERING TECHNOLOGY
ASSOCIATE DEGREE GRADUATES

Total number of graduates	13
Employed Relevant	3
Employed Non-relevant	0
Continuing Education	10
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS
Baker Metal Products
Feintool Cincinnati
R.A. Jones

POSITIONS
Draftsman
Project Engineer
Mechanical Engineer

CONTINUING EDUCATION INSTITUTIONS
UC, College ofApplied Science

MAJORS
BS-MET (10)

MECHANICAL ENGINEERING TECHNOLOGY

The MET curriculum focuses on design, manufacturing and energy technologies. The academic instruction covers the relevant theory needed in each area with core courses being integrated with extensive laboratory assignments. This combination of hands-on experience with ample academic instruction is the main advantage of the MET curriculum. The MET department takes mechanical design education all the way to the level of technology!

The MET program's dynamic, hands-on approach is coupled with rigorous academic preparation, both for the professional engineers (PE) exam and for enrollment in prestigious MSc and MBA programs (allowing students to pursue more advanced degrees, such as the PhD). MET graduates routinely start their professional careers within the product development, production development, energy production and energy distribution functions of industry Employers are especially attracted by the METgrad's ability to take entire projects from the design stage all the way through to implementationAs a result, the majority find themselves independently managing industrial projects during their first professional years. Many choose to move to upper management later on in their careers.

ASSOCIATE DEGREE GRADUATES

Total number of graduates	31
Employed Relevant	7
Employed Non-relevant	0
Continuing Education	24
Entering Military Service	0
Plans Unstructured	0
Seeking Employment	0
Declined to Provide Information	0
Average yearly salary	N/A

RELEVANT EMPLOYERS	POSITIONS
Feintool Cincinnati	Tool Designer
	Design Engineer
L-3	Integration Technician
OPW Fueling Component	Manufacturing Engineer
Parkway Products, Inc	Unknown
Sawbrook Steel Casting Co.	Assistant Foundry Engineer
The G & G Manufacturing Company	Manufacturing Engineer

CONTINUING EDUCATION INSTITUTIONS	MAJORS
UC, College ofApplied Science	BS-MET (23)
UC, College of Education	BA-Middle Childhood Education

MECHANICAL ENGINEERING TECHNOLOGY (Con't)

BACHELOR DEGREE GRADUATES

Total number of graduates	33
Employed Relevant	28
Employed Non-relevant	0
Continuing Education	1
Entering Military Service	1
Plans Unstructured	1
Seeking Employment	2
Declined to Provide Information	0
Average yearly salary	$50,547

RELEVANT EMPLOYERS

ADVICS Manufacturing – Ohio
Alexander & Associates
Cincinnati Thermal Spray
Contractor GE Transportation
D.S. Design Co, LLC
Dayton Pattern, Inc.
Ethicon Endo-Surgery (Kelly Engineering Services)
General Electric Aviation
Integrated Technologies Engineering
Intelligrated

Intertech Design Services
Machintek
Makino

Meyer Tool
Pella
Procter & Gamble

R.A. Jones
Setco Sales Company
Siemens
Swagelock
Toyota

Usui International
Xtek, Inc.

POSITIONS

Manufacturing Engineer
Mechanical Engineer
Product Engineer
Mechanical Packaging Engineer
Mechanical Engineer
Unknown
Junior Engineer
Engineering Designer
Design Engineer
Product Engineer
Project Engineer
MET Designer
Unknown
Project Specialist
Application Engineer
Project Manager
Engineering
Researcher
Research and Development
Mechanical Engineer
Application Engineer
Contractor
Manufacturing Engineer
Engineer in Training
Specialist
Unknown
Service Engineer
Coupling Service Engineer

CONTINUING EDUCATION INSTITUTIONS

Ohio State University

MAJORS

Chief Information Officer

MILITARY

United States Air Force

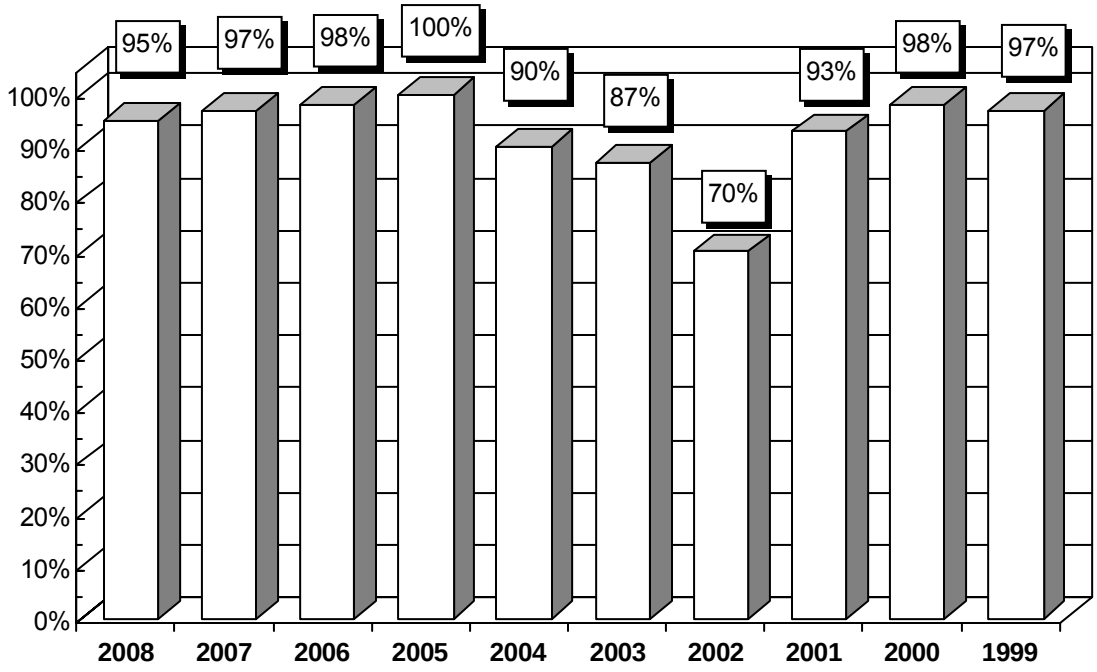
UNIVERSITY OF CINCINNATI COLLEGE OF APPLIED SCIENCE
SUCCESSFUL JOB DEVELOPMENT OF STUDENTS DESIRING EMPLOYMENT 1999-2008

ASSOCIATE DEGREE	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Architectural Technology	---	N/A	N/A	---	---	---	100%	---	---	---
Business Management Tech.	**100%**	100%	N/A	100%						
Chemical Technology	---	100%	N/A	---	---	---	100%	100%	---	---
Civil & Construction Eng. Tech	**100%**	100%	N/A	100%	---	---	---	100%	100%	100%
Electrical Eng. Tech.	**100%**	100%	N/A	---	---	---	60%	100%	100%	100%
Information Technology	**100%**	100%	N/A							
*Info Tech-Business Track	**100%**	0%								
Manufacturing Eng. Tech	**100%**	100%	N/A	100%	---	---	100%	100%	100%	100%
Mechanical Eng. Tech	**100%**	100%	N/A	100%	100%	100%	67%	100%	100%	100%

BACHELOR DEGREE	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Architectural Eng. Tech.	**82%**	92%	100%	100%	100%	88%	77%	87%	100%	100%
Chemical Technology	**100%**	100%	100%	100%	100%	100%	67%	100%	100%	100%
Computer Eng. Tech.	**88%**	80%	100%	100%	67%					
Construction Management	**100%**	96%	100%	100%	100%	95%	86%	100%	100%	100%
Culinary Arts & Science	**86%**	100%								
Electrical Eng. Tech.	**94%**	100%	93%	100%	91%	73%	100%	100%	94%	100%
Horticulture	**100%**	100%	100%	100%						
Information Technology	**100%**	100%	96%	100%						
*Computer Science Tech.	**100%**	100%								
*Information Eng. Tech	**100%**	91%								
*Info Tech-Business Track	**100%**	100%								
*Info Tech-Technical Track	**80%**	100%								
Mechanical Eng. Tech.	**93%**	100%	97%	100%	92%	85%	36%	81%	100%	92%

UNIVERSITY OF CINCINNATI COLLEGE OF APPLIED SCIENCE
SUCCESSFUL JOB DEVELOPMENT
OF STUDENTS DESIRING EMPLOYMENT - 1999-2008

ALL MAJORS COMBINED



CAS ALUMNI SURVEY 2009

Information Technology

Demographics

Total Graduates Surveyed per Alumni Mailing List Graduation years 2003-2008 was 1657with 212 or 13% total responses.
Total Number of Information Technology graduates surveyed was229.

Total Number of Information Technology graduates surveyed by individual degree were:
IET = 129, IT= 77, CST = 23 alumni. Total 229 alumni surveyed
Total Number of Information Technology alumni surveys returned is 27.
IET = 6, IT = 19, CST = 2

Co-op and Employment

The average number of co-op quarters for respondents was 2.7
Salaries reported are $31,917 to $100,000 with an average of $48,504. All reports indicated advancement in career via title and advances in salary. No individual salaries showed a decrease.

Lifelong Learning

Information Technology alumni response concerning additional education, certifications/licensures, and continuing education course are as follows:

Advanced degrees
MBS/MS-IS (dual program)

Certificates/Licensures
Photoshop (Advanced) Seo, PPC, Social Media
Microsoft Certs – MCP, MCAD
PERL programming
PHP and MYSQL

Program Educational Objectives

Alumni were asked to rate their skill concerning a list of attributes based on educational objectives. They were then asked to rate the importance of these attributes to their careers.

1. Assess yourself for each skill or attribute. From 1 equal to improvement needed to 5 as an area of strength.

Answer Options	1	2	3	4	5	Response Average	Response Count
Participates in Continuing Education/Expanding Skill		3	7	6	7	3.74	23
Possesses Good Communication Skills			4	15	5	4.04	24
Functions Effectively on Teams Exhibiting Good People Skills				14	8	4.36	22
Understands Budge/Finance for Projects		5	7	8	4	3.36	24
Employs Critical Thinking and Problem Solving			3	9	11	4.35	23
Demonstrates Ability to Manage Projects and Associated Project Documents			3	12	9	4.25	24
Exhibits Discipline Specific Skills		1	1	12	10	4.29	24
Demonstrates Ethical and Social Responsibility and Personal Integrity			1	9	14	4.54	24
Demonstrates Ability to Coordinate and Integrate Work of Various Allied Professional Disciplines			5	11	8	4.17	24

2. Rate each skill or attribute and its importance to your career. 1 equals not important to and 5 equals very important

Answer Options	1	2	3	4	5	Response Average	Response Count
Participates in Continuing Education/Expanding Skill			4	6	13	4.39	23
Possesses Good Communication Skills			3	8	14	4.44	25
Functions Effectively on Teams Exhibiting Good People Skills		1	2	8	13	4.38	24
Understands Budge/Finance for Projects	1	7	6	6	3	3.13	23
Employs Critical Thinking and Problem Solving			1	8	15	4.58	24
Demonstrates Ability to Manage Projects and Associated Project Documents			1	7	16	4.63	24
Exhibits Discipline Specific Skills		2	4	8	13	4.13	24
Demonstrates Ethical and Social Responsibility and Personal Integrity			2	8	14	4.50	24
Demonstrates Ability to Coordinate and Integrate Work of Various Allied Professional Disciplines			7	10	9	4.00	24

Note: Not all responders completed all sections and two did not respond to each of the categories in the charts that go with questions 1 and 2 above so you will notice the response count is not consistent.

3. **Of the attributes, list any that you feel your education at CAS did not adequately support.**

I would like to see more user groups, external to UC, Cincinnati. Net groups, SQL user groups or others. Make long term learning a part of the course for IT students. We don't graduate and peak, we graduate, and we keep these skills to build more. It is very different in the real world not to know the answer to a problem than it is in the classroom.
Working in teams
2 listed Budget and Finance
Ability to manage projects
Taking multiple parts of a project and putting them together
COBOL and mainframe support
Had to take classes on printing at Cincinnati State

Final Section

1. **Responses of alums when asked to list two courses that had the greatest impact on your career?**

Senior Design
Senior design. Would consider taking course like senior design again. Junior design program good precursor to design. Require teams (no individual projects) Maybe have alumni direct each team. Alumni and professor grade team performance. Access to further education would be enticement for alumni support. Alumni team leader must be chosen wisely.
Senior design. What I learned at UC didn't actually click until I took senior design and HAD to create something from scratch worth a darn. It never fully used the documents we glossed over in classes or realized how to build multi-tiered designs until senior design. It was a wakeup call to the real world.
Tie between Discrete Math/Computational Concepts
One of the toughest classes for me was computational concepts. It is very much tied into discrete math for me as I can only list both or nothing for a second option. Both classes were eye openers that I did need math, but math could be interesting when applied to my passion for computers
3 listed IT for Managers Quality
Discrete math – great analytical skills for job Systems Analysis and Design
Project Manager Software Engineer
2 listed Photoshop and Advanced Web Development
Accounting – everything is about money
Critical thinking –we need to think through things before action
Special topics for the Web track – Second life programming language introduced me to virtual world, which I now operate my own profitable virtual store
Data Representation Technologies – XSL
Accounting – everything is about money
Critical thinking – we need to think through things before action
Database administration
UNIX classes

Programming classes because once you learn one language you can pick up any other ofthem
All other coursework was great

2. **Responses of alums when asked to list two courses that had the least impact on your career.**

Technology field is constantly changing.
Lack of core development
2 listed Celtic Nordic Myth
Addiction in Law
Mobile Programming – enjoyed but you won't ever use
Computer Hardware – developers don't need this information
Duo Develop – already covered in other classes
UNIX – never use
Geology
Addiction in Law
Calculus II
Physics III
Intro to Computers/Microsoft Applications – should be changed to teach more advanced topics

Responses when alums were asked about interests related to the college.

Attend Future Tech Expos - 3
Serve as a judge for future Tech Expos - 1
Check the alumni site on the department website to keep up with news updates on alums and departmental events - 6
Participate in alumni Events - 6

Comments/Suggestions:
Is CAS on twitter?
2 listed Happy hour
Cookout
Continuing Education speakers
Free events as the economy sucks right now
Red's games

UNIVERSITY OF Cincinnati

DIVISION OF PROFESSIONAL PRACTICE
PO Box 210115
Cincinnati, OH 45221-0115
(513) 556-5027 (Voice) (513) 556-5061 (Fax)
www.uc.edu/propractice/

EMPLOYER ASSESSMENT OF PROFESSIONAL PRACTICE STUDENT

For the student to receive maximum benefit from the work experience and receive an appropriate co-op grade, completion of this form is essential.

PURPOSE

The Professional Practice Program extends the students' education beyond the limitations of classroom teaching and curriculum. By providing a structured sequence of progressively challenging lessons learned on assignment and in direct association with practicing members of the profession, students are provided the most comprehensive and professional preparation available.

The person who supervises the student on practice assignments assumes the important responsibility of guiding student learning as well as assessing their performance, growth, potential, and developmental needs. The professional practice employer thus cooperates with the University of Cincinnati's faculty in planning the student's program and in providing guidance to enhance the individual's professional development. The employer assessment information will be used for guidance and instructional purposes only and will become a part of the student's academic record.

Employer: _____

Assignment Location: _____
(Number) (Street)

_____
(City) (State) (Zip Code)

Web Address: _____

Department or work unit: _____

Current quarter employment dates: From _____ To _____

Please describe the essential functions of your department or work unit: _____

_____

_____

_____

_____

_____

Please describe the student's work assignment for the current quarter: _____

_____

_____

_____

_____

_____

Please assess the student's work assignment from the following two perspectives:

The above position provides important skill development and learning for anyone majoring in this student's specific discipline. *Please check one choice:*

Consistently	Most of the Time	Frequently	Occasionally	Never

The above position provides important skill development and learning directly related to this student's current professional goals, regardless of major field of study. *Please check one choice:*

Consistently	Most of the Time	Frequently	Occasionally	Never	Not Discussed

PERFORMANCE SKILLS ASSESSMENT

Specific comments, examples, and observations to support the ratings should be included. The performance skills should be rated using the following scale.
Please check the appropriate box below.

5 Excellent (the best or one of the best in this category)
4 Good (above average but not excellent)
3 Satisfactory (average when compared to others in this category)
2 Poor (lacking in some important aspects or less than satisfactory)
1 Unsatisfactory (lack of ability, failure to use it, or any other cause)
N/A Not applicable or no opportunity to observe

PERFORMANCE SKILLS	RATING Scale 5	4	3	2	1	N/A	COMMENTS EXAMPLES OBSERVATIONS
COMMUNICATION							
• Speaks with clarity and confidence							
• Writes clearly and concisely							
• Makes effective presentations							
• Exhibits good listening and questioning skills							
CONCEPTUAL/ANALYTICAL ABILITY	5	4	3	2	1	N/A	
• Evaluates situations effectively							
• Solves problems/makes decisions							
• Demonstrates original and creative thinking							
• Identifies and suggests new ideas							
LEARNING/THEORY AND PRACTICE	5	4	3	2	1	N/A	
• Learns new material quickly							
• Accesses and applies specialized knowledge							
• Applies classroom learning to work situations							
PROFESSIONAL QUALITIES	5	4	3	2	1	N/A	
• Assumes responsibility/accountable for actions							
• Exhibits self-confidence							
• Possesses honesty/integrity/personal ethics							
• Shows initiative/is self-motivated							
• Demonstrates a positive attitude toward change							
TEAMWORK	5	4	3	2	1	N/A	
• Works effectively with others							
• Understands and contributes to the organization's goals							
• Demonstrates flexibility/adaptability							
• Functions well on multidisciplinary team							
LEADERSHIP	5	4	3	2	1	N/A	
• Gives direction, guidance and training							
• Motivates others to succeed							
• Manages conflict effectively							
TECHNOLOGY	5	4	3	2	1	N/A	
• Uses technology, tools, instruments and information							
• Understands complex systems and their interrelationships							
• Understands the technology of the discipline							
DESIGN AND EXPERIMENTAL SKILLS	5	4	3	2	1	N/A	
• Displays ability to design a component, system or process							
• Demonstrates ability to design and conduct experiments							
• Analyzes and interprets data efficiently							

PERFORMANCE SKILLS	RATING Scale 5	4	3	2	1	N/A	COMMENTS EXAMPLES OBSERVATIONS
WORK CULTURE							
• Understands and works within the culture of the group							
• Respects diversity							
• Recognizes political and social implications of actions							
ORGANIZATION/PLANNING	5	4	3	2	1	N/A	
• Manages projects and/or other resources effectively							
• Sets goals and prioritizes							
• Manages several tasks at once							
• Allocates time to meet deadlines							
EVALUATION OF WORK HABITS	5	4	3	2	1	N/A	
• Professional attitude toward work assigned							
• Quality of work produced							
• Volume of work produced							
• Attendance							
• Punctuality							

Does student appear to be progressing successfully? _____ Yes _____ no

Please explain: _____

List student's specific strengths: _____

List areas of concern regarding student's performance: _____

SUMMARY EVALUATION OF PERFORMANCE

Assessment of Student's Performance to Support Overall Evaluation Below:

OVERALL EVALUATION :	**(A)**	**(B)**	**(C)**	**(D)**	**(F)**
	Excellent	**Good**	**Satisfactory**	**Poor**	**Unsatisfactory**

GROWTH & FUTURE DEVELOPMENT

To assist the student in the upcoming quarter, please complete the following section:

What are your goals for the student for the next co-op term?

What suggestions would you make to help the student become more successful?

What courses or specific training would you suggest to help the student develop professionally?

Has this report been discussed with the student? _____ yes _____ no

Rate of Pay: _____ Per Hour

Do you recommend this student for continued co-op employment with your organization? _____ yes _____ no

If NO, please explain:

List all individuals who have had input in this evaluation:

Name: _____ Name: _____

Name: _____ Name: _____

Evaluator's Signature: _____ Position: _____ Date: _____

Program Administrator's Signature: _____ Position: _____ Date: _____

Student's Signature: _____ Date: _____

IT Program OutcomesAssessment

Department of Information Technology
College of Engineering &Applied Science
University of Cincinnati

Assessment Date: Fall 2010

Program Outcome:

1.1 Develop fundamental programming skills

Course Number/Name:

20 IT 171 Programming Logic and Methods

Assessment
Mid Term- selected questions:

- Which are the three structures of any computer program? Draw the flowcharts to represent each.
- a. What is a syntax error? How do you detect it?
  b. What is a logic error? How do you detect it?

- Write Pseudo code OR a flowchart of a loop that prints the first 10 numbers (1-10).
- What is the output of the code snippet below?

```
g = 4
h = 6
while g <h
   g=g+1
endwhile

output g, h
```

Final Test – selected questions.

- What are "exceptions" in object-oriented programming? What is the technique of handling exceptions in object-oriented programming? Explain.
- Write pseudo code for a method that accepts three numeric (or integer) numbers and returns their average.
- Write the pseudo code for a program that outputs every even number from 2 through 30.
- Write the pseudo code for a class explained below. Provide set/get methods for each attribute. Data hiding principle must be used.

Class name : Employee
Attributes : Name, Salary, department

- What is overloading? What is overriding? How are they different? 10 points

True/False Questions :Circle T or F

- T / F Classes are the basic building blocks of object-oriented programming
- T / F When you create a class and do not provide a constructor, object-oriented languages automatically supply you with a default constructor, one that never requires arguments.
- T / F The block of program code used to trap exceptions is called “try”.
- T / F Syntax do not have to be perfect in order for the computer to execute the program in a production environment.
- T / F Today, programmers have to deal with millions of distinct memory locations, each of which has an address, and the programmer has to remember the stored location of their variables.
- T / F A `while` loop tests the condition at the end of the loop structure
- T / F For efficiency, it is very common for programmers to compare values that are of different types.
- T / F The `AND` operator has precedence over the `OR` operator
- T / F A variable may never be used as a subscript to the array.
- T / F A method’s arguments must be declared with the argument type before the argument name.

Multiple Choice Questions : Check the best choice.

- In an assignment statement, where must you place the variable that is to receive the new value?

    a) On the right side of the assignment operator
    b) On the left side of the assignment operator
    c) Anywhere in the statement

- The flow chart symbol used to represent a decision is a:

    a) Triangle
    b) Square

c) Circle
d) Diamond

- Which description best defines a method?

a) Snarled, unstructured program statements
b) Self-contained program module that contains a series of statements that carry out a task
c) A process to compare the input to another value to make a decision
d) Training module for the programmer prior to starting to program the instructions

- Which statement best describes the conditional AND operator?

a) It is a symbol that reverses the meaning of a Boolean expression.
b) It is a symbol that you use to combine decisions so that two or more conditions must be true for an action to occur.
c) It is a symbol that you use to combine decisions when any one condition can be true for an action to occur.
d) It is not a useable symbol in object-oriented programming.

- When loops are nested, the loop that contains the other loop is called the:
  a) outer loop
  b) inner loop
  c) stacked loop
  d) array loop
- Which method return type does not return a value?

a) numeric
b) string
c) void

- In object-oriented programming, what is a method?

a) an object
b) a feature or characteristic of an object
c) a pre-programmed behavior of an object

- What statement below best describes inheritance?
  a) The process of acquiring the traits of one's predecessors
  b) The type of relationship that exists when using composition
  c) The data components of a class that belong to every instantiated object
  d) The concept that other classes should not alter an object's attributes

- What statement below best describes information hiding?
  a) The process of acquiring the traits of one's predecessors
  b) The type of relationship that exists when using composition
  c) The data components of a class that belong to every instantiated object

d) The concept that other classes should not alter an object's attributes

- Which statement best describes a set method?
  a) Sets the values of a data field within a class
  b) Performs tasks within a class
  c) Returns a value from a class

Fill in the blanks:

- Another term for base class is_____

- _____ is a number that indicates the position of a particular item within an array.

- If the highest subscript in an array is nine, and the subscripts start at zero, the number of elements in the array is _____

- _____ methods are those for which no object needs to exist.

- UML stands for _____

19 out of 24 students (80%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn-2010 Quarter

Program Outcome:(Number and Description)

1.1 Develop fundamental programming skills

Course Number/Name:

32-IT-200 Computational Concepts

Out 30 students:
26 got a 70% or better (81% passed)
4 got less than 70% (1 of the 4 failed the class)

1.1 Develop fundamental programming skills

Programming questions.

Pgm 1: Write a program to perform the following sum.(1/1)pow1 + (1/2)pow2 + (1/3)pow3 +... + (1/20)pow20.

Pgm 2: Write a short program to calculate and print out the approximated Φ from the ratios of the consecutive pair of Fibonacci numbers – first 50 numbers please. How many pairs?

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.1 Develop fundamental programming skills

Course Number/Name:

32IT205 – Computer Programming I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by Labs 1– 9 and Assignment 1 (indeed the entire course)

Lab 1 – Java Data types, Declaring and initializing variables, Basic Arithmetic and Casts Using an IDE to interpret java code.

19 out of 20 students (95%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 2 – Write short interpreted java programs of 10 – 20 statements, Instantiate objects, invoke object methods.

20 out of 20 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 3 & 4 – Create parameterized object methods, Create and run compiled java programs with main().

Lab 3: 20 out of 20 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 4:19 out of 20 students (95%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 5 – Use simple control loops to process images, Use symbolic constants, use Javadoc Formatting.

18 out of 20 students (90%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 6 – Use nested loops to process image matrix data.

14 out of 20 students (70%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 7 – Class design, create an aggregate class, create and debug a driver program for the class.

18 out of 20 students (90%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 8 – Formatting numeric output, implementing encapsulation (set/get) methods, hiding data arrays of objects.

13 out of 20 students (65%) achieved more than 80 %.

Goal of 70% achieved 80% or more was not met

Lab 9 – Getting input from the console, bullet-proofing input, constraining user input to a range, using prompts, do..while loop.

17 out of 20 students (85%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.1 Develop fundamental programming skills

Course Number/Name:

32IT206 – Computer Programming II

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by all assignments and labs:

Assignment 1 – Text File I/O, aggregation and aggregate classes, arrayLists, reading and writing delimited data files.

13 out of 15 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 1A – code-reading and analysis, group work, program and algorithm design, decomposition.

12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 1B - Console input and bullet-proofing, debugging, decomposition, refactoring.

12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 2 & 3 – Simple Java Swing GUI programming, interfaces, inner classes, action listeners and event driven programming

Lab 2:15 out of 15 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 3:12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 4 – Inheritance, class hierarchies, class design.

14 out of 15 students (93%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 2 - Java Swing GUI programming, interfaces, inner classes, action listeners and event driven programming

14 out of 15 students (93%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.1 Develop fundamental programming skills

Course Number/Name:

32IT207 – Computer Programming III

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by all projects.

Lab 1 – Java Swing GUI programming, Reading files as binary streams, Formatting output (Hexedecimal).

18 out of 23 students (78%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 1 – Java Swing GUI programming, Using recursion to search the file system.

20 out of 23 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 2 – Recursion: simple recursion, recursion with a helper method, multiple recursion, recursive calls, end conditions.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 3 – Sorting and Searching Algorithms: Insertion, Merge, and Selection Sorts, Linear and Binary searches, Comparison of algorithm efficiency and implementation.

19 out of 23 students (83%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 4 – Abstract Data Types I: Stacks, Queues, Lists.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 5 – Abstract Data Types II: Sets, Maps, Hashing, Trees.

20 out of 23 students (86%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 6 – Java database programming with JDBC.

12 out of 23 students (52%) achieved more than 80 %.

Goal of 70% achieved 80% or more was not met

Lab 7 – Threads: threads and thread pools, race conditions, deadlock.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 8 – Network programming.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 9 – XML.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 10 – Java Web.

17 out of 23 students (74%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 2 – Java Swing GUI programming, working with data files, using Set and Map ADTs to solve a task.

19 out of 23 students (83%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 3 – Java Swing GUI programming, Either a network programming or JDBC option.

20 out of 23 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.2 Program effectively within the student's specialty area

Course Number/Name:

32IT205 – Computer Programming I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by Lab 7 and Lab 9

Lab 7 – Class design, create an aggregate class, create and debug a driver program for the class.

18 out of 20 students (90%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 9 – Getting input from the console, bullet-proofing input, constraining user input to a range, using prompts, do..while loop.

17 out of 20 students (85%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.2 Program effectively within the student's specialty area

Course Number/Name:

32IT206 – Computer Programming II

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by all projects

Assignment 1 – Text File I/O, aggregation and aggregate classes, arrayLists, reading and writing delimited data files.

13 out of 15 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 1A – code-reading and analysis, group work, program and algorithm design, decomposition.

12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 1B - Console input and bullet-proofing, debugging, decomposition, refactoring.

12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 2 & 3 – Simple Java Swing GUI programming, interfaces, inner classes, action listeners and event driven programming

Lab 2:15 out of 15 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 3:12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 4 – Inheritance, class hierarchies, class design.

14 out of 15 students (93%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 2 - Java Swing GUI programming, interfaces, inner classes, action listeners and event driven programming

14 out of 15 students (93%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.2 Program effectively within the student's specialty area

Course Number/Name:

32IT207 – Computer Programming III

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by all projects. The course itself provides a survey of a variety of topics from software development and programming which includes topics that reflect the track specialization of the program.

Lab 1 – Java Swing GUI programming, Reading files as binary streams, Formatting output (Hexedecimal).

18 out of 23 students (78%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 1 – Java Swing GUI programming, Using recursion to search the file system.

20 out of 23 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 2 – Recursion: simple recursion, recursion with a helper method, multiple recursion, recursive calls, end conditions.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 3 – Sorting and Searching Algorithms: Insertion, Merge, and Selection Sorts, Linear and Binary searches, Comparison of algorithm efficiency and implementation.

19 out of 23 students (83%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 4 – Abstract Data Types I: Stacks, Queues, Lists.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 5 – Abstract Data Types II: Sets, Maps, Hashing, Trees.

20 out of 23 students (86%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 6 – Java database programming with JDBC.

12 out of 23 students (52%) achieved more than 80 %.

Goal of 70% achieved 80% or more was not met

Lab 7 – Threads: threads and thread pools, race conditions, deadlock.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 8 – Network programming.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 9 – XML.

23 out of 23 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 10 – Java Web.

17 out of 23 students (74%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 2 – Java Swing GUI programming, working with data files, using Set and Map ADTs to solve a task.

19 out of 23 students (83%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 3 – Java Swing GUI programming, Either a network programming or JDBC option.

20 out of 23 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.3 Apply a development life cycle to a problem

Course Number/Name:

32IT205 – Computer Programming I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by Labs 3, 4, 5, 7, 9

Lab 3 & 4 – Create parameterized object methods, Create and run compiled java programs with main().

Lab 3: 20 out of 20 students (100%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 4:19 out of 20 students (95%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 5 – Use simple control loops to process images, Use symbolic constants, use Javadoc Formatting.

18 out of 20 students (90%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 7 – Class design, create an aggregate class, create and debug a driver program for the class.

18 out of 20 students (90%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 9 – Getting input from the console, bullet-proofing input, constraining user input to a range, using prompts, do..while loop.

17 out of 20 students (85%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.3 Apply a development life cycle to a problem

Course Number/Name:

32IT206 – Computer Programming II

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by Assignment 1, Lab 1A & 1B, Lab 4

Assignment 1 – Text File I/O, aggregation and aggregate classes, arrayLists, reading and writing delimited data files.

13 out of 15 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 1A – code-reading and analysis, group work, program and algorithm design, decomposition.

12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 1B - Console input and bullet-proofing, debugging, decomposition, refactoring.

12 out of 15 students (75%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Lab 4 – Inheritance, class hierarchies, class design.

14 out of 15 students (93%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

1. Develop Computer Applications
1.3 Apply a development life cycle to a problem

Course Number/Name:

32IT207 – Computer Programming III

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by Lab 1, and Assignments 1-3

Lab 1 – Java Swing GUI programming, Reading files as binary streams, Formatting output (Hexedecimal).

18 out of 23 students (78%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 1 – Java Swing GUI programming, Using recursion to search the file system.

20 out of 23 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 2 – Java Swing GUI programming, working with data files, using Set and Map ADTs to solve a task.

19 out of 23 students (83%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Assignment 3 – Java Swing GUI programming, Either a network programming or JDBC option.

20 out of 23 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome:

1.3Apply a development life cycle to a problem

Course Number/Name:

32 IT 301 Systems Analysis and Design 1

Assessment

Individual Assignment 2:

Case Study Assignment: Case Study Assignment

The case study:

LIBRARY INFORMATION SYSTEM (LIS)

Problem Domain

1. The problem domain is a library management system.
2. Books are checked out, checked in and reserved (put on hold) by library members.
3. Students may check out books for 4 weeks, and faculty for 3 months.
4. Patrons are fined $0.25 per day that the books are overdue to a maximum of $5.00 per overdue item.
5. The library also has other resources that can be checked out, including music CDs, software and videos. These resources may only be checked out for one week at a time. However, the overdue fines are the same as they are for books.
6. There may be many copies of a particular resource, e.g. many copies of books with the same title.
7. Any checkable library resource may be renewed as long as no other library member has requested it.
8. Library members can browse the catalogue of resources to determine their status e.g. on the shelf, reference, out on loan, reserved etc.

Required Project Outputs for Case Study Assignment

1. Identify at least three actors and five Goals – put these in an Actor- goal table (refer to usecase101.doc)

2. Write three use case (use case text)in a single column format
3. Draw UML use case diagram.

Please refer to the Use Case 101 document before starting this project and use that document as a guideline.
Please read chapter 6 PowerPoint on Use cases
Include all the steps as shown in this document.

13 out of 17 students (76%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

2. Team Assignment: Domain Model Assignment
Create a domain model for the LIS system you worked on in the use case assignment

Follow the steps in creating a domain model

Show your work for each step in your document (ex: Conceptual class category, common association list etc..)

16 out of 17 students (94%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

3. Team Assignment: System Sequence Diagram.

To do:
1. Meet with your project partner and go over the use cases that you have developed for the Library Information System(LIS).

2 Identify 2 use cases and refine them so that it shows system interactions. (15)

3. Based on the two refined use cases develop two SSDs.(15)

4. Submit the refined use cases and the SSDs in one PDF document. The name of the document should be LastNamesOf theteammembers _SSD.

14 out of 17 students (82%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome:

1.3 Apply a development life cycle to a problem

Course Number/Name:

32 IT 430 Human Computer Interaction

To assess this outcome, students were required to design an Employment System as outlined below for their final project. Awareness of the roles of different users and the tasks they each will perform plus iterative design methodology used to refine their initial design will allow students to apply a development life cycle to a problem.

Designing an Employment System (Group Project)

Purpose: To provide an opportunity to design an object-oriented graphical user interface.
Method: Review the employment system information outlined below. Use this information to (1) conduct a noun analysis and identify potential user interface objects, (2) assign the objects to the appropriate user interface classes, (3) identify primary and secondary windows, (4) develop a menu bar and pull-down menu for each primary windows, (5) identify visual displays, (6) identify screen-based controls, and (7) device icons (if appropriate). Create personas for each user. Complete a paper prototype (iteration 1) for this system. Conduct usability testing making sure each user is able to perform tasks as outlined. Modify design for iteration 2 to incorporate improvements needed to enhance the usability of this system.

Major Steps in the employment Process

1. ***Candidates*** indicate that they are seeking a job at the company by
    a. Sending a resume, or
    b. Traveling to the employment office and completing a computer-based job application from.
2. ***Managers*** at the company who have job openings fill out employment requisitions.
3. ***Employment clerks*** ensure that candidate applications and manager requisitions are complete, properly coded, and correctly entered into the system.
4. ***Employment Specialists*** repeatedly operate the system, attempting to match candidates with openings, conduct initial interviews, and advertise job openings for which there are no (or very few) candidates.
5. For candidates that pass the initial employment specialist interview, the ***employment clerk***notifies both the candidate and manager, and a time is set for a manager's interview.

6. For candidates that pass the manager's interview
    a. An ***employment clerk***performs a background check to verify candidate information.
    b. An ***employment specialist***makes a formal offer.
7. After the job opening is filled, an ***employmentclerk*** removes
    a. The candidate's information from the candidate database, and
    b. The job from the job opening database.
8. ***Employment specialists*** monitor the employment process and provide periodic status report to management.

Contents of Application Form and Employee Requisition Forms

Application forms (completed by job candidates)

- Personal information (names, address, telephone number)
- Education (dates, degrees, and schools)
- Experience (dates, job titles, major job activities)
- Salary requirements

Employee requisition forms (completed by company managers)

- Educational requirements (degrees)
- Experience requirements (type and years required)
- Major activities performed in the job
- Salary range
- Date needed

Tasks for Job Candidates

Find the job categories of most interest (filter)
Find individual job descriptions of most interest
View (read and evaluate) one-page job summaries
Print one-page job summaries
Respond to a request to complete an application form (yes or no)
Complete a computer-based application form
Submit the computer-based application form

Tasks for Company Managers

Prepare an employee requisition

- Completes a computer-based form, or
- Searches to find a requisition for a past opening; then loads and modifies

Sends an employment requisition (request) to the employment specialist
Receives information on candidates from the employment specialist and reviews their qualifications
Informs the employment specialist of possible candidates for a manger's interview
Prepare for a manager's interview

- Provides the employment clerk with times available for conducting a manager's interview
- Reviews a candidate's information, including the results of the initial interview conducted by the employment specialist

Completes the manager's interview

Summarizes interview results into the candidate's record
Sends
A "not interested" message to the employment clerk, or
An "offer" to the employment specialist (how much, desired start date, and so on)
Receives general employment-related information from the employment specialist (e.g., hiring freezes, advertising status, hiring statistics)
Accesses overall employment statistics from time to time

Tasks for Employment Specialists

Runs the system's module that matches candidates and job openings
Identifies possible matches
Informs managers of potential candidates for their job openings
Determines the need to advertise openings
Informs managers of the need to advertise
Prepares advertising, including newspapers, radio, technical journals and the like
Evaluates candidate information, and inform managers of highly qualified candidates (even when no openings are available)
Receives feedback from managers on proposed candidates
Provides times available for conducting initial interviews to the employment clerk
Conduct initial interviews and summarizes the results in candidate's files
Receives "offers" (how much to pay, desired start date, and the like) from managers
Instructs the employment clerk to conduct a background check
Makes an official offer to a candidate (after a successful background check)
Receives the candidate's acceptance of an offer and sends the information to managers and the employment clerk
Prepares employment statistics, including
The number of new openings during the month
The number of new candidates during the month
The number of openings filled during the month
The number of candidates on file at the end of the month
The number of openings at the end of the month

Tasks for Employment Clerks

Enters information from résumés or application forms into the system
Ensures that the candidate's information is complete, properly coded, and correct
Ensures that the manager's employee requisitions are complete, properly coded, and correct
Conducts background checks for candidates before offers are made (verifies past employment, education), and records the results of background checks on candidate records
Determines available interview times from managers, employment specialists, and candidates and schedules interviews
Archives information on
Candidates hired

Candidates disqualified by interviews, background checks, or other
Candidates not interviewed by an employment specialist after 3 months

22 out of 26 students (84.6%) got at least 80 out of 100 points
Goal of 80% of students getting More than 80% WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome:

1.4 Design and Develop a Software Prototype

Course Number/Name:

32 IT 430 Human Computer Interaction

To assess this outcome, students were required to complete a paper prototype for an Employment System as described earlier.

22 out of 26 students (84.6%) got at least 80 point out of 100
Goal of 80% of students getting at least 80 points WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome: (Number and Description)

1.5 Use multiple computer system platforms, and understand the advantages of each.

Course Number/Name:

32IT315 System Admin I

Use multiple computer system platforms, and understand the advantages of each.

To assess this outcome students complete weekly hands-on labs, take a lab exam on the Linux OS, and are asked to answer essay questions on an exam:

Since there is no cost to obtaining Linux while Microsoft can be quite expensive to purchase, why have more companies not migrated to Linux more quickly? Be thorough in your answer. (6 points)

How would you counter the argument that Linux is inherently less secure than Windows because it is open source? (6 points)

40 out of 49 students (81.6%) got at least 12 out of 16 points on these questions.
Goal of 70% of students getting 5 points WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Engineering &Applied Science
University of Cincinnati

Assessment Date: Winter 2010

Program Outcome:

1.6 Comprehend system integration and architecture principles

Course Number/Name:

20 IT 301 Systems Analysis and Design I

Assessment

Midterm – selected questions

- Which are the three architectural layers in a typical Object-oriented system? List and explain each layer.
- List and explain three benefits of iterative development.
- What are the three parts of a domain model? Explain each of them.

13 out of 17 students (76%) achieved more than 70 % in the Midterm

Goal of 70% achieved 70% or more was met.

Final Test Selected Questions

- What is pattern? Describe Information Expert pattern.
- Discuss how the patterns "Low coupling" and "High cohesion" can be opposing at times.
- Name the two types of interaction diagrams. Explain a strength and weakness each of both the type.

14 out of 17 students (82%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

Assignments.

The students have to develop use cases, use case diagram, Domain model and System Sequence Diagram for a software application.

13 out of 17 students (76%) achieved more than 70 % in the above-mentioned assignments.

Goal of 70% achieved 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2010

Program Outcome: (Number and Description)

2.1 Design a relational database

Course Number/Name:

32-IT-209 Introduction to Database

This outcome is assessed by the mid-term project and the final project

Mid-Term project:

The mid-term is open book individual work. You are not allowed to use other people's work or to consult with others. You are not allowed to use templates or submit work created by others or found on the Internet. You should start with a blank database and do all the work yourself.

Dr. U. R. Sick is the administrator of General Hospital. He is interested in creating a database for the hospital patients, where patients come for emergency treatment. As a patient arrives for the first time, we need to record some basic information, such as name, address, and phone number, about each patient. In addition, we need to know which insurance companies cover the patient. It is common for patients coming to this clinic to be covered by more than one insurance company. To assist with billing, we need to keep a list of the insurance companies our patients use, so that we have the company name, phone number and contact name for each insurance company. Because the clinic is really for emergencies, we need to keep track of the patient's family doctor so we can send information to them. Each patient is associated with one family doctor. To assist with the contact process, we maintain a doctor list that includes the doctor's name, beeper number and office phone number.

You are to design the database that is needed by the hospital administrator. You need to populate the database with at least 10 records in each of the tables you design

Create the tables and the relationships. Use the description fields in the table design view to justify your decisions for each field in the table and the way you set the properties. Use each property in the table fields as appropriately needed.

The administrator would like to be able to enter the required data using user-friendly forms. He would like to have as few forms as possible.

He also would like to be able to issue a report about the patients and their insurance information and their family doctors. He also would like to issue a report of the insurance companies, the patients from that company and their insurance information. Finally, he would

like to issue a report for each family doctor and the patients that follow up with each doctor. The report should have the name of the hospital and the title as well as today's date. It should be formatted to display all the data.

Requirements:

- Use Access to build the tables and the relationships (55%)
    - Table design and relationships (25%)
    - Field properties (25%)
    - Populate the fields with data (5%)
- Forms to enter data (15%)
- Queries (20%)
- Reports (10%)

Extra Credit:

- Use visio to design the database – 25%

Your database names should be midTerm_YourLastname. The visio file (optional) should be named midterm_YourLastName

Submit the database file and visio file (optional) using the blackboard link. Only submissions through the blackboard link before the deadline will be accepted.

21 out of 40 students (52.5%) achieved more than 80 %.

Goal of 70% achieved 80% or more was not met

Final project:

The Project: You are to apply what you learned in the Introduction to Database class in creating a fully functional database application for a real life organization or business. You are to choose the business that you will create the database for. The database application should include ALL elements that we discussed in the class. You can get ideas from the assignments of the book, your hobbies, and businesses around you and so on.

Phase 1:

- Describe the physical system for which you will create the database
- Develop a "wish list" describing the information the system is to produce
- Design a database capable of producing the required information. The database should be in the third normal form
- Pay attention to the properties of each field, use adequate data validation and input masks as appropriate

Submit a report that contains:

- Description of the physical system. Your system should be complex enough to generate at least 5 different types of reports.
- The wish list

Submit a database file that contains:

- Tables (with 20 records)

- Relationship diagram
- Due Date: **November 30, 2010 by 11:55 PM EST**

Phase 2:

- Create the needed reports. All reports should be based on queries.
- All reports should follow a design template, so that the design, logo, color scheme are all consistent
- Submit your database file
- Due Date: **December 2, 2010 by 11:55 PM EST**

Phase 3:

- Create the needed reports. All reports should be based on standalone queries not embedded ones.
- All reports should follow a design template, so that the design, logo, color scheme are all consistent
- You are required to have at least 5 reports. Reports based on tables that simply lists the records of a table are not part of the required 5 reports. Reports should demonstrate sophistication in the information it provides.
- All necessary forms needed for your application
- The database should open an introductory form automatically. The introductory form should include your name and description of your application. When the user closes the introductory form, the main form switch board should open
- The forms should provide navigation to the different forms and reports in the database
- The forms must include the user of macros and modules to automate or control the user experience
- The navigation pane should be customized
- You should use minimum number of forms and use suitable controls to organize the data
- Submit your database file
- Due Date:**December 9, 2010 by 11:55 PM EST**

28 out of 40 students (70%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Note:
Students achieved significant progress from the mid-term to the final in understanding how to design a database (17.5% improvement)

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn-2010 Quarter

Program Outcome: (Number and Description)

2.1 Design a relational database

Course Number/Name:

IT-309 Database Management

Program Outcome: 2.1 Design a relational database

To access this outcome, students must complete two projects, and take quizzes with appropriate questions.

Note: This class was done entirely online. A total of 45 students started this class and 7 students later dropped it.

Out of 45 students:
34 (76%) were able to complete the task with a 70% or better;
7 students were between 40-69% and were able to complete this later for a reduced score;
4 students did not complete the task and 3 of those dropped the class.

Week 2 of the quarter
Project 1: Create a database for this course using your last name as the name of the database on your database server. Set its initial size to 3 MB with a growth of 1 MB. The log file should have an initial size of 1 MB and a growth of 1 MB. Submit your database via Blackboard. This database is to based off of the one found in the book called ApressFinancialDB.

Out of 44 students:
34(76%) were able to complete the task with a 70% or better;
4 students were between 40-69% and were able to complete this later for a reduced score;
6 students did not complete the task and 5 of those dropped the class.

Week 6 of the quarter
Midterm Project
Database Design
You are asked to develop an operational database system for a small pizza store. The store has the following products:

Small pizza – thin	Meatball hoagie
Small pizza – thick	Fish hoagie
Medium pizza – thin	Steak and cheese hoagie

Medium pizza – thick	Pepsi (regular and diet)
Large pizza – thin	Mt. Dew
Large pizza – thick	Dr. Pepper

Pizza toppings include pepperoni, sausage, bacon, ham, ground beef, onion, green peppers, banana peppers, mushrooms, and pineapple.

The database system should keep track of orders, employees, and inventory. You may use any examples of similar such design to aid in your database design. You may want to look at the queries in question 6 to help guide you as well. You will need to insert at least 10 rows into each table in order to help you will the queries.

1. Create the database. Use the name of Pizza_your-lastname, -- for example I would name it Pizza_mcmahon. You may take the defaults on this one.

2. Using the pizza database you just created, create the tables for your pizza store database in your SQL Server database. Be sure to make sure your database design is acceptable first. Make sure each table has a primary key and any required foreign keys. Use appropriate data types and you may make appropriate use of nulls. You may take the appropriate defaults. Paste each of your SQL statements below.

3 Write an insert statement to add a record to each of the tables. Every column must have a value -- do not insert any null values. Paste the statements below.

4. Create the database relationships design. You will need to do a screen capture of your design and paste it here.

Queries section (5 of them in total) Paste your SQL after each question.
Place at least 10 rows of data into each table.

5. Write a query that:
   List all toppings available in your pizza store in alphabetic order.
6. Write a query that:
   List all orders with an order date between 10/1/2009 and 1/31/2010.
   (must use between…and… operator)
7. Write a query that:
   List all items on your menu that have a price less than $5.00.
8. Write a query that:
   List all menu items whose names start with the letters A through K.
   (must use LIKE operator)
9. Write a query that:
   List the order numbers of all orders that do not include a pizza. (First make sure you have such orders in your data.) (must use IN operator)

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2010

Program Outcome: (Number and Description)

2.2 Implement a relational database

Course Number/Name:

32-IT-209 Introduction to Database

This outcome is assessed by the mid-term project and the final project

Mid-Term project:

The mid-term is open book individual work. You are not allowed to use other people's work or to consult with others. You are not allowed to use templates or submit work created by others or found on the Internet. You should start with a blank database and do all the work yourself.

Dr. U. R. Sick is the administrator of General Hospital. He is interested in creating a database for the hospital patients, where patients come for emergency treatment. As a patient arrives for the first time, we need to record some basic information, such as name, address, and phone number, about each patient. In addition, we need to know which insurance companies cover the patient. It is common for patients coming to this clinic to be covered by more than one insurance company. To assist with billing, we need to keep a list of the insurance companies our patients use, so that we have the company name, phone number and contact name for each insurance company. Because the clinic is really for emergencies, we need to keep track of the patient's family doctor so we can send information to them. Each patient is associated with one family doctor. To assist with the contact process, we maintain a doctor list that includes the doctor's name, beeper number and office phone number.

You are to design the database that is needed by the hospital administrator. You need to populate the database with at least 10 records in each of the tables you design

Create the tables and the relationships. Use the description fields in the table design view to justify your decisions for each field in the table and the way you set the properties. Use each property in the table fields as appropriately needed.

The administrator would like to be able to enter the required data using user-friendly forms. He would like to have as few forms as possible.

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like to issue a report for each family doctor and the patients that follow up with each doctor. The report should have the name of the hospital and the title as well as today's date. It should be formatted to display all the data.

Requirements:

- Use Access to build the tables and the relationships (55%)
    - Table design and relationships (25%)
    - Field properties (25%)
    - Populate the fields with data (5%)
- Forms to enter data (15%)
- Queries (20%)
- Reports (10%)

Extra Credit:

- Use visio to design the database – 25%

Your database names should be midTerm_YourLastname. The visio file (optional) should be named midterm_YourLastName

Submit the database file and visio file (optional) using the blackboard link. Only submissions through the blackboard link before the deadline will be accepted.

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Final project:

The Project: You are to apply what you learned in the Introduction to Database class in creating a fully functional database application for a real life organization or business. You are to choose the business that you will create the database for. The database application should include ALL elements that we discussed in the class. You can get ideas from the assignments of the book, your hobbies, and businesses around you and so on.

Phase 1:

- Describe the physical system for which you will create the database
- Develop a "wish list" describing the information the system is to produce
- Design a database capable of producing the required information. The database should be in the third normal form
- Pay attention to the properties of each field, use adequate data validation and input masks as appropriate

Submit a report that contains:

- Description of the physical system. Your system should be complex enough to generate at least 5 different types of reports.
- The wish list

Submit a database file that contains:

- Tables (with 20 records)

- Relationship diagram
- Due Date: **November 30, 2010 by 11:55 PM EST**

Phase 2:

- Create the needed reports. All reports should be based on queries.
- All reports should follow a design template, so that the design, logo, color scheme are all consistent
- Submit your database file
- Due Date: **December 2, 2010 by 11:55 PM EST**

Phase 3:

- Create the needed reports. All reports should be based on standalone queries not embedded ones.
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IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn-2010 Quarter

Program Outcome: (Number and Description)

2.2 Implement a relational database

Course Number/Name:

IT-309 Database Management

Program Outcome: 2.2 Implement a relational database

To access this outcome, students must complete several hands-on labs and take quizzes with appropriate questions.

Week 2 of the quarter

Project 1: Create a database for this course using your last name as the name of the database on your database server. Set its initial size to 3 MB with a growth of 1 MB. The log file should have an initial size of 1 MB and a growth of 1 MB. Submit your database via Blackboard. This database is to based off of the one found in the book called ApressFinancialDB.

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Week 6 of the quarter

Midterm Project

Database Design

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Pizza toppings include pepperoni, sausage, bacon, ham, ground beef, onion, green peppers, banana peppers, mushrooms, and pineapple.

The database system should keep track of orders, employees, and inventory. You may use any examples of similar such design to aid in your database design. You may want to look at the queries in question 6 to help guide you as well. You will need to insert at least 10 rows into each table in order to help you will the queries.

1. Create the database. Use the name of Pizza_your-lastname, -- for example I would name it Pizza_mcmahon. You may take the defaults on this one.

2. Using the pizza database you just created, create the tables for your pizza store database in your SQL Server database. Be sure to make sure your database design is acceptable first. Make sure each table has a primary key and any required foreign keys. Use appropriate data types and you may make appropriate use of nulls. You may take the appropriate defaults. Paste each of your SQL statements below.

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5. Write a query that:
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6. Write a query that:
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   (must use between…and… operator)
7. Write a query that:
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8. Write a query that:
   List all menu items whose names start with the letters A through K.
   (must use LIKE operator)
9. Write a query that:
   List the order numbers of all orders that do not include a pizza. (First make sure you have such orders in your data.) (must use IN operator)

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IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2010

Program Outcome: (Number and Description)

2.3 Query a relational database

Course Number/Name:

32-IT-209 Introduction to Database

This outcome is assessed by the mid-term project and the final project

Mid-Term project:

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like to issue a report for each family doctor and the patients that follow up with each doctor. The report should have the name of the hospital and the title as well as today's date. It should be formatted to display all the data.

Requirements:

- Use Access to build the tables and the relationships (55%)
    - Table design and relationships (25%)
    - Field properties (25%)
    - Populate the fields with data (5%)
- Forms to enter data (15%)
- Queries (20%)
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Extra Credit:

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Submit a database file that contains:

- Tables (with 20 records)

- Relationship diagram
- Due Date: **November 30, 2010 by 11:55 PM EST**

Phase 2:

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- All reports should follow a design template, so that the design, logo, color scheme are all consistent
- Submit your database file
- Due Date: **December 2, 2010 by 11:55 PM EST**

Phase 3:

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Goal of 70% achieved 80% or more was met

Note:
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IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn-2010 Quarter

Program Outcome: (Number and Description)

2.3 Query a relational database

Course Number/Name:

IT-309 Database Management

To access this outcome, students must complete several hands-on labs and take quizzes with appropriate questions.

Program Outcome 2.3 Query a relational database

Note: This assignment was given in week 2 of the quarter so it was a bit early for the students to have mastered the material. A later test in week 5 shows improvement

Week2 Assessment -- Out of 45 Students:
19 (42%) students got a 70% or higher
20 students got less than 70%
6 students did not do the assignment (3 eventually withdrew from the class)

Week5 Assessment -- Out of 44 Students:
37 (82%) students got a 70% or higher
2 students got less than 70%
5 students did not do the assignment eventually all 5 students withdrew from the class

Week2

1	Suppose we wish to view the Order ID number, the Customer name, order date and freight charges for all of our orders in the Northwind database. (830 rows returned)	
2	Suppose we want to know how much freight each customer paid. (89 rows returned)	
3	Suppose you want a list of customers' addresses. (91 rows returned)	
4	Suppose we want to calculate the new unit prices of all of our beverages if we raise the prices by 10%. (12 rows effected)	
5	Update the products table to reflect the new prices for beverages. If you run this Update query again, you will increase the unit price of the beverages another 10%!!!!!	

6	Suppose we no longer are going to carry condiments. Delete all condiment records from the products table. For this exercise we will use the Products table backup because the tables are linked and therefore we would not be allowed to delete these products from the original table. (12 rows are deleted)	
7	Suppose we want a list of all products in inventory for which there are not enough units in stock.	
8	Suppose we want to know how many products of each category type we offer for sale. How many different beverages, condiments, etc.	
9	What is the smallest order we have? The largest? The average? How many orders? The total of all orders?	
10	Suppose we want know which employees are selling which products.	
11	Retrieve all the names of customers who purchased tofu in April, 1998, along with the quantity and date of each purchase.	
12	Add a new shipper, ParcelForce, with telephone number 0800-224466. Hint: you will need to use an INSERT command, setting companyname and phone (companyid is automatically assigned by Access).	
13	List all suppliers without a Region List the Company Name and Contacts who don't belong to a Region from the Suppliers table.	
14	Display cities in UK where we have suppliers and customers using a union	
15	Count how many customers live in Spain and Venezuela	
16	List countries with more than 5 customers and show the number of customers in that country	

Week5 Assessment

- **Question 1: Multiple Choice**
  Average Score 7.08 points

I am looking for all orders made in the month of June, 1997. Which of the following date formats is incorrect.
Select ...From ... Where Orders.OrderDate between

Correct		Percent Answered
✓	'Jun-01-1997'and'Jun-30-1997'	70.833%
	'6/1/1997'and'6/30/1997'	4.167%
	'1997-06-02'and'1997-06-30'	8.333%
	'June 1, 1997' and 'June 30, 1997'	8.333%
	Unanswered	8.333%

- **Question 2: Multiple Choice**

Average Score 8.75 points

Retrieve all the names of customers who purchased tofu. Pick the best query for this.

Correct		Percent Answered
	SELECT Customers.ContactName FROM Customers CROSS JOIN Products WHERE Products.ProductName = 'Tofu'	0%
	SELECT Customers.ContactName FROM Customers, Products WHERE Products.ProductName = 'Tofu'	4.167%
✓	SELECT Customers.ContactName FROM Customers INNER JOIN Orders ON Customers.CustomerID = Orders.CustomerID INNER JOIN [Order Details] ON Orders.OrderID = [Order Details].OrderID INNER JOIN Products ON [Order Details].ProductID = Products.ProductID WHERE Products.ProductName = 'Tofu'	87.5%
	SELECT Customers.CompanyName FROM Customers INNER JOIN Orders ON Customers.CustomerID = Orders.CustomerID INNER JOIN [Order Details] ON Orders.OrderID = [Order Details].OrderID INNER JOIN Products ON [Order Details].ProductID = Products.ProductID INNER JOIN Categories ON Products.CategoryID = Categories.CategoryID WHERE Products.ProductName = 'Tofu'	4.167%
	Unanswered	4.167%

- **Question 3: Multiple Choice**
  Average Score 8.75 points

Return the top 10 products whose unitprice is between $0.00 and $10.00.

Correct		Percent Answered
	SELECT TOP 10 * FROM [Northwind].[dbo].[Products] WHERE UnitPrice BETWEEN 0 AND 11	0%
	TOP 10 SELECT * FROM [Northwind].[dbo].[Products] WHERE UnitPrice BETWEEN 0 AND 10	4.167%
	SELECT * FROM [Northwind].[dbo].[Products] WHERE UnitPrice BETWEEN 0 AND 10 AND COUNT(*) = 10	0%
✓	SELECT TOP 10 * FROM [Northwind].[dbo].[Products] WHERE UnitPrice BETWEEN 0 AND 10	87.5%

	Unanswered	8.333%

- **Question 4: Multiple Choice**
  Average Score 9.17 points

Bring back all employee information for employees whose regions is null.

Correct		Percent Answered
☑	SELECT * FROM Employees WHERE Region Is Null	91.667%
	SELECT * FROM Employees WHERE Region = Null	4.167%
	SELECT * FROM Employees WHERE Region ''	0%
	SELECT * FROM Employees WHERE Region IsNull	0%
	Unanswered	4.167%

- **Question 5: Multiple Choice**
  Average Score 7.08 points

The syntax used in SQL Server to return the top n rows is:

Correct		Percent Answered
	SELECT column_name(s) FROM table_name LIMIT number	8.333%
☑	SELECT TOP number|percent column_name(s) FROM table_name	70.833%
	SELECT column_name(s) FROM table_name WHERE ROWNUM <= number	8.333%
	SELECT column_name(s) FROM table_name WHERE Top = number	0%
	Unanswered	12.5%

- **Question 6: Multiple Choice**
  Average Score 8.75 points

The general syntax for an Insert statement is:

Correct		Percent Answered
☑	INSERT INTO table_name (column1, column2, column3,...) VALUES (value1, value2, value3,...)	87.5%

	INSERT table_name (column1, column2, column3,...) VALUES (value1, value2, value3,...)	0%
	INSERT INTO table_name (column1=value1, column2=value2, column3=value3,...)	0%
	INSERT VALUES (value1, value2, value3,...) INTO table_name (column1, column2, column3,...)	0%
	Unanswered	12.5%

- **Question 7: Multiple Choice**
  Average Score 8.33 points

The DBCC CHECKINDENT is just one of about _____ Database Console Commands.

Correct		Percent Answered
	5	0%
	10	4.167%
	20	0%
✅	30	83.333%
	Unanswered	12.5%

- **Question 8: Multiple Answer**
  Average Score 6.67 points

Which of the following are considered types of constraints?

Correct	Answers	Percent Correct	Percent Incorrect
✅	NOT NULL	75%	25%
✅	UNIQUE	91.667%	8.333%
✅	PRIMARY KEY	87.5%	12.5%
✅	CHECK	87.5%	12.5%
✅	DEFAULT	79.167%	20.833%
	CLUSTERED	100%	0%

- **Question 9: Multiple Choice**
  Average Score 8.75 points

The _____ constraint enforces a column to NOT accept null values.

Correct		Percent Answered
	NULLS NOT ALLOWED	0%
✅	NOT NULL	87.5%
	REQUIRED	0%
	DEFAULT	0%
	Unanswered	12.5%

- **Question 10: Multiple Choice**

Average Score 9.17 points

In order to add a constraint to a table after it has been created you must use the _____ command.

Correct		Percent Answered
	You must drop the table and recreate it the way you want it.	0%
	ALTER COLUMN	0%
	ALTER CONSTRAINT	0%
☑	ALTER TABLE	91.667%
	Unanswered	8.333%

- **Question 11: Multiple Choice**
  Average Score 8.75 points

What does the WITH NOCHECK option mean when it is included with the ADD CONSTRAINT command?

Correct		Percent Answered
☑	This informs the database that any existing data in the table will not be validated when it adds the table alteration with the constraint and that only the data modified or inserted after the addition of the constraint will be checked.	87.5%
	This informs the database that any existing data in the table will not be validated when it adds the table alteration with the constraint including any data modified or inserted after the addition of the constraint.	4.167%
	This informs the database that any existing data in the table cannot be used until it verified.	0%
	This informs the database to not to validate any newly added rows after the table alteration.	4.167%
	Unanswered	4.167%

- **Question 12: Multiple Choice**
  Average Score 9.17 points

If you want to return all the rows in the following query, what should the rowcount value be set to.

```
SET ROWCOUNT rowcount_value
SELECT [Order Details_1].OrderID, Customers.ContactName
 , Orders.Freight, Orders.OrderDate
FROM Customers INNER JOIN [Order Details] AS [Order Details_1]
 INNER JOIN Orders ON [Order Details_1].OrderID = Orders.OrderID
 ON Customers.CustomerID = Orders.CustomerID
```

Correct		Percent Answered
☑	0	91.667%
	1	0%
	all	0%
	infinity	4.167%
	Unanswered	4.167%

- **Question 13: Multiple Choice**

Average Score 8.75 points

I want a query that returns the FirstName and LastName of employees concatenated together.
Which of the following queries does this correctly?

Correct		Percent Answered
	SELECT FirstName, LastName FROM Employees	0%
	SELECT FirstName + LastName FROM Employees	8.333%
✅	SELECT FirstName + ' ' + LastName FROM Employees	87.5%
	SELECT FirstName & ' ' & LastName FROM Employees	0%
	Unanswered	4.167%

- **Question 14: Multiple Choice**
  Average Score 8.75 points

I want a query that returns the first initial of the FirstName and the full LastName of employees concatenated together.
Which of the following queries does this correctly?

Correct		Percent Answered
	SELECT Cast(FirstName,1) + ' ' + LastName FROM Employees	0%
	SELECT LTrim(FirstName,1) + ' ' + LastName FROM Employees	0%
	SELECT First(FirstName,1) + ' ' + LastName FROM Employees	4.167%
✅	SELECT Left(FirstName,1) + ' ' + LastName FROM Employees	87.5%
	Unanswered	8.333%

- **Question 15: Multiple Answer**
  Average Score 6.25 points

Pick the special operators that can be used with the LIKE operator.

Correct	Answers	Percent Correct	Percent Incorrect
✅	%	83.333%	16.667%

☑	_	83.333%	16.667%
	*	91.667%	8.333%
☑	[ ]	75%	25%
☑	[^]	75%	25%
	{ }	100%	0%

- **Question 16: True/False**
  Average Score 8.75 points

A DELETE FROM table_name is more efficient than issuing a TRUNCATE table_name.

Correct	Answers	Percent Answered
	True	4.167%
☑	False	87.5%
	Unanswered	8.333%

- **Question 17: True/False**
  Average Score 9.17 points

A PRIMARY KEY constraint automatically has a UNIQUE constraint defined on it.

Correct	Answers	Percent Answered
☑	True	91.667%
	False	0%
	Unanswered	8.333%

- **Question 18: True/False**
  Average Score 8.75 points

A primary key may contain a null value.

Correct	Answers	Percent Answered
	True	4.167%
☑	False	87.5%
	Unanswered	8.333%

- **Question 19: True/False**
  Average Score 9.17 points

Use the following table:
CREATE TABLE Orders
(
O_Id int NOT NULL,
OrderNo int NOT NULL,
P_Id int,
OrderDate date DEFAULT GETDATE()
)
If a row is inserted into the table and no date is supplied, the database will automatically insert the current date.

Correct	Answers	Percent Answered
✅	True	91.667%
	False	0%
	Unanswered	8.333%

- **Question 20: True/False**
  Average Score 9.17 points

A unique constraint may contain one null value.

Correct	Answers	Percent Answered
✅	True	91.667%
	False	4.167%
	Unanswered	4.167%

- **Question 21: True/False**
  Average Score 9.58 points

The TRUNCATE table statement also drops the table structure.

Correct	Answers	Percent Answered
	True	

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn-2010 Quarter

Program Outcome: (Number and Description)

2.4 Secure database management systems

Course Number/Name:

IT-309 Database Management

To access this outcome, students must complete several hands-on labs and take quizzes with appropriate questions.

Program Outcome 2.5 Secure database management systems

Out of 45 Students:
29 (64%) students received a score of 70% or better.
13 students received a score of <70%
3 students did not take the test (2 of them eventually withdrew from the class)

SQL Server Security Test

Question01 By default, the local Windows Group BUILTIN\Administrator is no longer included in the SQL Server sysadmin fixed server role on new SQL Server 2008 installations.
Answer True

Question02 Beginning in SQL Server 2008, the Surface Area Configuration tool has been removed. The features of the Surface Area Configuration tool that control SQL Server behavior have been replaced and greatly enhanced in the _____ feature.
Answer Policy-Based Management

Question03 You can encrypt data without modifying applications by using _____.
Answer Transparent Data Encryption or TDE

Question04 What command should you use to create new logins?
Answer Create Login
Create User
sp_addlogin
sp_adduser

Question05 If no default database is specified, the ____ database will be the default.
Answer Current
MSDB
Master
Sample

Question06 The _____ roles are used to limit the amount of administrative access that a user has once they have logged onto SQL Server.

Answer database
user defined
guest
fixed server

Question07 Every SQL Server login belongs to this server role.
Answer Guest
Public
Admin
User

Question08 The fixed server role that allows the user to create & delete logins.
Answer securityadmin
loginadmin
dbcreator
setupadmin

Question09
By default, the database includes a _____ user when a database is created. Permissions granted to the _____ user are inherited by users who do not have a user account in the database. The _____ user cannot be dropped, but it can be disabled by revoking its CONNECT permission.
Answer guest

Question10 Beginning with SQL Server 2005, each user has a default schema. The default schema can be set and changed by using the DEFAULT_SCHEMA option of CREATE USER or ALTER USER. If DEFAULT_SCHEMA is left undefined, the database user will have _____ as its default schema.
Answer dbo
guest
database owner
default

Question11 Entities that can request SQL Server resources are called _____
Answer guests
principals
objects
schemas

Question12What are the different kinds of principals?
Answer Windows-level, SQL Server-level, Database-level

Question13 What is the command that is used to give permissions to the Create statements?
Answer grant

Question14 What is the name of the fixed database role that can add or remove users?
Answer db_ddladmin
db_securityadmin
db_accessadmin
dbm_monitor

Question15 The [1] statement can be used to remove granted permissions, and the [2] statement can be used to prevent a principal from gaining a specific permission through a GRANT.
Answers for: 1 REVOKE
Answers for: 2 DENY

Question16 When multiple database objects access each other sequentially, the sequence is known as a _____.

Answer chain

Question17 When SQL Server traverses the links in a chain, it evaluates permissions on the constituent objects the same as it would if it were accessing the objects separately.
Answer False

Question18 These system stored procedures can be used from within your own applications to create traces manually, instead of using SQL Server Profiler.
Answer SQL Monitor
DDL Trace
DDL Monitor
SQL Trace

Question19 The primary SQL Server utility for tracking and recording all activity on a SQL Server installation.
Answer SQL Profiler
SQL Monitor
SQL Trace
sys.dm_audit_actions

Question20 _____ security is a government standard for a high level of resistance to attack.
Answer D1
NIST
TopSecret
C2

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

2. Develop Database Applications
2.5 Integrate relational database into applications

Course Number/Name:

32IT207 – Computer Programming III

This outcome is assessed by Lab 6 and the JDBC option of Assignment 3:

Lab 6 – Java database programming with JDBC.

12 out of 23 students (52%) achieved more than 80 %.

Goal of 70% achieved 80% or more was not met

Assignment 3 – Java Swing GUI programming, JDBC option.

20 out of 23 students (87%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: May 2011

Program Outcome: (Number and Description)

2.5 Integrate relational database into applications

Course Number/Name:

IT-309 Database Management

To access this outcome, students must complete several hands-on labs and take quizzes with appropriate questions.

Program Outcome 2.5 Secure database management systems

Stored Procedure Project : The Orders and OrderDetails tables in your database should have a one-to-many relationship. Write a stored procedure that accepts an OrderID which is the primary key of one table and the foreign key in the other table. The procedure should delete related rows with this key value from both tables as an explicit transaction. Add error handling and rollback the transaction if an error occurred. Test the stored procedure to make sure it works properly.

Out of 38 students
31 students (82%) scored above 70% on this project.
2 students were less than 70% and 5 students did not complete the work on time (3 of those were able to produce the work later.)

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: June 2010

Program Outcome: (Number and Description)

3.1 Apply and explain network protocols.

Course Number/Name:

IT275 Intro to Networking

To assess this outcome students are asked to answer an essay question on an exam (they also apply this knowledge during their labs):

Which protocol suite is used for Internet communications? Explain what is meant by a protocol suite.

28 out of 41 students (68.3%) were able to get 7 out of 10 points on this question.
Goal of 70% of students getting credit was NOT met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: April 2011

Program Outcome: (Number and Description)

3.2 Implement a variety of network configurations.

Course Number/Name:

32IT275 Intro to Networking

Implement a variety of network configurations.

To assess this outcome students are asked to complete the following on a quiz:

If you were the network administrator for a small company, draw a diagram (with labels on equipment) of how you would setup their network and **explain** why you chose that configuration. The company resides in a two story building. The first floor consists of 10 offices with a computer in each of them and two network printers. The second floor consists of three conference/training rooms each of which holds five computers. All of the computers require network access and the company has two servers for authentication and data storage. Each floor has closets capable of storing networking equipment and the connection to the company's internet service provider comes into the closet on the second floor. (18 points)

27 out of 41 students (65.9.4%) were able to get 6 out of 8 points on this question.
Goal of 70% of students getting credit was NOT met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome: (Number and Description)

3.3 Install and administer network services.

Course Number/Name:

32IT315 System Admin I

To assess this outcome students are asked on their practical/lab exam to setup either a file sharing or web service depending on which copy of the exam they get (they also perform both tasks during their lab):

Start the Apache service on your Linux system (3 points)
*Set **/files** to be the location of the Apache webpages on your Linux system (3 points)*

Start the Samba service on your Linux system (3 points)
*Create a Samba share out of **/files** on your Linux system (3 points)*

24 out of 49 students (49%) were able to on manage the service at with minimal errors (4.5 points out of 6).

Goal of 70% of students getting credit was not met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: June 2010

Program Outcome: (Number and Description)

3.4 Protect and secure users' information on a computer network.

Course Number/Name:

32IT275 Intro to Networking

To assess this outcome students perform labs setting file permissions and are asked on their practical/lab exam to:

*Create the directory **C:\Data\HR** and set the local permissions such only the **Management** group can access it (with Full permissions). (3 points)*

34 out of 41 students (82.9%) got at least 2 out of 3 points on these combination of tasks.
Goal of 80% of students getting 2 points WASmet.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome: (Number and Description)

3.4 Protect and secure users' information on a computer network

Course Number/Name:

32IT315 System Administration I

To assess this outcome students perform labs setting file permissions and are asked on their practical/lab exam to either assign ownership to a file or set permissions on a file, depending on which version of the exam they get:

*Give **maya** ownership of the **/files** directory on your Linux system (3 points)*
*Give the manager's group write access to the **/files** directory on your Linux system (3 points)*

40 out of 49 students (81.6%) got at least 2 out of 3 points on these combination of tasks.
Goal of 80% of students getting 5 points WASmet.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter-2011 Quarter

Program Outcome: (Number and Description)

3.5 Protect and secure organizations' computer network

Course Number/Name:

32IT313 Information Security and Privacy

To assess this outcome, the grade on the following three tests was used.

InfoSec Final Exam

Test1 Results
Out of 29 students

All (100%) students passed the test with a grade of 70% or higher

Test2 Results
Out of 29 students

25 (86%) students passed the test with a grade of 70% or higher.
4 students received a grade <70%

Test3 Results

25 (86%) students passed the test with a grade of 70% or higher.
3 students received a grade <70%

Note: These 3 tests take up 92 pages so only the first two pages were printed out.

Name 11W-Test1

Question 1: Multiple Choice
Average Score 3.53 points

In a managed code environment you do not have to worry about what type of threat?

Correct		Percent Answered
☑	Buffer overflow	35.294%
	Canolicalization	26.471%
	SQL Injection	26.471%
	Integer Overflow	11.765%
	Unanswered	0%

- **Question 2: Multiple Choice**

Average Score 3.82 points

The queen who used a man-in-the-middle attack to successfully defeat a rival queen.

Correct		Percent Answered
	Victoria	29.412%
✅	Elizabeth	38.235%
	Mary	32.353%
	Latifah	0%
	Unanswered	0%

- **Question 3: Multiple Choice**

Average Score 1.76 points

The act of using someone's authentication cookie to gain access under a faux identity.

Correct		Percent Answered
	XML Injection	23.529%
	Network Eavesdropping	23.529%
	XSS	35.294%
✅	HTTP Replay	17.647%
	Unanswered	0%

- **Question 4: Multiple Choice**

Average Score 5.59 points

The ability of attacking a system and leaving no trace behind.

Correct		Percent Answered
	CYA Attack	20.588%
✅	Repudiation Attack	55.882%
	Session Hijacking	20.588%
	Response Splitting	2.941%
	Unanswered	0%

- **Question 5: Multiple Choice**

Average Score 3.24 points

Allows the possibility of taking control of a person's computer.

Correct		Percent Answered
✅	XSS	32.353%
	LDAP Injection	26.471%
	Forceful Browsing	35.294%
	HTTP Replay	5.882%
	Unanswered	0%

- **Question 6: Multiple Choice**

Average Score 6.47 points

One of the easiest forms of a SQL Injection attack is to try concatenating ____ to the SQL string.

Correct		Percent Answered

	AND 1=1	17.647%
✅	OR 1 = 1	64.706%
	NOT 1=1	5.882%
	XOR 1=1	11.765%
	Unanswered	0%

- **Question 7: Multiple Choice**
  Average Score 3.24 points

The Microsoft Threat and Analysis Modeling tool is based upon the ____ model.

Correct		Percent Answered
	DREAD	8.824%
	STRIDE	55.882%
✅	CIA	32.353%
	NIST	2.941%
	Unanswered	0%

- **Question 8: Multiple Choice**
  Average Score 7.35 points

The Microsoft Security Development Lifecycle tool uses ____ to map out a system and model the key points where security is needed.

Correct		Percent Answered
	use case diagrams	5.882%
	entity relationship diagrams	17.647%
	storybook diagrams	0%
✅	data flow diagrams	73.529%
	Unanswered	2.941%

- **Question 9: Multiple Choice**
  Average Score 7.35 points

Impersonating something or someone else.

Correct		Percent Answered
✅	spoofing	73.529%
	aliasing	11.765%
	decoy	0%
	imposter	14.706%
	Unanswered	0%

- **Question 10: Multiple Choice**
  Average Score 9.41 points

Modifying code or data without authorization.

Correct		Percent Answered
	rendering	2.941%
	modification	2.941%
	meddle	0%

✅	tampering	94.118%
	Unanswered	0%

- **Question 11: Multiple Choice**
  Average Score 5 points

The NR-CIA3 model is equivalent to the ____ model.

Correct		Percent Answered
	DREAD	11.765%
	OWASP	14.706%
✅	STRIDE	50%
	TAM	23.529%
	Unanswered	0%

- **Question 12: Multiple Choice**
  Average Score 6.18 points

What does DoS map to?

Correct		Percent Answered
	Authentication	20.588%
	Integrity	11.765%
	Authorization	5.882%
✅	Availability	61.765%
	Unanswered	0%

- **Question 13: Multiple Choice**
  Average Score 4.12 points

What does elevation of privilege mean?

Correct		Percent Answered
	the ability of a user to elevate their privileges by signing on to a system with a higher level user	47.059%
✅	the ability of a user to elevate their privileges with an application without authorization	41.176%
	the ability of a user to elevate their privileges by impersonating someone else	11.765%
	the ability of a user to elevate their privileges by using a man-in-the-middle attack	0%
	Unanswered	0%

- **Question 14: Multiple Choice**
  Average Score 1.76 points

Which is an open source threat modeling tool?

Correct		Percent Answered
	TAM	44.118%
✅	TRIKE	17.647%
	ThreatMind	20.588%
	CORBA	17.647%
	Unanswered	0%

- **Question 15: Multiple Choice**
  Average Score 2.65 points

What is the name of the threat modeling tool developed by CERT?

Correct		Percent Answered
✅	CVSS	26.471%
	TRIKE	14.706%
	OCTAVE	58.824%
	AS/NZ 4360	0%
	Unanswered	0%

- **Question 16: True/False**
  Average Score 3.53 points

Attackers may conduct an encrypted-plaintext attack by sending potential victims a specific text that they are sure the victims will forward on to others.

Correct	Answers	Percent Answered
	True	64.706%
✅	False	35.294%
	Unanswered	0%

- **Question 17: Multiple Choice**
  Average Score 9.71 points

____ security addresses the issues necessary to protect the tangible items, objects, or areas of an organization from unauthorized access and misuse.

Correct		Percent Answered
✅	Physical	97.059%
	Personal	0%
	Object	0%
	Standard	2.941%
	Unanswered	0%

- **Question 18: Multiple Choice**
  Average Score 6.47 points

The ____ is the individual primarily responsible for the assessment, management, and implementation of information security in the organization.

Correct		Percent Answered
	ISO	8.824%
	CIO	20.588%
✅	CISO	64.706%
	CTO	5.882%
	Unanswered	0%

- **Question 19: Multiple Choice**
  Average Score 8.82 points

Effective management includes planning and ____.

Correct		Percent Answered
	organizing	5.882%

	leading	5.882%
	controlling	0%
☑	All of the above	88.235%
	Unanswered	0%

- **Question 20: Multiple Choice**
  Average Score 9.12 points

____ was developed by Phil Zimmermann and uses the IDEA Cipher for message encoding.

Correct		Percent Answered
	PEM	2.941%
☑	PGP	91.176%
	S/MIME	0%
	SSL	5.882%
	Unanswered	0%

- **Question 21: Multiple Choice**
  Average Score 5.59 points

____ management is the administration of changes in the strategy, operation, or components of the information security program.

Correct		Percent Answered
	Revision	32.353%
	Update	11.765%
	Upload	0%
☑	Change	55.882%
	Unanswered	0%

- **Question 22: Multiple Choice**
  Average Score 9.12 points

What was ZARF?

Correct		Percent Answered
	Acronym for Zimbabwe Advertising Research Foundation	2.941%
	A famous hacker.	5.882%
☑	Code designation for part of joint Air Force project	91.176%
	A government codename for a project dealing with extraterrestrial life.	0%
	Unanswered	0%

- **Question 23: Multiple Choice**
  Average Score 7.94 points

Between 1972 & 1974 the evil insider rose from ___ place to ___ place.

Correct		Percent Answered
	3 - 1	11.765%
☑	4 - 2	79.412%
	5 - 2	5.882%
	6 - 1	2.941%

	Unanswered	0%

- **Question 24: Multiple Choice**
  Average Score 6.76 points

What year was the first federal prosecution for computer fraud?

Correct		Percent Answered
	1960	8.824%
✓	1966	67.647%
	1970	2.941%
	1973	20.588%
	Unanswered	0%

- **Question 25: True/False**
  Average Score 10 points

In the article, it states that the "sheer complexity of today's operating systems" is a vulnerability. Would you agree that this is a problem even today?

Correct	Answers	Percent Answered
✓	True	100%
	False	0%
	Unanswered	0%

- **Question 26: Multiple Choice**
  Average Score 7.35 points

By 1970 which corporation was warning both the government and companies about computer security vulnerabilities?

Correct		Percent Answered
	IBM	14.706%
	Mitre	2.941%
✓	RAND	73.529%
	Honeywell	8.824%
	Unanswered	0%

- **Question 27: Multiple Choice**
  Average Score 8.24 points

What was the name given to the people who legally attempted to penetrate computer defenses?

Correct		Percent Answered
	penmen	0%
✓	tiger teams	82.353%
	pentesters	5.882%
	ethical hackers	11.765%
	Unanswered	0%

- **Question 28: Multiple Choice**
  Average Score 7.35 points

What is the name of the computer security expert from RAND?

Correct		Percent Answered
☑	Ware	73.529%
	Parker	14.706%
	Jacobson	2.941%
	Abbott	8.824%
	Unanswered	0%

- **Question 29: True/False**
  Average Score 8.53 points

One method of accomplishing active infiltration is for a legitimate user to penetrate portions of a system for which he has no authorization.

Correct	Answers	Percent Answered
☑	True	85.294%
	False	14.706%
	Unanswered	0%

- **Question 30: Multiple Choice**
  Average Score 7.06 points

SP 800-__ Guide to Industrial Control Systems (ICS) Security

Correct		Percent Answered
	12	8.824%
☑	82	70.588%
	53	20.588%
	14	0%
	Unanswered	0%

- **Question 31: Multiple Choice**
  Average Score 5.29 points

widely cited 2002 study prepared for NIST, reported that even though __% of software development budgets go to testing, flaws in software still cost the U.S. economy $59.5 billion annually.

Correct		Percent Answered
	10	2.941%
	25	17.647%
☑	50	52.941%
	75	26.471%
	Unanswered	0%

- **Question 32: Multiple Choice**
  Average Score 7.35 points

A freely distributed software tool from NIST to generate plans for efficiently testing combinations of two to six interacting variables.

Correct		Percent Answered
☑	ACTS	73.529%
	FUZZER	8.824%
	BUGGER	11.765%
	Test Track Pro	5.882%

	Unanswered	0%

- **Question 33: Multiple Choice**
  Average Score 5.29 points

NIST developed the Federal Agency Security Practices (FASP) web site. Which of the following is not part of one of the FASP areas.

Correct		Percent Answered
☑	Cloud security	52.941%
	Logical access controls	29.412%
	Risk management	8.824%
	Data integrity	8.824%
	Unanswered	0%

- **Question 34: Multiple Choice**
  Average Score 7.06 points

ıe project that develops information security standards (FIPS) and guidelines (SP 800-series) for non-national security federal information systems.

Correct		Percent Answered
	SCAP	0%
	FISSEA	8.824%
☑	FISMA	70.588%
	NIST IRS	20.588%
	Unanswered	0%

- **Question 35: Multiple Choice**
  Average Score 3.82 points

Which group within NIST publishes the Special Publications -- 800 Series?

Correct		Percent Answered
	Federal Information Security Group	44.118%
	Computer Security Department	11.765%
	Electronic Crimes Task Forces and Working Groups	5.882%
☑	Computer Security Resource Center	38.235%
	Unanswered	0%

- **Question 36: Multiple Choice**
  Average Score 5 points

ıis is sponsored by the U.S. Department of Homeland Security (DHS) National Cyber Security Division and NIST.

Correct		Percent Answered
☑	SAMATE	50%
	NVD	26.471%
	NCP	5.882%
	SCAP	17.647%
	Unanswered	0%

- **Question 37: Multiple Choice**
  Average Score 7.65 points

How many Cyber Storm exercises has the DHS had so far?

Correct		Percent Answered
✓	3	76.471%
	4	11.765%
	5	8.824%
	6	2.941%
	Unanswered	0%

- **Question 38: Multiple Choice**
  Average Score 5.59 points

What is the name of open source intrusion detection and prevention engine submitted by the OISF and developed with a grant from the DHS?

Correct		Percent Answered
	Stuxnet	14.706%
✓	Suricata	55.882%
	Metasploit	5.882%
	Snort	23.529%
	Unanswered	0%

- **Question 39: Multiple Choice**
  Average Score 7.94 points

What is the name of European agency responsible for information security?

Correct		Percent Answered
	ENIAC	5.882%
	NATO	0%
✓	ENISA	79.412%
	EU-CERT	14.706%
	Unanswered	0%

- **Question 40: Multiple Choice**
  Average Score 7.35 points

Which organization has the GIAC security certification?

Correct		Percent Answered
✓	SANS	73.529%
	NIST	5.882%
	ISC2	8.824%
	OWASP	11.765%
	Unanswered	0%

- **Question 41: Multiple Choice**
  Average Score 7.06 points

cooperative effort between SANS/GIAC and the Center for Internet Security(CIS) that works to develop a consensus regarding minimum standards and best practice information.

Correct	Percent Answered

	CERT	11.765%
✅	SCORE	70.588%
	CSI-FBI	5.882%
	REN-ISAC	11.765%
	Unanswered	0%

- **Question 42: Multiple Choice**
  Average Score 8.24 points

This organization was created by DARPA in response to the Morris worm attack in 1988.

Correct		Percent Answered
	SANS	5.882%
✅	CERT/CC	82.353%
	US-CERT	8.824%
	OWASP	2.941%
	Unanswered	0%

- **Question 43: Multiple Choice**
  Average Score 7.65 points

Part of the Software Engineering Institute at Carnegie Mellon University.

Correct		Percent Answered
	CSI	5.882%
	OSIF	5.882%
	CERIAS	11.765%
✅	CERT	76.471%
	Unanswered	0%

- **Question 44: Multiple Choice**
  Average Score 6.76 points

Suricata is associated to what organization?

Correct		Percent Answered
	NIST	11.765%
✅	OISF	67.647%
	DHS	17.647%
	ENISA	2.941%
	Unanswered	0%

- **Question 45: Multiple Choice**
  Average Score 9.12 points

This organization has an insecure web application called WebGoat for the purpose of testing.

Correct		Percent Answered
✅	OWASP	91.176%
	ISSA	5.882%
	CERT	0%

	DHS	2.941%
	Unanswered	0%

- **Question 46: Multiple Choice**
  Average Score 8.82 points

Which of the following does not appear in the OWASP top 10.

Correct		Percent Answered
	XSS	0%
	CSRF	2.941%
	Failure to restrict URL access	8.824%
✓	Malware attacks	88.235%
	Unanswered	0%

- **Question 47: Multiple Choice**
  Average Score 8.24 points

What organization is a partnership between the private sector and the FBI?

Correct		Percent Answered
✓	InfraGard	82.353%
	ACM	2.941%
	CERIAS	2.941%
	CERT	11.765%
	Unanswered	0%

- **Question 48: Multiple Choice**
  Average Score 8.82 points

Which of the following certifications is given by ISACA?

Correct		Percent Answered
	GIAC	2.941%
	CISSP	2.941%
✓	CISA	88.235%
	Security+	5.882%
	Unanswered	0%

- **Question 49: Multiple Choice**
  Average Score 4.12 points

This organization is more interested in the physical security side of IT.

Correct		Percent Answered
	InfraGard	11.765%
✓	ASIS	41.176%
	ISACA	35.294%
	CiNPA	11.765%
	Unanswered	0%

- **Question 50: Multiple Choice**
  Average Score 7.65 points

Which federal organization teamed up with FEMA to create a cybersecurity training program?

Correct		Percent Answered
	NIH	5.882%
	FBI	11.765%
	White House's National Security Council	5.882%
✓	DHS	76.471%
	Unanswered	0%

- **Question 51: Multiple Choice**
  Average Score 7.94 points

The name of the first computer OS that was developed with security in mind.

Correct		Percent Answered
✓	Multics	79.412%
	Unix	11.765%
	Linux	2.941%
	Windows	5.882%
	Unanswered	0%

- **Question 52: Multiple Choice**
  Average Score 4.12 points

The author of the report that really looked at computer security indepth.

Correct		Percent Answered
✓	Donn Parker	41.176%
	Willis Ware	32.353%
	Paul Herget	2.941%
	Roger Schell	23.529%
	Unanswered	0%

- **Question 53: Multiple Choice**
  Average Score 3.82 points

What year was the first real indepth examination report written on computer security?

Correct		Percent Answered
	1966	20.588%
✓	1970	38.235%
	1979	35.294%
	1982	5.882%
	Unanswered	0%

- **Question 54: Multiple Choice**
  Average Score 9.41 points

What is the name of the virus that attacked the Iranian nuclear facility?

Correct		Percent Answered
	Creeper	2.941%

	Alvi	2.941%
	Conficker	0%
✅	Stuxnet	94.118%
	Unanswered	0%

- **Question 55: Multiple Choice**
  Average Score 4.12 points

The general security model used for all information security developement.

Correct		Percent Answered
✅	CIA	41.176%
	DREAD	11.765%
	STRIDE	41.176%
	NR-CIA3	5.882%
	Unanswered	0%

- **Question 56: Multiple Choice**
  Average Score 1.76 points

Developed a 3 layer security model that incorporates CIA, Security Measures, and Information States.

Correct		Percent Answered
	NSA	20.588%
✅	CNSS	17.647%
	NIST	35.294%
	Microsoft	26.471%
	Unanswered	0%

- **Question 57: Multiple Choice**
  Average Score 4.41 points

An organization that is concerned with intellectual property lose in terms of software piracy.

Correct		Percent Answered
	NIST	29.412%
	DOJ Computer Crimes Division	26.471%
✅	SIIA	44.118%
	Nigerian 419 Enforcers	0%
	Unanswered	0%

- **Question 58: True/False**
  Average Score 6.76 points

In the business world, information security trumps the needs of the business.

Correct	Answers	Percent Answered
	True	32.353%
✅	False	67.647%
	Unanswered	0%

- **Question 59: Multiple Choice**
  Average Score 4.71 points

Famous for his DDOS attack in the past decade.

Correct		Percent Answered
	Gonzalez	20.588%
	Echouafni	5.882%
	Mitnick	26.471%
☑	Mafiaboy	47.059%
	Unanswered	0%

- **Question 60: Multiple Choice**
  Average Score 2.94 points

Perpetrated one of the largest credit card breaches.

Correct		Percent Answered
	Calce	17.647%
☑	Iceman	29.412%
	Patel	29.412%
	Cohen	23.529%
	Unanswered	0%

- **Question 61: Multiple Choice**
  Average Score 2.65 points

According to a recent information security survey, the percentage of virus incidents occurred in about ___% of the respondent's organizations.

Correct		Percent Answered
	25	20.588%
☑	50	26.471%
	65	26.471%
	85	26.471%
	Unanswered	0%

- **Question 62: Multiple Choice**
  Average Score 4.12 points

In a recent survey, the evil insider account for ____ of the information security attacks.

Correct		Percent Answered
	<10%	2.941%
☑	between 40 - 45%	41.176%
	about 55%	41.176%
	> 81%	14.706%
	Unanswered	0%

- **Question 63: Multiple Choice**
  Average Score 7.94 points

Any circumstance or event with the potential to adversely impact a business' operations.

Correct	Percent Answered

☑	threat	79.412%
	vulnerability	17.647%
	mitigation	2.941%
	agent	0%
	Unanswered	0%

- **Question 64: Multiple Choice**
  Average Score 1.47 points

According to a recent survey, which of the following was considered the number threat to information security.

Correct		Percent Answered
	zero-day exploit	17.647%
	social engineering	17.647%
☑	malware	14.706%
	careless employee	50%
	Unanswered	0%

- **Question 65: Multiple Choice**
  Average Score 5.88 points

Which city is considered the leader in malware?

Correct		Percent Answered
	Moscow	38.235%
☑	Shaoxing	58.824%
	Cincinnati	2.941%
	Bucharest	0%
	Unanswered	0%

- **Question 66: Multiple Choice**
  Average Score 5.88 points

What kind of attack did Hearland suffer?

Correct		Percent Answered
	man-in-the-middle	23.529%
	XSS	11.765%
	CSRF	5.882%
☑	Injection	58.824%
	Unanswered	0%

- **Question 67: Multiple Choice**
  Average Score 5 points

In Africa, what is likely to be the biggest information security risk?

Correct		Percent Answered
	cloud computing security	11.765%
	social networking	23.529%
	malicious insiders	14.706%

☑	mobile security	50%
	Unanswered	0%

Question 68: Multiple Choice
Average Score 5 points

People are the weakest link refers to what kind of attack?

Correct		Percent Answered
☑	social engineering	50%
	social networking	14.706%
	malicious insiders	2.941%
	careless employee	32.353%
	Unanswered	0%

Question 69: Multiple Choice
Average Score 7.35 points

Term given to some of the software that is written to allow persons to commit criminal acts.

Correct		Percent Answered
	mafiahits	0%
	botnets	23.529%
☑	crimeware	73.529%
	shelfware	2.941%
	Unanswered	0%

Question 70: Multiple Choice
Average Score 8.82 points

A group of computers that are controlled by someone or an organization and use for the purpose of perpetrating a large scale attack of some kind.

Correct		Percent Answered
	cloud computing	8.824%
☑	botnets	88.235%
	unionware	2.941%
	internet	0%
	Unanswered	0%

Name Test2-11W

Question 1: Multiple Choice
Average Score 5.45 points

Of the respondents surveyed in the CSI 2010/11 report, approximately what percentage had indicated they had experienced a security incident.

Correct		Percent Answered
	26	6.061%
☑	41	54.545%
	67	30.303%

	83	9.091%
	Unanswered	0%

- **Question 2: Multiple Choice**
  Average Score 7.58 points

Which law/industry regulation had the biggest impact to most of the respondents in the CSI survey?

Correct		Percent Answered
	PCI-DSS	24.242%
	SOX	0%
	GLBA	0%
✅	HIPPA	75.758%
	Unanswered	0%

- **Question 3: Multiple Choice**
  Average Score 8.79 points

What area does the HITECH Act effect?

Correct		Percent Answered
✅	health information related companies	87.879%
	high-tech Silicon Valley companies	3.03%
	educational institutions	9.091%
	startup companies	0%
	Unanswered	0%

- **Question 4: Multiple Choice**
  Average Score 7.58 points

What was the number one type of attack the CSI respondents experienced?

Correct		Percent Answered
	phishing attacks	6.061%
	insider abuse	12.121%
	DoS attacks	6.061%
✅	malware infection	75.758%
	Unanswered	0%

- **Question 5: Multiple Choice**
  Average Score 9.39 points

What is the name of person who was responsible for the Hearland break-in?

Correct		Percent Answered
	Woodlock	6.061%
✅	Gonzalez	93.939%
	Heymann	0%
	Weinberg	0%
	Unanswered	0%

- **Question 6: Multiple Choice**
  Average Score 3.64 points

State Security Breach Notification Laws

Correct		Percent Answered
	SSBNL	60.606%
✅	NCSL	36.364%
	TCIT	3.03%
	SOX	0%
	Unanswered	0%

- **Question 7: Multiple Choice**
  Average Score 6.97 points

The framework of this law is established by NIST.

Correct		Percent Answered
	HIPPA	18.182%
	FERPA	9.091%
✅	FISMA	69.697%
	FPA	3.03%
	Unanswered	0%

- **Question 8: Multiple Choice**
  Average Score 5.76 points

This law is related to identity theft.

Correct		Percent Answered
✅	ITERA	57.576%
	CDA	9.091%
	FERPA	18.182%
	PCI-DSS	15.152%
	Unanswered	0%

- **Question 9: Multiple Choice**
  Average Score 6.06 points

Financial reporting for publicly-owned companies.

Correct		Percent Answered
	GLBA	21.212%
✅	SOX	60.606%
	SAS 70	12.121%
	DMCA	6.061%
	Unanswered	0%

- **Question 10: Multiple Choice**
  Average Score 8.48 points

A set of standards related to the credit industry.

Correct		Percent Answered
	DOS	6.061%

	CLSR	6.061%
	GLBA	3.03%
☑	PCI	84.848%
	Unanswered	0%

- **Question 11: Multiple Choice**
  Average Score 6.06 points

The Financial Service Modernization Act is also know as

Correct		Percent Answered
☑	GLBA	60.606%
	SOX	0%
	PCI	0%
	FISMA	39.394%
	Unanswered	0%

- **Question 12: Multiple Choice**
  Average Score 8.18 points

SP800-53 refers to this law.

Correct		Percent Answered
	Patriot Act	6.061%
	Identity Theft Enforcement and Restitution Act	9.091%
☑	FISMA	81.818%
	FERPA	3.03%
	Unanswered	0%

- **Question 13: Multiple Choice**
  Average Score 7.88 points

A logical or physical discontinuity in a network to prevent unauthorized access to data or resources.

Correct		Percent Answered
☑	firewall	78.788%
	IPS	12.121%
	IPSec	3.03%
	SMC Barricade	6.061%
	Unanswered	0%

- **Question 14: Multiple Choice**
  Average Score 6.97 points

A mechanism that implements access control for a system resource by listing the identities of the system entities that are permitted to access the resource.

Correct		Percent Answered
	ACS	9.091%
	IDSec	12.121%
☑	ACLs	69.697%
	Kerberos	9.091%

	Unanswered	0%

- **Question 15: Multiple Choice**
  Average Score 6.36 points

A server that acts as an intermediary between a workstation user and the Internet so that the enterprise can ensure security, administrative control, and caching service.

Correct		Percent Answered
	gateway	18.182%
	soho	3.03%
✅	proxy	63.636%
	firewall	15.152%
	Unanswered	0%

- **Question 16: Multiple Choice**
  Average Score 5.45 points

An organization that studies computer and network INFOSEC in order to provide incident response services to victims of attacks, publish alerts concerning vulnerabilities and threats, and offer other information to help improve computer and network security.

Correct		Percent Answered
	OWASP	39.394%
	IEEE	3.03%
✅	CERT/CC	54.545%
	DHS	3.03%
	Unanswered	0%

- **Question 17: Multiple Choice**
  Average Score 6.36 points

A system developed at the MIT that depends on passwords and symmetric cryptography to implement ticket-based, peer entity authentication service and access control service distributed in a client-server network environment.

Correct		Percent Answered
	Sesame	3.03%
	IPSec	9.091%
	PGP	24.242%
✅	Kerberos	63.636%
	Unanswered	0%

- **Question 18: Multiple Choice**
  Average Score 7.27 points

_____ inspection is a firewall architecture that works at the network layer.

Correct		Percent Answered
✅	Stateful	72.727%
	MAC	15.152%
	Circuit	3.03%
	Application	9.091%
	Unanswered	0%

- **Question 19: Multiple Choice**

Average Score 5.15 points

A security protocol for wireless local area networks defined in the standard IEEE 802.11b.

Correct		Percent Answered
✓	WEP	51.515%
	IEEE-11Bb	21.212%
	WAP	27.273%
	Telnet	0%
	Unanswered	0%

- **Question 20: Multiple Choice**
  Average Score 8.48 points

The protocol governing network management and the monitoring of network devices and their functions. A set of protocols for managing complex networks.

Correct		Percent Answered
	SMTP	6.061%
	SSL	9.091%
✓	SNMP	84.848%
	MNPS	0%
	Unanswered	0%

- **Question 21: Multiple Choice**
  Average Score 6.67 points

An attack that sends an improperly large ICMP echo request packet with the intent of overflowing the input buffers of the destination machine and causing it to crash.

Correct		Percent Answered
✓	Ping of Death	66.667%
	DDoS	15.152%
	SYN Flood	15.152%
	Cyclone	3.03%
	Unanswered	0%

- **Question 22: Multiple Choice**
  Average Score 3.64 points

A protocol that ensures privacy between communicating applications and their users on the Internet.

Correct		Percent Answered
✓	TLS	36.364%
	SSL	48.485%
	IPSec	12.121%
	TCPSec	3.03%
	Unanswered	0%

- **Question 23: Multiple Choice**
  Average Score 8.48 points

A developing standard for security at the network or packet processing layer of network communication.

Correct		Percent Answered
	NIST ISA	6.061%
✓	IPSec	84.848%
	PPSec	0%
	IETF	9.091%
	Unanswered	0%

- **Question 24: Multiple Choice**
  Average Score 6.67 points

A protocol for transmitting private documents via the Internet.

Correct		Percent Answered
	TPD	3.03%
	SecTunnel	3.03%
✓	SSL	66.667%
	PPTP	27.273%
	Unanswered	0%

- **Question 25: Multiple Choice**
  Average Score 4.24 points

An extension of the Point-to-Point Tunneling Protocol used by an Internet service provider to enable the operation of a virtual private network over the Internet.

Correct		Percent Answered
	VPPTP	36.364%
✓	L2TP	42.424%
	WEP	0%
	IVPN	21.212%
	Unanswered	0%

- **Question 26: Multiple Choice**
  Average Score 7.58 points

A data structure associated with a system resource that enumerates the identities of system entities that are permitted access to the resource and the access permission for each entity.

Correct		Percent Answered
	APDS	6.061%
	IDSL	15.152%
	ResourceCtrl	3.03%
✓	ACL	75.758%
	Unanswered	0%

- **Question 27: True/False**
  Average Score 9.09 points

A firewall may consist of a pair of filtering routers and one or more proxy servers running on one or more bastion hosts, all connected to a small, dedicated LAN between the two routers.

Correct	Answers	Percent Answered

☑	True	90.909%
	False	9.091%
	Unanswered	0%

- **Question 28: Multiple Choice**
  Average Score 6.06 points

When ____ authentication is based on passwords, the protocol is known to be vulnerable to off-line dictionary attacks by eavesdroppers who capture the initial user-to-KDC exchange.

Correct		Percent Answered
☑	Kerberos	60.606%
	Sesame	6.061%
	IPSec	6.061%
	WEP	27.273%
	Unanswered	0%

- **Question 29: True/False**
  Average Score 6.06 points

L2TP specifies security services and thus is independent on protocols layered above and below it to provide any needed security.

Correct	Answers	Percent Answered
	True	39.394%
☑	False	60.606%
	Unanswered	0%

- **Question 30: Multiple Choice**
  Average Score 8.79 points

A standard for providing cellular telephones, pagers, and other handheld devices with secure access to e-mail and text-based Web pages

Correct		Percent Answered
	WEP	9.091%
	AWAC	0%
☑	WAP	87.879%
	802.13g	3.03%
	Unanswered	0%

- **Question 31: Multiple Choice**
  Average Score 8.48 points

What is the name of the database that is used to maintain hacking information?

Correct		Percent Answered
☑	WHID	84.848%
	WHDB	3.03%
	HackmeDB	6.061%
	WASC	6.061%
	Unanswered	0%

- **Question 32: Multiple Choice**
  Average Score 2.42 points

According to the numbers, SQL Injection attacks accounted for what percentage of the overall attacks on the web.

Correct		Percent Answered
	45%	36.364%
	27%	24.242%
✅	25%	24.242%
	17%	15.152%
	Unanswered	0%

- **Question 33: Multiple Choice**
  Average Score 6.67 points

How far back have buffer overflows been known as a potential problem?

Correct		Percent Answered
	since 1960s	18.182%
✅	since 1970s	66.667%
	since 1980s	12.121%
	since 1990s	3.03%
	Unanswered	0%

- **Question 34: Multiple Choice**
  Average Score 6.67 points

Why do we have cookies?

Correct		Percent Answered
✅	because the web has no state	66.667%
	it is easier to serve up the html markup	9.091%
	because it is a way of caching	24.242%
	to prevent hackers from stealing information from the user	0%
	Unanswered	0%

- **Question 35: Multiple Choice**
  Average Score 4.55 points

What method was used to hack CardSystems?

Correct		Percent Answered
	XSS	33.333%
✅	SQL Injection	45.455%
	Insecure direct object reference	15.152%
	CSRF	6.061%
	Unanswered	0%

- **Question 36: Multiple Choice**
  Average Score 4.24 points

Which STRIDE element would an error message that is generated from the system possiblity fit?

Correct		Percent Answered
	S	15.152%

	R	18.182%
✅	I	42.424%
	E	24.242%
	Unanswered	0%

- **Question 37: Multiple Choice**
  Average Score 6.06 points

Session hijacking is possible because

Correct		Percent Answered
✅	there is no state on the web	60.606%
	users make stupid mistakes	0%
	there is a failure to restrict URL access	15.152%
	there is insufficient transport layer protection	24.242%
	Unanswered	0%

- **Question 38: Multiple Choice**
  Average Score 6.97 points

Which of the following is not an acceptable method for protecting session ids?

Correct		Percent Answered
	validate user input	15.152%
	validate application output	6.061%
✅	create blacklists	69.697%
	restrict the access to cookies using DOMAIN and PATH attributes	9.091%
	Unanswered	0%

- **Question 39: Multiple Choice**
  Average Score 7.88 points

The de facto IDS tool.

Correct		Percent Answered
✅	Snort	78.788%
	OSSEC HIDS	9.091%
	Fragroute	6.061%
	Sguil	6.061%
	Unanswered	0%

- **Question 40: Multiple Choice**
  Average Score 4.24 points

Built on the ACID project.

Correct		Percent Answered
	Snort	33.333%
	Suricata	18.182%
✅	BASE	42.424%
	SANS IDS	6.061%

	Unanswered	0%

- **Question 41: Multiple Choice**
  Average Score 6.36 points

Associated with the Intrusion Detection Exchange Format.

Correct		Percent Answered
	NIST	27.273%
✅	IETF	63.636%
	SANS	6.061%
	W3C	3.03%
	Unanswered	0%

- **Question 42: Multiple Choice**
  Average Score 6.97 points

Primary tool for pentesters.

Correct		Percent Answered
✅	Metasploit	69.697%
	Suricata	12.121%
	Snort	15.152%
	SourceFire	3.03%
	Unanswered	0%

- **Question 43: Multiple Choice**
  Average Score 4.85 points

Uses the TCP/IP stack for intrusion detection.

Correct		Percent Answered
✅	signature-based	48.485%
	CIA-based	18.182%
	statistical-based	9.091%
	application-based	24.242%
	Unanswered	0%

- **Question 44: Multiple Choice**
  Average Score 5.76 points

An attack profile database used to dynamically create signatures which are compatible with various Network IDS

Correct		Percent Answered
	NVD	27.273%
✅	ArachNIDS	57.576%
	WHID	12.121%
	Tarpit	3.03%
	Unanswered	0%

- **Question 45: Multiple Choice**
  Average Score 3.94 points

_____ can be considered attempts to penetrate a system or to circumvent a system's security in order to gain information, modify information

or disrupt the intended functioning of the targeted network or system

Correct		Percent Answered
	Pentesting	39.394%
	Footprinting	18.182%
☑	Attacks	39.394%
	Scanning	3.03%
	Unanswered	0%

- **Question 46: Multiple Choice**
  Average Score 8.18 points

Rather than penetrating a systems security by hacking, a _____ attack will just take the system out, denying the service to its user.

Correct		Percent Answered
	Honeypot	6.061%
	Worm	9.091%
	OOB	3.03%
☑	DOS	81.818%
	Unanswered	0%

- **Question 47: Multiple Choice**
  Average Score 4.55 points

_____ is a project to develop protocols and application programming interfaces in order that research in intrusion detection research can be shared and so that intrusion detection components can be reused in other systems.

Correct		Percent Answered
	IDWG	24.242%
	OISF	27.273%
	NIST	3.03%
☑	CIDF	45.455%
	Unanswered	0%

- **Question 48: Multiple Choice**
  Average Score 6.97 points

Occurs when an attack or an event is either not detected by the IDS or is considered benign by the analyst.

Correct		Percent Answered
	false positive	24.242%
	true negative	6.061%
	true positive	0%
☑	false negative	69.697%
	Unanswered	0%

- **Question 49: Multiple Choice**
  Average Score 5.76 points

Applying artificial intelligence in the use of detecting intrusions

Correct	Percent Answered

	data mining	36.364%
	non-repudiation	6.061%
☑	heuristics	57.576%
	confidence value	0%
	Unanswered	0%

- **Question 50: Multiple Choice**
  Average Score 7.27 points

Are best placed to detect computer misuse from trusted insiders and those who have infiltrated your network evading traditional methods of detection.

Correct		Percent Answered
	NIDS	27.273%
	AIDS	0%
☑	HIDS	72.727%
	ACID	0%
	Unanswered	0%

- **Question 51: Multiple Choice**
  Average Score 6.36 points

By setting the IDPS interface configuration to _____ mode, you can see all the network traffic on your segment regardless of the source or destination.

Correct		Percent Answered
	unsafe	15.152%
	heuristics	12.121%
	fragmentation	9.091%
☑	promiscuous	63.636%
	Unanswered	0%

- **Question 52: Multiple Choice**
  Average Score 4.85 points

Usually passive and not easy for hackers to attack directly.

Correct		Percent Answered
☑	NIDS	48.485%
	HIDS	24.242%
	AIPS	6.061%
	firewalls	21.212%
	Unanswered	0%

- **Question 53: Multiple Choice**
  Average Score 4.55 points

A major advantage of HIDS over NIDS systems is that

Correct		Percent Answered
☑	they can access information encrypted when traveling over the network	45.455%
	they are not susceptible to direct attack	48.485%

	pose less management issues	6.061%
	use less amounts of disk space	0%
	Unanswered	0%

- **Question 54: Multiple Choice**
  Average Score 6.36 points

A multi-threaded intrusion detection/prevention engine

Correct		Percent Answered
	Sguil	3.03%
✅	Suricata	63.636%
	OSSEC HIDS	24.242%
	BASE	9.091%
	Unanswered	0%

- **Question 55: Multiple Choice**
  Average Score 4.24 points

Discovering the Internet addresses owned or controlled by an organization.

Correct		Percent Answered
	fingerprinting	21.212%
✅	footprinting	42.424%
	mapping	33.333%
	attack vectoring	3.03%
	Unanswered	0%

- **Question 56: Multiple Choice**
  Average Score 4.24 points

In biometric control systems, authentication is a validation of the ____ identity.

Correct		Percent Answered
	employee's	51.515%
	intruder's	3.03%
	credential's	3.03%
✅	supplicant's	42.424%
	Unanswered	0%

- **Question 57: Multiple Choice**
  Average Score 6.97 points

What organization is responsible for maintaining the CVE?

Correct		Percent Answered
✅	Mitre	69.697%
	NIST	21.212%
	Microsoft	3.03%
	OSF	6.061%
	Unanswered	0%

- **Question 58: Multiple Choice**
  Average Score 7.27 points

A mistake in software that be directly used by a hacker to gain access to a system or network.

Correct		Percent Answered
	exposure	3.03%
	bug	18.182%
	attack vector	6.061%
✓	vulnerability	72.727%
	Unanswered	0%

- **Question 59: True/False**
  Average Score 3.03 points

CVE contains information such as risk, impact, fix information, and detailed technical information on each vulnerability.

Correct	Answers	Percent Answered
	True	69.697%
✓	False	30.303%
	Unanswered	0%

- **Question 60: Multiple Choice**
  Average Score 6.97 points

Uses the CWE as a classification mechanism that differentiates CVEs by the type of vulnerability they represent.

Correct		Percent Answered
	SCAP	15.152%
	OVAL	9.091%
✓	NVD	69.697%
	XCCDF	6.061%
	Unanswered	0%

- **Question 61: Multiple Choice**
  Average Score 8.79 points

Provides a universal open and standardized method for rating IT vulnerabilities.

Correct		Percent Answered
	ITV	3.03%
	CPE	9.091%
✓	CVSS	87.879%
	OSRV	0%
	Unanswered	0%

- **Question 62: Multiple Choice**
  Average Score 4.85 points

The database system that uses SCAP.

Correct		Percent Answered
	CERIAS	6.061%

	SCAPDB	30.303%
	FISMA	15.152%
✅	NVD	48.485%
	Unanswered	0%

- **Question 63: Multiple Choice**
  Average Score 7.58 points

A database of web app related security incidents.

Correct		Percent Answered
	NVD	6.061%
✅	WHID	75.758%
	CWE	15.152%
	SCAPDB	3.03%
	Unanswered	0%

- **Question 64: Multiple Choice**
  Average Score 6.06 points

Which NIST document is related to AES?

Correct		Percent Answered
✅	FIPS 197	60.606%
	SP800-78	18.182%
	FIPS 140-2	12.121%
	SP800-106	9.091%
	Unanswered	0%

- **Question 65: Multiple Choice**
  Average Score 5.45 points

The process of obtaining original message from encrypted message without knowing the algorithms used.

Correct		Percent Answered
	cryptology	3.03%
✅	cryptanalysis	54.545%
	decryption	42.424%
	cryptoalgol	0%
	Unanswered	0%

- **Question 66: Multiple Choice**
  Average Score 6.67 points

A polyalphabetic encyrption scheme.

Correct		Percent Answered
	Bellaso	6.061%
	Vernam	9.091%
✅	Vigenere	66.667%
	PGP	18.182%

	Unanswered	0%

- **Question 67: Multiple Choice**
  Average Score 8.48 points

Uses the same key for encryption and decryption.

Correct		Percent Answered
	asymmetric encryption	12.121%
	hash encryption	0%
✅	symmetric enryption	84.848%
	polyalphabetic encryption	3.03%
	Unanswered	0%

- **Question 68: Multiple Choice**
  Average Score 4.85 points

The de facto cryptography standard for the government.

Correct		Percent Answered
	snort	0%
	DES	36.364%
	PGP	15.152%
✅	AES	48.485%
	Unanswered	0%

- **Question 69: Multiple Choice**
  Average Score 5.76 points

AES was adopted from the ____ cipher.

Correct		Percent Answered
	PGP	12.121%
	RSA	9.091%
	DES	21.212%
✅	Rijndael	57.576%
	Unanswered	0%

- **Question 70: Multiple Choice**
  Average Score 5.76 points

If you use a ____-bit key, it will be good for about 20-30 years barring any major revolultion in computing power.

Correct		Percent Answered
	512	15.152%
✅	256	57.576%
	768	9.091%
	128	18.182%
	Unanswered	0%

- **Question 71: Multiple Choice**
  Average Score 3.33 points

PKI incorporates

Correct		Percent Answered
✅	STRIDE	33.333%
	NR-CIA3	21.212%
	DREAD	24.242%
	CSIRT	21.212%
	Unanswered	0%

- **Question 72: Multiple Choice**
  Average Score 6.67 points

A _____ is a trusted third party that is trusted by both the subject (owner) of the certificate and the party relying upon the certificate.

Correct		Percent Answered
✅	CA	66.667%
	CD	9.091%
	DS	15.152%
	3DES	9.091%
	Unanswered	0%

- **Question 73: Multiple Choice**
  Average Score 1.52 points

Hiding information in a picture file.

Correct		Percent Answered
✅	hybrid cryptography	15.152%
	steganography	72.727%
	Diffie-Hellman	0%
	Bit encryption	12.121%
	Unanswered	0%

- **Question 74: Multiple Choice**
  Average Score 5.15 points

Uses public key encryption to secure channel over the public internet.

Correct		Percent Answered
	PKI	30.303%
✅	SSL	51.515%
	HTTPS	18.182%
	IDEA	0%
	Unanswered	0%

- **Question 75: Multiple Choice**
  Average Score 6.06 points

Uses Diffie-Hellman scheme for encryption.

Correct		Percent Answered
✅	IPSec	60.606%

	SSL	3.03%
	PGP	24.242%
	AES	12.121%
	Unanswered	0%

- **Question 76: Multiple Choice**
  Average Score 3.94 points

The defacto open standard for encryption and authentication.

Correct		Percent Answered
	AES	24.242%
	RSA	33.333%
✓	PGP	39.394%
	ESP	3.03%
	Unanswered	0%

Name **11W-Test3**

Question 1: Multiple Choice
Average Score 9 points

What is the name of Amazon's cloud service?

Correct		Percent Answered
✓	elastic compute cloud (ec2)	80%
	cloudwatch	0%
	amazon machine image (ami)	0%
	simpledb	0%
	Unanswered	20%

- **Question 2: Multiple Choice**
  Average Score 8 points

RFID technology was developed in the ____.

Correct		Percent Answered
	past decade	0%
	1980s	0%
	1960s	20%
✓	1950s	70%
	Unanswered	10%

- **Question 3: Multiple Choice**
  Average Score 9 points

_____ of a tag is an operational threat in that the physical or electronic destruction of the tag deprives downstream users of the tag of its data.

Correct		Percent Answered
	Skimming	0%
	Cloning	0%

✅	Killing	80%
	Shielding	0%
	Unanswered	20%

- **Question 4: Multiple Choice**
  Average Score 10 points

In the Soon/Tieyan article on RFID Security what security model do they use?

Correct		Percent Answered
	GIAC	0%
	STRIDE	0%
✅	DREAD	90%
	NR-CIA3	0%
	Unanswered	10%

- **Question 5: Multiple Answer**
  Average Score 8 points

The most common authentication techniques of RFID systems are

Correct	Answers	Percent Correct	Percent Incorrect
✅	passwords	80%	20%
✅	HMAC	70%	30%
✅	digital signatures	80%	20%
	CAs	90%	10%

- **Question 6: Multiple Choice**
  Average Score 7 points

Between 1987 and 1996 about how many reported cyberattacks were there on power lines, substations, and powerplants according to a DOE report.

Correct		Percent Answered
	15000	0%
	30000	20%
	9000	10%
✅	20000	60%
	Unanswered	10%

- **Question 7: Multiple Choice**
  Average Score 9 points

Which of the following is not a possible attack scenario on a SCADA system?

Correct		Percent Answered
	DoS	10%
	Spoofing	0%
	Direct manipulation of field devices	0%
✅	Repudiation	80%
	Unanswered	10%

- **Question 8: Multiple Choice**

Average Score 9 points

Used to centrally monitor/control industrial equipment.

Correct		Percent Answered
✅	SCADA	90%
	ICS	0%
	RFID	0%
	IET	0%
	Unanswered	10%

- **Question 9: Multiple Choice**
  Average Score 6 points

How the US arranged for the Soviets to unintentionally cause severe damage to their natural gas pipelines via malware?

Correct		Percent Answered
	How the Cold War Was Really One.	10%
	The Most Monumental Non-Nuclear Explosion and Fire	10%
✅	At the Abyss	60%
	Hacking the Soviet Empire	10%
	Unanswered	10%

- **Question 10: True/False**
  Average Score 5 points

SCADA systems cannot be accessed via corporate networks because they were built separate from these systems.

Correct	Answers	Percent Answered
	True	40%
✅	False	50%
	Unanswered	10%

- **Question 11: Multiple Choice**
  Average Score 8 points

Many of the SCADA systems are based on the Intel _____ chip.

Correct		Percent Answered
	8086	20%
✅	8088	70%
	286	0%
	386	0%
	Unanswered	10%

- **Question 12: Multiple Choice**
  Average Score 5 points

What kind of encryption do most SCADA traffic use?

Correct		Percent Answered
	RSA	10%
	PGP	0%

	AES	20%
✅	Plain text	50%
	Unanswered	20%

- **Question 13: Multiple Choice**
  Average Score 10 points

SCADA communication systems are susceptible to _____ Flood attachs aimed at substations.

Correct		Percent Answered
	Comm	0%
	ACK	0%
✅	SYN	90%
	TCP	0%
	Unanswered	10%

- **Question 14: Multiple Choice**
  Average Score 10 points

TCP uses a ___-way handshake.

Correct		Percent Answered
	2	0%
✅	3	90%
	4	0%
	5	0%
	Unanswered	10%

- **Question 15: True/False**
  Average Score 5 points

CVE contains information such as risk, impact, fix information, and detailed technical information on each vulnerability.

Correct	Answers	Percent Answered
	True	40%
✅	False	40%
	Unanswered	20%

- **Question 16: Multiple Choice**
  Average Score 8 points

Uses the CWE as a classification mechanism that differentiates CVEs by the type of vulnerability they represent.

Correct		Percent Answered
	SCAP	0%
	OVAL	10%
✅	NVD	80%
	XCCDF	0%
	Unanswered	10%

- **Question 17: Multiple Choice**
  Average Score 10 points

A database of web app related security incidents.

Correct		Percent Answered
	NVD	0%
✅	WHID	90%
	CWE	0%
	SCAPDB	0%
	Unanswered	10%

- **Question 18: Multiple Choice**
  Average Score 8 points

A polyalphabetic encyrption scheme.

Correct		Percent Answered
	Bellaso	10%
	Vernam	0%
✅	Vigenere	70%
	PGP	0%
	Unanswered	20%

- **Question 19: Multiple Choice**
  Average Score 9 points

Cryptography standard for the US Government.

Correct		Percent Answered
	IEEE P1363	0%
	CyberSaber	0%
	OpenPGP	0%
✅	AES	80%
	Unanswered	20%

- **Question 20: Multiple Choice**
  Average Score 2 points

PKI incorporates

Correct		Percent Answered
✅	STRIDE	20%
	NR-CIA3	40%
	DREAD	0%
	CSIRT	30%
	Unanswered	10%

- **Question 21: Multiple Choice**
  Average Score 10 points

Hiding information in a picture file.

Correct		Percent Answered
	hybrid cryptography	0%
✅	steganography	90%

	Diffie-Hellman	0%
	Bitmap encryption	0%
	Unanswered	10%

- **Question 22: Multiple Choice**
  Average Score 6 points

Uses Diffie-Hellman.

Correct		Percent Answered
✓	IPSec	60%
	SSL	10%
	PGP	20%
	AES	0%
	Unanswered	10%

- **Question 23: Multiple Choice**
  Average Score 5 points

The defacto open standard for encryption and authentication.

Correct		Percent Answered
	AES	0%
	RSA	40%
✓	PGP	50%
	ESP	0%
	Unanswered	10%

- **Question 24: Multiple Choice**
  Average Score 4 points

A framework for information security.

Correct		Percent Answered
	IETF RFC 2169	10%
✓	ISO 27001	30%
	NIST SP 800-12	50%
	FIPS 140	0%
	Unanswered	10%

- **Question 25: Multiple Choice**
  Average Score 8 points

A course of action used by an organization to convey instructions from management to those who perform duties.

Correct		Percent Answered
✓	policy	70%
	law	0%
	standard	0%
	procedure	10%
	Unanswered	20%

- **Question 26: True/False**
  Average Score 7 points

Keystroke monitoring has been determined to unlawful without a warrant.

Correct	Answers	Percent Answered
	True	30%
✓	False	60%
	Unanswered	10%

- **Question 27: Multiple Choice**
  Average Score 6 points

What is the organization that deals primarily with project management?

Correct		Percent Answered
✓	PMI	50%
	NIST	10%
	ISACA	10%
	SANS	20%
	Unanswered	10%

- **Question 28: Multiple Choice**
  Average Score 6 points

What is the name of the CERT methodology for risk management?

Correct		Percent Answered
✓	OCTAVE	60%
	CSIRT	20%
	TAM	0%
	CRiSIS	10%
	Unanswered	10%

- **Question 29: Multiple Choice**
  Average Score 4 points

Developed with ISO 17799 standard in mind.

Correct		Percent Answered
	BS7799	10%
✓	COBRA	40%
	ITIL	20%
	IETF RFC 2031	10%
	Unanswered	20%

- **Question 30: Multiple Choice**
  Average Score 9 points

A function of the likelihood of a given threat source's exercising a particular potential vulnerability.

Correct		Percent Answered
✓	risk	80%

	threat agent	10%
	functional vulnerability	0%
	adversary	0%
	Unanswered	10%

- **Question 31: Multiple Answer**
  Average Score 8.73 points

Related to vulnerability indentification.

Correct	Answers	Percent Correct	Percent Incorrect
☑	Specific avenues threat agents can exploit to attack an information asset are called vulnerabilities	90%	10%
☑	Examine how each threat could be perpetrated and list organization's assets and vulnerabilities	90%	10%
	Process works best when people with similar backgrounds within organization work iteratively in a series of brainstorming sessions	60%	40%
☑	At end of risk identification process, list of assets and their vulnerabilities is achieved	90%	10%

- **Question 32: Multiple Answer**
  Average Score 8.67 points

Acceptance or transfer of risk.

Correct	Answers	Percent Correct	Percent Incorrect
☑	In some instances, risk must simply be acknowledged as part of organization's business process	80%	20%
☑	Management must be assured that decisions made to assume risk the organization are made by properly informed decision makers	90%	10%
☑	Information security must make sure the right people make risk assumption decisions with complete knowledge of the impact of the decision	90%	10%
	Mitigating risks is the easy part.	100%	0%

- **Question 33: Matching**
  Average Score 9 points

Risk control strategies

apply safeguards

Correct	Answers	Percent Answered
☑	avoidance	70%
	transference	10%
	mitigation	10%
	acceptance	0%
	Unanswered	10%

transfer the risk

Correct	Answers	Percent Answered
	avoidance	10%
☑	transference	80%
	mitigation	0%
	acceptance	0%
	Unanswered	10%

reduce impact

Correct	Answers	Percent Answered
	avoidance	10%
	transference	0%
✅	mitigation	80%
	acceptance	0%
	Unanswered	10%

understand consequences and take on the risk

Correct	Answers	Percent Answered
	avoidance	0%
	transference	0%
	mitigation	0%
✅	acceptance	90%
	Unanswered	10%

- **Question 34: Multiple Choice**
  Average Score 1 points

Focus is on physical security.

Correct		Percent Answered
✅	ASIS	10%
	OWASP	10%
	SANS	40%
	ISACA	30%
	Unanswered	10%

- **Question 35: Either/Or**
  Average Score 8 points

Which comes first: physically securing the computer hardware and then securing the computer software.

Correct	Answers	Percent Answered
✅	Agree	70%
	Disagree	20%
	Unanswered	10%

- **Question 36: Multiple Choice**
  Average Score 10 points

Who is UC's CISO?

Correct		Percent Answered
✅	Kevin McLaughlin	90%
	Greg Williams	0%
	Michael Lieberman	0%
	Greg Seipelt	0%
	Unanswered	10%

- **Question 37: Multiple Choice**
  Average Score 8 points

CERT

Correct		Percent Answered
	CCSA	0%
☑	CSIH	70%
	CEH	0%
	CIPP	10%
	Unanswered	20%

- **Question 38: Multiple Choice**
  Average Score 7 points

This certification deals with the 802.11 standard.

Correct		Percent Answered
	WIPS	0%
	WNMS	0%
☑	CWSP	70%
	CEPT	10%
	Unanswered	20%

- **Question 39: Multiple Choice**
  Average Score 8 points

Consider one of the top security certifications.

Correct		Percent Answered
	Security+	0%
☑	CISSP	70%
	CSP	0%
	CISSO	10%
	Unanswered	20%

- **Question 40: Multiple Choice**
  Average Score 4 points

Has a certification for a web app tester.

Correct		Percent Answered
☑	CREST	40%
	OWASP	30%
	GIAC	30%
	RSA	0%
	Unanswered	0%

- **Question 41: Multiple Choice**
  Average Score 0 points

SCADA

Correct		Percent Answered
	CIW	0%

	PCIP	40%
	CWSP	50%
	CCNA	10%
	Unanswered	0%

- **Question 42: Multiple Choice**
  Average Score 10 points

A pen-testing certification that teaches the how hackers do it.

Correct		Percent Answered
	GSSP	0%
	GCIH	0%
	GREM	0%
✅	CEH	100%
	Unanswered	0%

- **Question 43: Multiple Choice**
  Average Score 10 points

SANS

Correct		Percent Answered
✅	GIAC	100%
	NIST	0%
	CREST	0%
	EC-Council	0%
	Unanswered	0%

- **Question 44: Multiple Choice**
  Average Score 10 points

CSSA

Correct		Percent Answered
	system security	0%
	software security	0%
✅	SCADA security	100%
	public sector security	0%
	Unanswered	0%

- **Question 45: Multiple Answer**
  Average Score 5.6 points

Pick the certifications that are related to pen testing.

Correct	Answers	Percent Correct	Percent Incorrect
✅	GPEN	60%	40%
✅	CEH	90%	10%
	GCFA	100%	0%
✅	CEPT	80%	20%

	CISA	90%	10%

- **Question 46: Multiple Choice**
  Average Score 7 points

Before you can apply for this certification you must have at least 5 years of experience.

Correct		Percent Answered
✅	CISA	70%
	OSWP	0%
	CISSO	20%
	CSSLP	10%
	Unanswered	0%

- **Question 47: Multiple Choice**
  Average Score 9 points

A certification accredited by both ANSI and ISO.

Correct		Percent Answered
	CRISC	10%
✅	CISSP	90%
	OPSA	0%
	GISF	0%
	Unanswered	0%

- **Question 48: Multiple Answer**
  Average Score 6.04 points

Identify the certifications that are considered the top ones to have.

Correct	Answers	Percent Correct	Percent Incorrect
✅	CISSP	100%	0%
✅	GSLC	22.222%	77.778%
✅	CISM	88.889%	11.111%
	Security+	88.889%	11.111%
	CTA	77.778%	22.222%

- **Question 49: True/False**
  Average Score 9 points

An EDL in a protective sleeve is readable at a distance of some tens of meters.

Correct	Answers	Percent Answered
	True	0%
✅	False	90%
	Unanswered	10%

- **Question 50: True/False**
  Average Score 9 points

In most cases, SCADA traffic can run on only two possible ports.

Correct	Answers	Percent Answered

	True	10%
✓	False	90%
	Unanswered	0%

- **Question 51: True/False**
  Average Score 9 points

On Aug 21, 2007 two LA traffic engineers hacked one of their traffic computers and sent commands to disconnect five signal control boxes at critical intersections.

Correct	Answers	Percent Answered
	True	0%
✓	False	90%
	Unanswered	10%

- **Question 52: Fill in the Blank**
  Average Score 7 points

Of the six risk categories of cloud computing, which one is the most critical?

Correct	Answers	Percent Answered
✓	authentication	70%
	data theft	10%
	isolation failure	10%
	malicious insiders	10%
	Unanswered	0%

- **Question 53: Fill in the Blank**
  Average Score 0 points

Be extremely cautious about any data in http headers that can be user-_____.

Correct	Answers	Percent Answered
	edited	10%
	harmful	10%
	defined	10%
	manipulated	10%
	controlled	10%
	beware	10%
	agent	10%
	modified	20%
	sensitive	10%
	Unanswered	0%

- **Question 54: True/False**
  Average Score 9 points

With the use of AJAX, web application has become more secure.

Correct	Answers	Percent Answered
	True	10%
✓	False	90%

	Unanswered	0%

- **Question 55: Multiple Answer**
  Average Score 8.27 points

Related to vulnerability indentification.

Correct	Answers	Percent Correct	Percent Incorrect
☑	Specific avenues threat agents can exploit to attack an information asset are called vulnerabilities	90%	10%
☑	Examine how each threat could be perpetrated and list organization's assets and vulnerabilities	100%	0%
	Process works best when people with similar backgrounds within organization work iteratively in a series of brainstorming sessions	60%	40%
☑	At end of risk identification process, list of assets and their vulnerabilities is achieved	90%	10%

- **Question 56: True/False**
  Average Score 3 points

Computer rooms and wiring closets require special attention to ensure the STRIDE of infomation is protected.

Correct	Answers	Percent Answered
	True	60%
☑	False	30%
	Unanswered	10%

- **Question 57: True/False**
  Average Score 7 points

Today, the use of a halogen gas systen is highly recommended to protect a computer room from damage due to a fire.

Correct	Answers	Percent Answered
	True	30%
☑	False	70%
	Unanswered	0%

- **Question 58: True/False**
  Average Score 8 points

The goal of the project plan is to add new security components that negatively impact the day-to-day operations of individual employees.

Correct	Answers	Percent Answered
	True	10%
☑	False	80%
	Unanswered	10%

- **Question 59: True/False**
  Average Score 6 points

To prepare the WBS, you need an ERP package.

Correct	Answers	Percent Answered
	True	40%
☑	False	60%
	Unanswered	0%

- **Question 60: Multiple Choice**
  Average Score 10 points

____ testing is a straightforward testing technique that looks for vulnerabilities in a program or protocol by feeding random input to the program or a network running the protocol.

Correct		Percent Answered
	Buzz	0%
☑	Fuzz	100%
	Spike	0%
	Black	0%
	Unanswered	0%

- **Question 61: Multiple Choice**
  Average Score 8 points

The interior walls reach only part way to the next floor, which leaves a space above the ceiling of the offices but below the top of the storey. This space is called a(n) ____.

Correct		Percent Answered
	kneespace	0%
	attic	10%
☑	plenum	80%
	padding	0%
	Unanswered	10%

- **Question 62: Multiple Choice**
  Average Score 8 points

Class ____ fires are extinguished with agents that must be non-conducting.

Correct		Percent Answered
	A	0%
	B	0%
☑	C	80%
	D	10%
	Unanswered	10%

- **Question 63: Multiple Choice**
  Average Score 9 points

A relatively new technology to support the location of lost or stolen laptops is ____.

Correct		Percent Answered
☑	CompuTrace	90%
	Norton	0%
	Netscape	0%
	SSL	0%
	Unanswered	10%

- **Question 64: Multiple Choice**
  Average Score 6 points

By managing the ____, the organization can reduce unintended consequences by having a process to resolve potential conflict and disruption

that uncoordinated change can introduce.

Correct		Percent Answered
	changeover	30%
	wrap-up	0%
✅	process of change	60%
	governance	10%
	Unanswered	0%

- **Question 65: Multiple Choice**
  Average Score 8 points

Most guards have clear ____ that help them to act decisively in unfamiliar situations.

Correct		Percent Answered
	MACs	0%
✅	SOPs	80%
	POSs	0%
	OPSs	10%
	Unanswered	10%

- **Question 66: Multiple Choice**
  Average Score 8 points

The Plan-Do-Check-Act process is an implementation of the ____ approach to internal controls to manage risk.

Correct		Percent Answered
	CNSS 4012	0%
	NIST SP800-12	20%
✅	ISO 27001	80%
	ISO 1899	0%
	Unanswered	0%

- **Question 67: Multiple Choice**
  Average Score 7 points

One approach that can improve the situational awareness of the information security function uses a process known as ____ to quickly identify changes to the internal environment.

Correct		Percent Answered
	baseline	20%
✅	difference analysis	70%
	differential	10%
	revision	0%
	Unanswered	0%

- **Question 68: True/False**
  Average Score 6 points

It will be easy to quantify and transfer risk through insurance in cloud computing.

Correct	Answers	Percent Answered

	True	40%
✅	False	60%
	Unanswered	0%

- **Question 69: Fill in the Blank**
  Average Score 4 points

What is the key component called for Amazon's cloud infrastructure?

Correct	Answers	Percent Answered
	simple storage service	10%
	amazon machine image	30%
	ec2	30%
	servertemplates	10%
	amazon web service	10%
✅	amazon machine image (ami)	10%
	Unanswered	0%

- **Question 70: Multiple Choice**
  Average Score 8 points

In cloud computing who has the responsibility for security?

Correct		Percent Answered
✅	the owner and the service provider	80%
	the owner	0%
	the service provider	10%
	it depends upon the SLA	10%
	Unanswered	0%

- **Question 71: Multiple Choice**
  Average Score 5 points

What are the two worries of IT management in relation to cloud computing?

Correct		Percent Answered
	risk management and security management	20%
✅	who is processing my data and Iwho has custody of my data	50%
	risk and compliance management	20%
	storage space and reliability	10%
	Unanswered	0%

- **Question 72: True/False**
  Average Score 9 points

Integration of browsers with identification and access management systems is a necessary precursor to widespread use of cloud computing for commercial purposes

Correct	Answers	Percent Answered
✅	True	90%
	False	10%
	Unanswered	0%

- **Question 73: Multiple Choice**
  Average Score 8 points

A black swan

Correct		Percent Answered
	RFID	0%
	SCADA	0%
✅	cloud computing	80%
	CEH	0%
	Unanswered	20%

- **Question 74: Multiple Choice**
  Average Score 7 points

Google

Correct		Percent Answered
	CaaS	0%
	IaaS	0%
✅	Saas	70%
	Paas	20%
	Unanswered	10%

- **Question 75: Multiple Choice**
  Average Score 6 points

Store and organize information of any format in the cloud.

Correct		Percent Answered
	Google	10%
	Amazon	0%
	Salesforce.com	10%
✅	Evernote	60%
	Unanswered	20%

- **Question 76: Multiple Answer**
  Average Score 8.2 points

IaaS

Correct	Answers	Percent Correct	Percent Incorrect
✅	Amazon	100%	0%
	Azure	22.222%	77.778%
✅	Enomaly	88.889%	11.111%
	NetSuite	33.333%	66.667%

Name	Test2-11W
Score	468.48
Attempts	33 (Total of 33 attempts for this assessment)

Graded Attempts	33
Attempts that Need Grading	0

Instructions

- **Question 1: Multiple Choice**
  Average Score 5.45 points

Of the respondents surveyed in the CSI 2010/11 report, approximately what percentage had indicated they had experienced a security incident.

Correct		Percent Answered
	26	6.061%
✓	41	54.545%
	67	30.303%
	83	9.091%
	Unanswered	0%

- **Question 2: Multiple Choice**
  Average Score 7.58 points

Which law/industry regulation had the biggest impact to most of the respondents in the CSI survey?

Correct		Percent Answered
	PCI-DSS	24.242%
	SOX	0%
	GLBA	0%
✓	HIPPA	75.758%
	Unanswered	0%

- **Question 3: Multiple Choice**
  Average Score 8.79 points

What area does the HITECH Act effect?

Correct		Percent Answered
✓	health information related companies	87.879%
	high-tech Silicon Valley companies	3.03%
	educational institutions	9.091%
	startup companies	0%
	Unanswered	0%

- **Question 4: Multiple Choice**
  Average Score 7.58 points

What was the number one type of attack the CSI respondents experienced?

Correct		Percent Answered
	phishing attacks	6.061%
	insider abuse	12.121%
	DoS attacks	6.061%
✓	malware infection	75.758%

	Unanswered	0%

- **Question 5: Multiple Choice**
  Average Score 9.39 points

What is the name of person who was responsible for the Hearland break-in?

Correct		Percent Answered
	Woodlock	6.061%
✅	Gonzalez	93.939%
	Heymann	0%
	Weinberg	0%
	Unanswered	0%

- **Question 6: Multiple Choice**
  Average Score 3.64 points

State Security Breach Notification Laws

Correct		Percent Answered
	SSBNL	60.606%
✅	NCSL	36.364%
	TCIT	3.03%
	SOX	0%
	Unanswered	0%

- **Question 7: Multiple Choice**
  Average Score 6.97 points

The framework of this law is established by NIST.

Correct		Percent Answered
	HIPPA	18.182%
	FERPA	9.091%
✅	FISMA	69.697%
	FPA	3.03%
	Unanswered	0%

- **Question 8: Multiple Choice**
  Average Score 5.76 points

This law is related to identity theft.

Correct		Percent Answered
✅	ITERA	57.576%
	CDA	9.091%
	FERPA	18.182%
	PCI-DSS	15.152%
	Unanswered	0%

- **Question 9: Multiple Choice**
  Average Score 6.06 points

Financial reporting for publicly-owned companies.

Correct		Percent Answered
	GLBA	21.212%
☑	SOX	60.606%
	SAS 70	12.121%
	DMCA	6.061%
	Unanswered	0%

- **Question 10: Multiple Choice**
  Average Score 8.48 points

A set of standards related to the credit industry.

Correct		Percent Answered
	DOS	6.061%
	CLSR	6.061%
	GLBA	3.03%
☑	PCI	84.848%
	Unanswered	0%

- **Question 11: Multiple Choice**
  Average Score 6.06 points

The Financial Service Modernization Act is also know as

Correct		Percent Answered
☑	GLBA	60.606%
	SOX	0%
	PCI	0%
	FISMA	39.394%
	Unanswered	0%

- **Question 12: Multiple Choice**
  Average Score 8.18 points

SP800-53 refers to this law.

Correct		Percent Answered
	Patriot Act	6.061%
	Identity Theft Enforcement and Restitution Act	9.091%
☑	FISMA	81.818%
	FERPA	3.03%
	Unanswered	0%

- **Question 13: Multiple Choice**
  Average Score 7.88 points

A logical or physical discontinuity in a network to prevent unauthorized access to data or resources.

Correct		Percent Answered
☑	firewall	78.788%
	IPS	12.121%

	IPSec	3.03%
	SMC Barricade	6.061%
	Unanswered	0%

- **Question 14: Multiple Choice**
  Average Score 6.97 points

A mechanism that implements access control for a system resource by listing the identities of the system entities that are permitted to access the resource.

Correct		Percent Answered
	ACS	9.091%
	IDSec	12.121%
☑	ACLs	69.697%
	Kerberos	9.091%
	Unanswered	0%

- **Question 15: Multiple Choice**
  Average Score 6.36 points

A server that acts as an intermediary between a workstation user and the Internet so that the enterprise can ensure security, administrative control, and caching service.

Correct		Percent Answered
	gateway	18.182%
	soho	3.03%
☑	proxy	63.636%
	firewall	15.152%
	Unanswered	0%

- **Question 16: Multiple Choice**
  Average Score 5.45 points

An organization that studies computer and network INFOSEC in order to provide incident response services to victims of attacks, publish alerts concerning vulnerabilities and threats, and offer other information to help improve computer and network security.

Correct		Percent Answered
	OWASP	39.394%
	IEEE	3.03%
☑	CERT/CC	54.545%
	DHS	3.03%
	Unanswered	0%

- **Question 17: Multiple Choice**
  Average Score 6.36 points

A system developed at the MIT that depends on passwords and symmetric cryptography to implement ticket-based, peer entity authentication service and access control service distributed in a client-server network environment.

Correct		Percent Answered
	Sesame	3.03%
	IPSec	9.091%
	PGP	24.242%

☑	Kerberos	63.636%
	Unanswered	0%

- **Question 18: Multiple Choice**
  Average Score 7.27 points

_____ inspection is a firewall architecture that works at the network layer.

Correct		Percent Answered
☑	Stateful	72.727%
	MAC	15.152%
	Circuit	3.03%
	Application	9.091%
	Unanswered	0%

- **Question 19: Multiple Choice**
  Average Score 5.15 points

A security protocol for wireless local area networks defined in the standard IEEE 802.11b.

Correct		Percent Answered
☑	WEP	51.515%
	IEEE-11Bb	21.212%
	WAP	27.273%
	Telnet	0%
	Unanswered	0%

- **Question 20: Multiple Choice**
  Average Score 8.48 points

The protocol governing network management and the monitoring of network devices and their functions. A set of protocols for managing complex networks.

Correct		Percent Answered
	SMTP	6.061%
	SSL	9.091%
☑	SNMP	84.848%
	MNPS	0%
	Unanswered	0%

- **Question 21: Multiple Choice**
  Average Score 6.67 points

An attack that sends an improperly large ICMP echo request packet with the intent of overflowing the input buffers of the destination machine and causing it to crash.

Correct		Percent Answered
☑	Ping of Death	66.667%
	DDoS	15.152%
	SYN Flood	15.152%
	Cyclone	3.03%
	Unanswered	0%

- **Question 22: Multiple Choice**
  Average Score 3.64 points

A protocol that ensures privacy between communicating applications and their users on the Internet.

Correct		Percent Answered
✓	TLS	36.364%
	SSL	48.485%
	IPSec	12.121%
	TCPSec	3.03%
	Unanswered	0%

- **Question 23: Multiple Choice**
  Average Score 8.48 points

A developing standard for security at the network or packet processing layer of network communication.

Correct		Percent Answered
	NIST ISA	6.061%
✓	IPSec	84.848%
	PPSec	0%
	IETF	9.091%
	Unanswered	0%

- **Question 24: Multiple Choice**
  Average Score 6.67 points

A protocol for transmitting private documents via the Internet.

Correct		Percent Answered
	TPD	3.03%
	SecTunnel	3.03%
✓	SSL	66.667%
	PPTP	27.273%
	Unanswered	0%

- **Question 25: Multiple Choice**
  Average Score 4.24 points

An extension of the Point-to-Point Tunneling Protocol used by an Internet service provider to enable the operation of a virtual private network over the Internet.

Correct		Percent Answered
	VPPTP	36.364%
✓	L2TP	42.424%
	WEP	0%
	IVPN	21.212%
	Unanswered	0%

- **Question 26: Multiple Choice**
  Average Score 7.58 points

A data structure associated with a system resource that enumerates the identities of system entities that are permitted access to the resource and the access permission for each entity.

Correct		Percent Answered
	APDS	6.061%
	IDSL	15.152%
	ResourceCtrl	3.03%
✓	ACL	75.758%
	Unanswered	0%

- **Question 27: True/False**
  Average Score 9.09 points

A firewall may consist of a pair of filtering routers and one or more proxy servers running on one or more bastion hosts, all connected to a small, dedicated LAN between the two routers.

Correct	Answers	Percent Answered
✓	True	90.909%
	False	9.091%
	Unanswered	0%

- **Question 28: Multiple Choice**
  Average Score 6.06 points

When ____ authentication is based on passwords, the protocol is known to be vulnerable to off-line dictionary attacks by eavesdroppers who capture the initial user-to-KDC exchange.

Correct		Percent Answered
✓	Kerberos	60.606%
	Sesame	6.061%
	IPSec	6.061%
	WEP	27.273%
	Unanswered	0%

- **Question 29: True/False**
  Average Score 6.06 points

L2TP specifies security services and thus is independent on protocols layered above and below it to provide any needed security.

Correct	Answers	Percent Answered
	True	39.394%
✓	False	60.606%
	Unanswered	0%

- **Question 30: Multiple Choice**
  Average Score 8.79 points

A standard for providing cellular telephones, pagers, and other handheld devices with secure access to e-mail and text-based Web pages

Correct		Percent Answered
	WEP	9.091%
	AWAC	0%
✓	WAP	87.879%
	802.13g	3.03%

	Unanswered	0%

- **Question 31: Multiple Choice**
  Average Score 8.48 points

What is the name of the database that is used to maintain hacking information?

Correct		Percent Answered
☑	WHID	84.848%
	WHDB	3.03%
	HackmeDB	6.061%
	WASC	6.061%
	Unanswered	0%

- **Question 32: Multiple Choice**
  Average Score 2.42 points

According to the numbers, SQL Injection attacks accounted for what percentage of the overall attacks on the web.

Correct		Percent Answered
	45%	36.364%
	27%	24.242%
☑	25%	24.242%
	17%	15.152%
	Unanswered	0%

- **Question 33: Multiple Choice**
  Average Score 6.67 points

How far back have buffer overflows been known as a potential problem?

Correct		Percent Answered
	since 1960s	18.182%
☑	since 1970s	66.667%
	since 1980s	12.121%
	since 1990s	3.03%
	Unanswered	0%

- **Question 34: Multiple Choice**
  Average Score 6.67 points

Why do we have cookies?

Correct		Percent Answered
☑	because the web has no state	66.667%
	it is easier to serve up the html markup	9.091%
	because it is a way of caching	24.242%
	to prevent hackers from stealing information from the user	0%
	Unanswered	0%

- **Question 35: Multiple Choice**
  Average Score 4.55 points

What method was used to hack CardSystems?

Correct		Percent Answered
	XSS	33.333%
☑	SQL Injection	45.455%
	Insecure direct object reference	15.152%
	CSRF	6.061%
	Unanswered	0%

- **Question 36: Multiple Choice**
  Average Score 4.24 points

Which STRIDE element would an error message that is generated from the system possiblity fit?

Correct		Percent Answered
	S	15.152%
	R	18.182%
☑	I	42.424%
	E	24.242%
	Unanswered	0%

- **Question 37: Multiple Choice**
  Average Score 6.06 points

Session hijacking is possible because

Correct		Percent Answered
☑	there is no state on the web	60.606%
	users make stupid mistakes	0%
	there is a failure to restrict URL access	15.152%
	there is insufficient transport layer protection	24.242%
	Unanswered	0%

- **Question 38: Multiple Choice**
  Average Score 6.97 points

Which of the following is not an acceptable method for protecting session ids?

Correct		Percent Answered
	validate user input	15.152%
	validate application output	6.061%
☑	create blacklists	69.697%
	restrict the access to cookies using DOMAIN and PATH attributes	9.091%
	Unanswered	0%

- **Question 39: Multiple Choice**
  Average Score 7.88 points

The de facto IDS tool.

Correct		Percent Answered
☑	Snort	78.788%
	OSSEC HIDS	9.091%

	Fragroute	6.061%
	Sguil	6.061%
	Unanswered	0%

- **Question 40: Multiple Choice**
  Average Score 4.24 points

Built on the ACID project.

Correct		Percent Answered
	Snort	33.333%
	Suricata	18.182%
✅	BASE	42.424%
	SANS IDS	6.061%
	Unanswered	0%

- **Question 41: Multiple Choice**
  Average Score 6.36 points

Associated with the Intrusion Detection Exchange Format.

Correct		Percent Answered
	NIST	27.273%
✅	IETF	63.636%
	SANS	6.061%
	W3C	3.03%
	Unanswered	0%

- **Question 42: Multiple Choice**
  Average Score 6.97 points

Primary tool for pentesters.

Correct		Percent Answered
✅	Metasploit	69.697%
	Suricata	12.121%
	Snort	15.152%
	SourceFire	3.03%
	Unanswered	0%

- **Question 43: Multiple Choice**
  Average Score 4.85 points

Uses the TCP/IP stack for intrusion detection.

Correct		Percent Answered
✅	signature-based	48.485%
	CIA-based	18.182%
	statistical-based	9.091%
	application-based	24.242%
	Unanswered	0%

- **Question 44: Multiple Choice**
  Average Score 5.76 points

An attack profile database used to dynamically create signatures which are compatible with various Network IDS

Correct		Percent Answered
	NVD	27.273%
☑	ArachNIDS	57.576%
	WHID	12.121%
	Tarpit	3.03%
	Unanswered	0%

- **Question 45: Multiple Choice**
  Average Score 3.94 points

_____ can be considered attempts to penetrate a system or to circumvent a system's security in order to gain information, modify information or disrupt the intended functioning of the targeted network or system

Correct		Percent Answered
	Pentesting	39.394%
	Footprinting	18.182%
☑	Attacks	39.394%
	Scanning	3.03%
	Unanswered	0%

- **Question 46: Multiple Choice**
  Average Score 8.18 points

Rather than penetrating a systems security by hacking, a _____ attack will just take the system out, denying the service to its user.

Correct		Percent Answered
	Honeypot	6.061%
	Worm	9.091%
	OOB	3.03%
☑	DOS	81.818%
	Unanswered	0%

- **Question 47: Multiple Choice**
  Average Score 4.55 points

_____ is a project to develop protocols and application programming interfaces in order that research in intrusion detection research can be shared and so that intrusion detection components can be reused in other systems.

Correct		Percent Answered
	IDWG	24.242%
	OISF	27.273%
	NIST	3.03%
☑	CIDF	45.455%
	Unanswered	0%

- **Question 48: Multiple Choice**
  Average Score 6.97 points

Occurs when an attack or an event is either not detected by the IDS or is considered benign by the analyst.

Correct		Percent Answered
	false positive	24.242%
	true negative	6.061%
	true positive	0%
✅	false negative	69.697%
	Unanswered	0%

- **Question 49: Multiple Choice**
  Average Score 5.76 points

Applying artificial intelligence in the use of detecting intrusions

Correct		Percent Answered
	data mining	36.364%
	non-repudiation	6.061%
✅	heuristics	57.576%
	confidence value	0%
	Unanswered	0%

- **Question 50: Multiple Choice**
  Average Score 7.27 points

Are best placed to detect computer misuse from trusted insiders and those who have infiltrated your network evading traditional methods of detection.

Correct		Percent Answered
	NIDS	27.273%
	AIDS	0%
✅	HIDS	72.727%
	ACID	0%
	Unanswered	0%

- **Question 51: Multiple Choice**
  Average Score 6.36 points

By setting the IDPS interface configuration to _____ mode, you can see all the network traffic on your segment regardless of the source or destination.

Correct		Percent Answered
	unsafe	15.152%
	heuristics	12.121%
	fragmentation	9.091%
✅	promiscuous	63.636%
	Unanswered	0%

- **Question 52: Multiple Choice**
  Average Score 4.85 points

Usually passive and not easy for hackers to attack directly.

Correct	Percent Answered

☑	NIDS	48.485%
	HIDS	24.242%
	AIPS	6.061%
	firewalls	21.212%
	Unanswered	0%

- **Question 53: Multiple Choice**
  Average Score 4.55 points

A major advantage of HIDS over NIDS systems is that

Correct		Percent Answered
☑	they can access information encrypted when traveling over the network	45.455%
	they are not susceptible to direct attack	48.485%
	pose less management issues	6.061%
	use less amounts of disk space	0%
	Unanswered	0%

- **Question 54: Multiple Choice**
  Average Score 6.36 points

A multi-threaded intrusion detection/prevention engine

Correct		Percent Answered
	Sguil	3.03%
☑	Suricata	63.636%
	OSSEC HIDS	24.242%
	BASE	9.091%
	Unanswered	0%

- **Question 55: Multiple Choice**
  Average Score 4.24 points

Discovering the Internet addresses owned or controlled by an organization.

Correct		Percent Answered
	fingerprinting	21.212%
☑	footprinting	42.424%
	mapping	33.333%
	attack vectoring	3.03%
	Unanswered	0%

- **Question 56: Multiple Choice**
  Average Score 4.24 points

In biometric control systems, authentication is a validation of the ____ identity.

Correct		Percent Answered
	employee's	51.515%
	intruder's	3.03%
	credential's	3.03%

✅	supplicant's	42.424%
	Unanswered	0%

- **Question 57: Multiple Choice**
  Average Score 6.97 points

What organization is responsible for maintaining the CVE?

Correct		Percent Answered
✅	Mitre	69.697%
	NIST	21.212%
	Microsoft	3.03%
	OSF	6.061%
	Unanswered	0%

- **Question 58: Multiple Choice**
  Average Score 7.27 points

A mistake in software that be directly used by a hacker to gain access to a system or network.

Correct		Percent Answered
	exposure	3.03%
	bug	18.182%
	attack vector	6.061%
✅	vulnerability	72.727%
	Unanswered	0%

- **Question 59: True/False**
  Average Score 3.03 points

CVE contains information such as risk, impact, fix information, and detailed technical information on each vulnerability.

Correct	Answers	Percent Answered
	True	69.697%
✅	False	30.303%
	Unanswered	0%

- **Question 60: Multiple Choice**
  Average Score 6.97 points

Uses the CWE as a classification mechanism that differentiates CVEs by the type of vulnerability they represent.

Correct		Percent Answered
	SCAP	15.152%
	OVAL	9.091%
✅	NVD	69.697%
	XCCDF	6.061%
	Unanswered	0%

- **Question 61: Multiple Choice**
  Average Score 8.79 points

Provides a universal open and standardized method for rating IT vulnerabilities.

Correct		Percent Answered
	ITV	3.03%
	CPE	9.091%
✅	CVSS	87.879%
	OSRV	0%
	Unanswered	0%

- **Question 62: Multiple Choice**
  Average Score 4.85 points

The database system that uses SCAP.

Correct		Percent Answered
	CERIAS	6.061%
	SCAPDB	30.303%
	FISMA	15.152%
✅	NVD	48.485%
	Unanswered	0%

- **Question 63: Multiple Choice**
  Average Score 7.58 points

A database of web app related security incidents.

Correct		Percent Answered
	NVD	6.061%
✅	WHID	75.758%
	CWE	15.152%
	SCAPDB	3.03%
	Unanswered	0%

- **Question 64: Multiple Choice**
  Average Score 6.06 points

Which NIST document is related to AES?

Correct		Percent Answered
✅	FIPS 197	60.606%
	SP800-78	18.182%
	FIPS 140-2	12.121%
	SP800-106	9.091%
	Unanswered	0%

- **Question 65: Multiple Choice**
  Average Score 5.45 points

The process of obtaining original message from encrypted message without knowing the algorithms used.

Correct		Percent Answered
	cryptology	3.03%
✅	cryptanalysis	54.545%

	decryption	42.424%
	cryptoalgol	0%
	Unanswered	0%

- **Question 66: Multiple Choice**
  Average Score 6.67 points

A polyalphabetic encyrption scheme.

Correct		Percent Answered
	Bellaso	6.061%
	Vernam	9.091%
✅	Vigenere	66.667%
	PGP	18.182%
	Unanswered	0%

- **Question 67: Multiple Choice**
  Average Score 8.48 points

Uses the same key for encryption and decryption.

Correct		Percent Answered
	asymmetric encryption	12.121%
	hash encryption	0%
✅	symmetric enryption	84.848%
	polyalphabetic encryption	3.03%
	Unanswered	0%

- **Question 68: Multiple Choice**
  Average Score 4.85 points

The de facto cryptography standard for the government.

Correct		Percent Answered
	snort	0%
	DES	36.364%
	PGP	15.152%
✅	AES	48.485%
	Unanswered	0%

- **Question 69: Multiple Choice**
  Average Score 5.76 points

AES was adopted from the ____ cipher.

Correct		Percent Answered
	PGP	12.121%
	RSA	9.091%
	DES	21.212%
✅	Rijndael	57.576%
	Unanswered	0%

- **Question 70: Multiple Choice**
  Average Score 5.76 points

If you use a ____-bit key, it will be good for about 20-30 years barring any major revolultion in computing power.

Correct		Percent Answered
	512	15.152%
✓	256	57.576%
	768	9.091%
	128	18.182%
	Unanswered	0%

- **Question 71: Multiple Choice**
  Average Score 3.33 points

PKI incorporates

Correct		Percent Answered
✓	STRIDE	33.333%
	NR-CIA3	21.212%
	DREAD	24.242%
	CSIRT	21.212%
	Unanswered	0%

- **Question 72: Multiple Choice**
  Average Score 6.67 points

A _____ is a trusted third party that is trusted by both the subject (owner) of the certificate and the party relying upon the certificate.

Correct		Percent Answered
✓	CA	66.667%
	CD	9.091%
	DS	15.152%
	3DES	9.091%
	Unanswered	0%

- **Question 73: Multiple Choice**
  Average Score 1.52 points

Hiding information in a picture file.

Correct		Percent Answered
✓	hybrid cryptography	15.152%
	steganography	72.727%
	Diffie-Hellman	0%
	Bit encryption	12.121%
	Unanswered	0%

- **Question 74: Multiple Choice**
  Average Score 5.15 points

Uses public key encryption to secure channel over the public internet.

Correct		Percent Answered
	PKI	30.303%
✓	SSL	51.515%
	HTTPS	18.182%
	IDEA	0%
	Unanswered	0%

- **Question 75: Multiple Choice**
  Average Score 6.06 points

Uses Diffie-Hellman scheme for encryption.

Correct		Percent Answered
✓	IPSec	60.606%
	SSL	3.03%
	PGP	24.242%
	AES	12.121%
	Unanswered	0%

- **Question 76: Multiple Choice**
  Average Score 3.94 points

The defacto open standard for encryption and authentication.

Correct		Percent Answered
	AES	24.242%
	RSA	33.333%
✓	PGP	39.394%
	ESP	3.03%
	Unanswered	0%

Name **11W-Test3**

Question 1: Multiple Choice
Average Score 9 points

What is the name of Amazon's cloud service?

Correct		Percent Answered
✓	elastic compute cloud (ec2)	80%
	cloudwatch	0%
	amazon machine image (ami)	0%
	simpledb	0%
	Unanswered	20%

- **Question 2: Multiple Choice**
  Average Score 8 points

RFID technology was developed in the ____.

Correct	Percent Answered

	past decade	0%
	1980s	0%
	1960s	20%
✅	1950s	70%
	Unanswered	10%

- **Question 3: Multiple Choice**
  Average Score 9 points

_____ of a tag is an operational threat in that the physical or electronic destruction of the tag deprives downstream users of the tag of its data.

Correct		Percent Answered
	Skimming	0%
	Cloning	0%
✅	Killing	80%
	Shielding	0%
	Unanswered	20%

- **Question 4: Multiple Choice**
  Average Score 10 points

In the Soon/Tieyan article on RFID Security what security model do they use?

Correct		Percent Answered
	GIAC	0%
	STRIDE	0%
✅	DREAD	90%
	NR-CIA3	0%
	Unanswered	10%

- **Question 5: Multiple Answer**
  Average Score 8 points

The most common authentication techniques of RFID systems are

Correct	Answers	Percent Correct	Percent Incorrect
✅	passwords	80%	20%
✅	HMAC	70%	30%
✅	digital signatures	80%	20%
	CAs	90%	10%

- **Question 6: Multiple Choice**
  Average Score 7 points

Between 1987 and 1996 about how many reported cyberattacks were there on power lines, substations, and powerplants according to a DOE report.

Correct		Percent Answered
	15000	0%
	30000	20%
	9000	10%
✅	20000	60%

	Unanswered	10%

- **Question 7: Multiple Choice**
  Average Score 9 points

Which of the following is not a possible attack scenario on a SCADA system?

Correct		Percent Answered
	DoS	10%
	Spoofing	0%
	Direct manipulation of field devices	0%
☑	Repudiation	80%
	Unanswered	10%

- **Question 8: Multiple Choice**
  Average Score 9 points

Used to centrally monitor/control industrial equipment.

Correct		Percent Answered
☑	SCADA	90%
	ICS	0%
	RFID	0%
	IET	0%
	Unanswered	10%

- **Question 9: Multiple Choice**
  Average Score 6 points

How the US arranged for the Soviets to unintentionally cause severe damage to their natural gas pipelines via malware?

Correct		Percent Answered
	How the Cold War Was Really One.	10%
	The Most Monumental Non-Nuclear Explosion and Fire	10%
☑	At the Abyss	60%
	Hacking the Soviet Empire	10%
	Unanswered	10%

- **Question 10: True/False**
  Average Score 5 points

SCADA systems cannot be accessed via corporate networks because they were built separate from these systems.

Correct	Answers	Percent Answered
	True	40%
☑	False	50%
	Unanswered	10%

- **Question 11: Multiple Choice**
  Average Score 8 points

Many of the SCADA systems are based on the Intel _____ chip.

Correct	Percent Answered

	8086	20%
✅	8088	70%
	286	0%
	386	0%
	Unanswered	10%

- **Question 12: Multiple Choice**
  Average Score 5 points

What kind of encryption do most SCADA traffic use?

Correct		Percent Answered
	RSA	10%
	PGP	0%
	AES	20%
✅	Plain text	50%
	Unanswered	20%

- **Question 13: Multiple Choice**
  Average Score 10 points

SCADA communication systems are susceptible to _____ Flood attachs aimed at substations.

Correct		Percent Answered
	Comm	0%
	ACK	0%
✅	SYN	90%
	TCP	0%
	Unanswered	10%

- **Question 14: Multiple Choice**
  Average Score 10 points

TCP uses a ___-way handshake.

Correct		Percent Answered
	2	0%
✅	3	90%
	4	0%
	5	0%
	Unanswered	10%

- **Question 15: True/False**
  Average Score 5 points

CVE contains information such as risk, impact, fix information, and detailed technical information on each vulnerability.

Correct	Answers	Percent Answered
	True	40%
✅	False	40%
	Unanswered	20%

- **Question 16: Multiple Choice**
  Average Score 8 points

Uses the CWE as a classification mechanism that differentiates CVEs by the type of vulnerability they represent.

Correct		Percent Answered
	SCAP	0%
	OVAL	10%
✅	NVD	80%
	XCCDF	0%
	Unanswered	10%

- **Question 17: Multiple Choice**
  Average Score 10 points

A database of web app related security incidents.

Correct		Percent Answered
	NVD	0%
✅	WHID	90%
	CWE	0%
	SCAPDB	0%
	Unanswered	10%

- **Question 18: Multiple Choice**
  Average Score 8 points

A polyalphabetic encyrption scheme.

Correct		Percent Answered
	Bellaso	10%
	Vernam	0%
✅	Vigenere	70%
	PGP	0%
	Unanswered	20%

- **Question 19: Multiple Choice**
  Average Score 9 points

Cryptography standard for the US Government.

Correct		Percent Answered
	IEEE P1363	0%
	CyberSaber	0%
	OpenPGP	0%
✅	AES	80%
	Unanswered	20%

- **Question 20: Multiple Choice**
  Average Score 2 points

PKI incorporates

Correct		Percent Answered
✅	STRIDE	20%
	NR-CIA3	40%
	DREAD	0%
	CSIRT	30%
	Unanswered	10%

- **Question 21: Multiple Choice**
  Average Score 10 points

Hiding information in a picture file.

Correct		Percent Answered
	hybrid cryptography	0%
✅	steganography	90%
	Diffie-Hellman	0%
	Bitmap encryption	0%
	Unanswered	10%

- **Question 22: Multiple Choice**
  Average Score 6 points

Uses Diffie-Hellman.

Correct		Percent Answered
✅	IPSec	60%
	SSL	10%
	PGP	20%
	AES	0%
	Unanswered	10%

- **Question 23: Multiple Choice**
  Average Score 5 points

The defacto open standard for encryption and authentication.

Correct		Percent Answered
	AES	0%
	RSA	40%
✅	PGP	50%
	ESP	0%
	Unanswered	10%

- **Question 24: Multiple Choice**
  Average Score 4 points

A framework for information security.

Correct		Percent Answered
	IETF RFC 2169	10%
✅	ISO 27001	30%

	NIST SP 800-12	50%
	FIPS 140	0%
	Unanswered	10%

- **Question 25: Multiple Choice**
  Average Score 8 points

A course of action used by an organization to convey instructions from management to those who perform duties.

Correct		Percent Answered
✓	policy	70%
	law	0%
	standard	0%
	procedure	10%
	Unanswered	20%

- **Question 26: True/False**
  Average Score 7 points

Keystroke monitoring has been determined to unlawful without a warrant.

Correct	Answers	Percent Answered
	True	30%
✓	False	60%
	Unanswered	10%

- **Question 27: Multiple Choice**
  Average Score 6 points

What is the organization that deals primarily with project management?

Correct		Percent Answered
✓	PMI	50%
	NIST	10%
	ISACA	10%
	SANS	20%
	Unanswered	10%

- **Question 28: Multiple Choice**
  Average Score 6 points

What is the name of the CERT methodology for risk management?

Correct		Percent Answered
✓	OCTAVE	60%
	CSIRT	20%
	TAM	0%
	CRiSIS	10%
	Unanswered	10%

- **Question 29: Multiple Choice**
  Average Score 4 points

Developed with ISO 17799 standard in mind.

Correct		Percent Answered
	BS7799	10%
☑	COBRA	40%
	ITIL	20%
	IETF RFC 2031	10%
	Unanswered	20%

- **Question 30: Multiple Choice**
  Average Score 9 points

A function of the likelihood of a given threat source's exercising a particular potential vulnerability.

Correct		Percent Answered
☑	risk	80%
	threat agent	10%
	functional vulnerability	0%
	adversary	0%
	Unanswered	10%

- **Question 31: Multiple Answer**
  Average Score 8.73 points

Related to vulnerability indentification.

Correct	Answers	Percent Correct	Percent Incorrect
☑	Specific avenues threat agents can exploit to attack an information asset are called vulnerabilities	90%	10%
☑	Examine how each threat could be perpetrated and list organization’s assets and vulnerabilities	90%	10%
	Process works best when people with similar backgrounds within organization work iteratively in a series of brainstorming sessions	60%	40%
☑	At end of risk identification process, list of assets and their vulnerabilities is achieved	90%	10%

- **Question 32: Multiple Answer**
  Average Score 8.67 points

Acceptance or transfer of risk.

Correct	Answers	Percent Correct	Percent Incorrect
☑	In some instances, risk must simply be acknowledged as part of organization’s business process	80%	20%
☑	Management must be assured that decisions made to assume risk the organization are made by properly informed decision makers	90%	10%
☑	Information security must make sure the right people make risk assumption decisions with complete knowledge of the impact of the decision	90%	10%
	Mitigating risks is the easy part.	100%	0%

- **Question 33: Matching**
  Average Score 9 points

Risk control strategies

apply safeguards

Correct	Answers	Percent Answered

✅	avoidance	70%
	transference	10%
	mitigation	10%
	acceptance	0%
	Unanswered	10%

transfer the risk

Correct	Answers	Percent Answered
	avoidance	10%
✅	transference	80%
	mitigation	0%
	acceptance	0%
	Unanswered	10%

reduce impact

Correct	Answers	Percent Answered
	avoidance	10%
	transference	0%
✅	mitigation	80%
	acceptance	0%
	Unanswered	10%

understand consequences and take on the risk

Correct	Answers	Percent Answered
	avoidance	0%
	transference	0%
	mitigation	0%
✅	acceptance	90%
	Unanswered	10%

- **Question 34: Multiple Choice**
  Average Score 1 points

Focus is on physical security.

Correct		Percent Answered
✅	ASIS	10%
	OWASP	10%
	SANS	40%
	ISACA	30%
	Unanswered	10%

- **Question 35: Either/Or**
  Average Score 8 points

Which comes first: physically securing the computer hardware and then securing the computer software.

Correct	Answers	Percent Answered
✅	Agree	70%
	Disagree	20%

	Unanswered	10%

- **Question 36: Multiple Choice**
  Average Score 10 points

Who is UC's CISO?

Correct		Percent Answered
☑	Kevin McLaughlin	90%
	Greg Williams	0%
	Michael Lieberman	0%
	Greg Seipelt	0%
	Unanswered	10%

- **Question 37: Multiple Choice**
  Average Score 8 points

CERT

Correct		Percent Answered
	CCSA	0%
☑	CSIH	70%
	CEH	0%
	CIPP	10%
	Unanswered	20%

- **Question 38: Multiple Choice**
  Average Score 7 points

This certification deals with the 802.11 standard.

Correct		Percent Answered
	WIPS	0%
	WNMS	0%
☑	CWSP	70%
	CEPT	10%
	Unanswered	20%

- **Question 39: Multiple Choice**
  Average Score 8 points

Consider one of the top security certifications.

Correct		Percent Answered
	Security+	0%
☑	CISSP	70%
	CSP	0%
	CISSO	10%
	Unanswered	20%

- **Question 40: Multiple Choice**
  Average Score 4 points

Has a certification for a web app tester.

Correct		Percent Answered
✅	CREST	40%
	OWASP	30%
	GIAC	30%
	RSA	0%
	Unanswered	0%

- **Question 41: Multiple Choice**
  Average Score 0 points

SCADA

Correct		Percent Answered
	CIW	0%
	PCIP	40%
	CWSP	50%
	CCNA	10%
	Unanswered	0%

- **Question 42: Multiple Choice**
  Average Score 10 points

A pen-testing certification that teaches the how hackers do it.

Correct		Percent Answered
	GSSP	0%
	GCIH	0%
	GREM	0%
✅	CEH	100%
	Unanswered	0%

- **Question 43: Multiple Choice**
  Average Score 10 points

SANS

Correct		Percent Answered
✅	GIAC	100%
	NIST	0%
	CREST	0%
	EC-Council	0%
	Unanswered	0%

- **Question 44: Multiple Choice**
  Average Score 10 points

CSSA

Correct		Percent Answered
	system security	0%
	software security	0%

✅	SCADA security	100%
	public sector security	0%
	Unanswered	0%

- **Question 45: Multiple Answer**
  Average Score 5.6 points

Pick the certifications that are related to pen testing.

Correct	Answers	Percent Correct	Percent Incorrect
✅	GPEN	60%	40%
✅	CEH	90%	10%
	GCFA	100%	0%
✅	CEPT	80%	20%
	CISA	90%	10%

- **Question 46: Multiple Choice**
  Average Score 7 points

Before you can apply for this certification you must have at least 5 years of experience.

Correct		Percent Answered
✅	CISA	70%
	OSWP	0%
	CISSO	20%
	CSSLP	10%
	Unanswered	0%

- **Question 47: Multiple Choice**
  Average Score 9 points

A certification accredited by both ANSI and ISO.

Correct		Percent Answered
	CRISC	10%
✅	CISSP	90%
	OPSA	0%
	GISF	0%
	Unanswered	0%

- **Question 48: Multiple Answer**
  Average Score 6.04 points

Identify the certifications that are considered the top ones to have.

Correct	Answers	Percent Correct	Percent Incorrect
✅	CISSP	100%	0%
✅	GSLC	22.222%	77.778%
✅	CISM	88.889%	11.111%
	Security+	88.889%	11.111%
	CTA	77.778%	22.222%

- **Question 49: True/False**
  Average Score 9 points

An EDL in a protective sleeve is readable at a distance of some tens of meters.

Correct	Answers	Percent Answered
	True	0%
☑	False	90%
	Unanswered	10%

- **Question 50: True/False**
  Average Score 9 points

In most cases, SCADA traffic can run on only two possible ports.

Correct	Answers	Percent Answered
	True	10%
☑	False	90%
	Unanswered	0%

- **Question 51: True/False**
  Average Score 9 points

On Aug 21, 2007 two LA traffic engineers hacked one of their traffic computers and sent commands to disconnect five signal control boxes at critical intersections.

Correct	Answers	Percent Answered
	True	0%
☑	False	90%
	Unanswered	10%

- **Question 52: Fill in the Blank**
  Average Score 7 points

Of the six risk categories of cloud computing, which one is the most critical?

Correct	Answers	Percent Answered
☑	authentication	70%
	data theft	10%
	isolation failure	10%
	malicious insiders	10%
	Unanswered	0%

- **Question 53: Fill in the Blank**
  Average Score 0 points

Be extremely cautious about any data in http headers that can be user-_____.

Correct	Answers	Percent Answered
	edited	10%
	harmful	10%
	defined	10%
	manipulated	10%
	controlled	10%

beware	10%
agent	10%
modified	20%
sensitive	10%
Unanswered	0%

- **Question 54: True/False**
  Average Score 9 points

With the use of AJAX, web application has become more secure.

Correct	Answers	Percent Answered
	True	10%
☑	False	90%
	Unanswered	0%

- **Question 55: Multiple Answer**
  Average Score 8.27 points

Related to vulnerability indentification.

Correct	Answers	Percent Correct	Percent Incorrect
☑	Specific avenues threat agents can exploit to attack an information asset are called vulnerabilities	90%	10%
☑	Examine how each threat could be perpetrated and list organization's assets and vulnerabilities	100%	0%
	Process works best when people with similar backgrounds within organization work iteratively in a series of brainstorming sessions	60%	40%
☑	At end of risk identification process, list of assets and their vulnerabilities is achieved	90%	10%

- **Question 56: True/False**
  Average Score 3 points

Computer rooms and wiring closets require special attention to ensure the STRIDE of infomation is protected.

Correct	Answers	Percent Answered
	True	60%
☑	False	30%
	Unanswered	10%

- **Question 57: True/False**
  Average Score 7 points

Today, the use of a halogen gas systen is highly recommended to protect a computer room from damage due to a fire.

Correct	Answers	Percent Answered
	True	30%
☑	False	70%
	Unanswered	0%

- **Question 58: True/False**
  Average Score 8 points

The goal of the project plan is to add new security components that negatively impact the day-to-day operations of individual employees.

Correct	Answers	Percent Answered
	True	10%
✅	False	80%
	Unanswered	10%

- **Question 59: True/False**
  Average Score 6 points

To prepare the WBS, you need an ERP package.

Correct	Answers	Percent Answered
	True	40%
✅	False	60%
	Unanswered	0%

- **Question 60: Multiple Choice**
  Average Score 10 points

____ testing is a straightforward testing technique that looks for vulnerabilities in a program or protocol by feeding random input to the program or a network running the protocol.

Correct		Percent Answered
	Buzz	0%
✅	Fuzz	100%
	Spike	0%
	Black	0%
	Unanswered	0%

- **Question 61: Multiple Choice**
  Average Score 8 points

The interior walls reach only part way to the next floor, which leaves a space above the ceiling of the offices but below the top of the storey. This space is called a(n) ____.

Correct		Percent Answered
	kneespace	0%
	attic	10%
✅	plenum	80%
	padding	0%
	Unanswered	10%

- **Question 62: Multiple Choice**
  Average Score 8 points

Class ____ fires are extinguished with agents that must be non-conducting.

Correct		Percent Answered
	A	0%
	B	0%
✅	C	80%
	D	10%
	Unanswered	10%

- **Question 63: Multiple Choice**
  Average Score 9 points

A relatively new technology to support the location of lost or stolen laptops is ____.

Correct		Percent Answered
✓	CompuTrace	90%
	Norton	0%
	Netscape	0%
	SSL	0%
	Unanswered	10%

- **Question 64: Multiple Choice**
  Average Score 6 points

By managing the ____, the organization can reduce unintended consequences by having a process to resolve potential conflict and disruption that uncoordinated change can introduce.

Correct		Percent Answered
	changeover	30%
	wrap-up	0%
✓	process of change	60%
	governance	10%
	Unanswered	0%

- **Question 65: Multiple Choice**
  Average Score 8 points

Most guards have clear ____ that help them to act decisively in unfamiliar situations.

Correct		Percent Answered
	MACs	0%
✓	SOPs	80%
	POSs	0%
	OPSs	10%
	Unanswered	10%

- **Question 66: Multiple Choice**
  Average Score 8 points

The Plan-Do-Check-Act process is an implementation of the ____ approach to internal controls to manage risk.

Correct		Percent Answered
	CNSS 4012	0%
	NIST SP800-12	20%
✓	ISO 27001	80%
	ISO 1899	0%
	Unanswered	0%

- **Question 67: Multiple Choice**
  Average Score 7 points

One approach that can improve the situational awareness of the information security function uses a process known as ____ to quickly identify changes to the internal environment.

Correct		Percent Answered
	baseline	20%
✅	difference analysis	70%
	differential	10%
	revision	0%
	Unanswered	0%

- **Question 68: True/False**
  Average Score 6 points

It will be easy to quantify and transfer risk through insurance in cloud computing.

Correct	Answers	Percent Answered
	True	40%
✅	False	60%
	Unanswered	0%

- **Question 69: Fill in the Blank**
  Average Score 4 points

What is the key component called for Amazon's cloud infrastructure?

Correct	Answers	Percent Answered
	simple storage service	10%
	amazon machine image	30%
	ec2	30%
	servertemplates	10%
	amazon web service	10%
✅	amazon machine image (ami)	10%
	Unanswered	0%

- **Question 70: Multiple Choice**
  Average Score 8 points

In cloud computing who has the responsibility for security?

Correct		Percent Answered
✅	the owner and the service provider	80%
	the owner	0%
	the service provider	10%
	it depends upon the SLA	10%
	Unanswered	0%

- **Question 71: Multiple Choice**
  Average Score 5 points

What are the two worries of IT management in relation to cloud computing?

Correct		Percent Answered
	risk management and security management	20%
✅	who is processing my data and Iwho has custody of my data	50%

	risk and compliance management	20%
	storage space and reliability	10%
	Unanswered	0%

- **Question 72: True/False**
  Average Score 9 points

Integration of browsers with identification and access management systems is a necessary precursor to widespread use of cloud computing for commercial purposes

Correct	Answers	Percent Answered
☑	True	90%
	False	10%
	Unanswered	0%

- **Question 73: Multiple Choice**
  Average Score 8 points

A black swan

Correct		Percent Answered
	RFID	0%
	SCADA	0%
☑	cloud computing	80%
	CEH	0%
	Unanswered	20%

- **Question 74: Multiple Choice**
  Average Score 7 points

Google

Correct		Percent Answered
	CaaS	0%
	IaaS	0%
☑	Saas	70%
	Paas	20%
	Unanswered	10%

- **Question 75: Multiple Choice**
  Average Score 6 points

Store and organize information of any format in the cloud.

Correct		Percent Answered
	Google	10%
	Amazon	0%
	Salesforce.com	10%
☑	Evernote	60%
	Unanswered	20%

- **Question 76: Multiple Answer**
  Average Score 8.2 points

IaaS

Correct	Answers	Percent Correct	Percent Incorrect
✅	Amazon	100%	0%
	Azure	22.222%	77.778%
✅	Enomaly	88.889%	11.111%
	NetSuite	33.333%	66.667%

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome:

4.1 Design & implement a website using appropriate design guidelines

Course Number/Name:

32 IT 220 Fundamentals of Web Development

A formal design process that focuses on usability and user modeled design is presented in class. Students demonstrate mastery of this program outcome by completing the final project assignment for this course.

20 out of 22 students (91%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Fundamentals of Web Development
Prof. Tom Wulf
Final Project Guidelines

Submitting your work:

- Your final project will be a complete Website implemented on a local hard drive ans submitted as a .zip file archive.
- **Projects are due by Monday of Exam Week** and may be turned in early.

Content Details:

- Because you are creating Websites that will not be available via the net, all normal copyright restrictions are waived since we have fair-use here for educational purposes. (If you plan to deploy your project on a site somewhere at a later date then you will have to observe copyright rules.)
- You are permitted to use any **separate** copy (text), active content (scripts), and media content (images, audio, and video files that you find, create, or otherwise acquire.
- However, you should not copy existing complete web documents or significant sections of existing web documents for your project. Specifically, you can snag any images or copy (text) that you find but should not copy web document fragments that already

include both copy (text) and images. You can take some copy that you found and insert separate images that you found somewhere else but don't copy content that is already combined. (That's called plagiarism generally in academic land!)

- Be sure to spell and grammar-check your content. I believe that Dreamweaver or Front Page will do this for you.
- Include validation reports for all the files in your site in a MS Word Document called validation.doc in the root directory of your project.

Technical Requirements:

- Design your page for 1024 X 768 resolution. (This should be the most common setting for most of the lab machines.)

  I will be re-viewing your project with Internet Explorer or Firefox on my home machine.

  You should check your project with a second browser…
- Use css stylesheets and **layouts** for the pages of your site. (You may choose to have more than one css file for your site but pages with common styles should share a common external CSS file.)
  - Use the stylesheets to create a reasonable and attractive consistent look and feel for your site. (Again, you may decide to create several separate look and feels for sub sections of your site.)
  - All page content should be in sections. (If you use the css layout correctly this will be the case anyway.)
  - Do not use tables for layout. (Use tables for tabular data content if and only if you happen to have any.)
  - All text should use first-line indents and generally be formatted as paragraphs with style rules applied to them from the external sheet.
  - Don't use any embedded, inline, or deprecated style tags.
- Images should reflect best practice:
  - Always have alt, height and width attributes for every image.
  - Force padding or margin space around images so they do not abutt adjacent text or other content.
  - Do not resize images via markup (Height and Width attributes) unless you do so specifically to support a design that completely resizes to adjust to browser characteristics. (Put another way, if you have to resize an image, do so by using a graphic editor to make a new image of the required size.)
  - For this assignment, if you are in doubt, more images will be better than fewer…
- Vaildation:
  - Every page on your site should validate to the current markup standards.
  - All css sheets should validate.
  - Your entire site should be ADA compliant.

    - **Include your validation screen shots for your entire site in a file called validation.doc in the root of your project archive. (Do not link it into your site.)**
- Navigation:
    - No broken links!
    - This should be consistent and allow the user to easily traverse your site.
    - Do not rely in any case on the browser back-button for navigating your site!
    - Most terminal pages (i. e. greatest number of clicks from the home page) should have an explicit link back to the main page if appropriate.
    - Linear page sequences should have previous and next links and possibly top and home links.
    - You might consider using a css style recipe for navigation menus.

Technical Details:

- Scanning is available in the 4th floor lab. The lab assistant can assist you with this.
- I believe you can borrow digital cameras and camcorders from the Student Media Center in the Langsam Library on the UC Clifton Campus. They also have a media lab for student use.

Suggestions:

- Use a Web editor like Dreamweaver or Frontpage to complete your project and take advantage of the predefined page styles that are available.
- Use an online color scheme generator to select colors that work together in your design.
- Create the entire project on a hard drive with a root directory that will represent the root of the archive you will submit.
- Check your project thoroughly with a link checking tool, validators, etc.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome:

4.2 Understand and implement elements of effective online users' experience

Course Number/Name:

32 IT 220 Fundamentals of Web Development

A formal design process that focuses on usability and user modeled design is presented in class.

Students demonstrate mastery of this program outcome by completing the final project assignment for this course.

20 out of 22 students (91%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Fundamentals of Web Development
Prof. Tom Wulf
Lab 2 – Web Design
(Due dates are posted in Bb. Note that there is no leeway for this particular assignment. If you have not completed it in time for the in-class discussion, you will get no credit.)

I am hoping that after our discussion of the Web design process, you have gotten into the habit of examining each Website that you encounter in terms of the functional design principles that I presented in class. For this assignment, I want you to prepare an evaluative critique for a Web site design that you have found on the Web. Do not submit a critique of a site that I have discussed in class particularly, do not submit a critique for the UC Website, since we examined that in detail.

You will submit your critique as an MS Word document. Include a working URL that links to the Web site that you are critiquing. (See directions below.)

Things to consider in your critique: (Do not copy the text of these questions into your submission file, include these items as appropriate in your critique. Your critique should be a coherent, smooth flowing report that is readable by a technical manager for a Web development team. You are permitted and encouraged to use any technical terms from the course.)

- What is the primary purpose of the site or what are the communication goals of the site?

- What different user groups/needs emerge from the site's purpose and are evident in the organization of the design? Is there some other organizational scheme? (This and the preceding point should be the main focus of your critique.)
- What works well for the design? What does not work? What would you do differently?
- How does the navigation work? Be sure to comment on efficiency (click-depth) clarity of organization, and try to describe the topology of the navigation scheme (linear linked, completely linked, shallow tree, deep tree). Comment on any specific navigational elements: breadcrumb trail, navbar, jumplist, site map, etc.)
- Is the site XHTML compliant? What about ADA compliance?
- Is there any advanced features? (Flash, video, audio, etc.) Do they support the site purpose or are they fluff? Is the use of these features done correctly in a manner that allows the user to decline or avoid them? Again, ADA compliance.

How to submit:

1. Submit your MS Word file as a single file named LastnameFirstnameLab3.doc using the Bb Assignment Mechanism.
2. Copy and paste the text of your Word Doc into the posting board that I have provided for the lab. Be sure that your URL works correctly.
3. Reply with substantive comments to one other submission. You are free to agree or disagree with the original critique but should support your assertions with factual statements and examples rather than just making vague statements. (Note that subjective statements are ok as long as you support your statements with reasoning. For example, *"I find the nav structure of the site to be bad because…"* is better than *"I find the nav structure of the site to be bad."*

Fundamentals of Web Development
Prof. Tom Wulf
Final Project Guidelines

Submitting your work:

- Your final project will be a complete Website implemented on a local hard drive ans submitted as a .zip file archive.
- **Projects are due by Monday of Exam Week** and may be turned in early.

Content Details:

- Because you are creating Websites that will not be available via the net, all normal copyright restrictions are waived since we have fair-use here for educational purposes. (If you plan to deploy your project on a site somewhere at a later date then you will have to observe copyright rules.)
- You are permitted to use any **separate** copy (text), active content (scripts), and media content (images, audio, and video files that you find, create, or otherwise acquire.
- However, you should not copy existing complete web documents or significant sections of existing web documents for your project. Specifically, you can snag any images or copy (text) that you find but should not copy web document fragments that already include both copy (text) and images. You can take some copy that you found and insert separate images that you found somewhere else but don't copy content that is already combined. (That's called plagiarism generally in academic land!)
- Be sure to spell and grammar-check your content. I believe that Dreamweaver or Front Page will do this for you.
- Include validation reports for all the files in your site in a MS Word Document called validation.doc in the root directory of your project.

Technical Requirements:

- Design your page for 1024 X 768 resolution. (This should be the most common setting for most of the lab machines.)

  I will be re-viewing your project with Internet Explorer or Firefox on my home machine.

  You should check your project with a second browser…
- Use css stylesheets and **layouts** for the pages of your site. (You may choose to have more than one css file for your site but pages with common styles should share a common external CSS file.)
  - Use the stylesheets to create a reasonable and attractive consistent look and feel for your site. (Again, you may decide to create several separate look and feels for sub sections of your site.)

    - All page content should be in sections. (If you use the css layout correctly this will be the case anyway.)
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    - Don't use any embedded, inline, or deprecated style tags.
- Images should reflect best practice:
    - Always have alt, height and width attributes for every image.
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    - Do not resize images via markup (Height and Width attributes) unless you do so specifically to support a design that completely resizes to adjust to browser characteristics. (Put another way, if you have to resize an image, do so by using a graphic editor to make a new image of the required size.)
    - For this assignment, if you are in doubt, more images will be better than fewer…
- Vaildation:
    - Every page on your site should validate to the current markup standards.
    - All css sheets should validate.
    - Your entire site should be ADA compliant.
    - **Include your validation screen shots for your entire site in a file called validation.doc in the root of your project archive. (Do not link it into your site.)**
- Navigation:
    - No broken links!
    - This should be consistent and allow the user to easily traverse your site.
    - Do not rely in any case on the browser back-button for navigating your site!
    - Most terminal pages (i. e. greatest number of clicks from the home page) should have an explicit link back to the main page if appropriate.
    - Linear page sequences should have previous and next links and possibly top and home links.
    - You might consider using a css style recipe for navigation menus.

Technical Details:

- Scanning is available in the 4th floor lab. The lab assistant can assist you with this.
- I believe you can borrow digital cameras and camcorders from the Student Media Center in the Langsam Library on the UC Clifton Campus. They also have a media lab for student use.

Suggestions:

- Use a Web editor like Dreamweaver or Frontpage to complete your project and take advantage of the predefined page styles that are available.
- Use an online color scheme generator to select colors that work together in your design.

- Create the entire project on a hard drive with a root directory that will represent the root of the archive you will submit.
- Check your project thoroughly with a link checking tool, validators, etc.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 09/10

Program Outcome: (Number and Description)

5.1 Understand the elements of capturing, editing and producing digital media (image, audio and video)

Course Number/Name:

32 IT 230: Fundamentals of Digital Media

In addition to the concepts from the text, in this course students become familiar with a set of very powerful and up-to-date software tools specifically designed for this purpose. By the end of the quarter students are familiar with ***Adobe InDesign*** for text manipulation, ***Adobe Photoshop*** for image manipulation, ***Adobe Soundbooth*** for sound manipulation, ***Adobe Flash*** for Animation, ***Microsoft Movie Maker*** for Movie manipulation, ***Belarc Advisor*** for automatic hardware/software inventory requirement analysis for multimedia creation, **Google*Site*** for integration, interaction, structure and navigation, and ***Google Form***, ***Google Docs*** for collaboration. In addition to the above tools, students have had experience with the use of ***Microphone***, ***Video Camera***, **Scanner**s, ***Sound Card***, ***Video Capture*** card, and ***CD/DVD*** burners. With the emphasis on hands-on practice in computer lab settings, students are able to assimilate different elements of multimedia while learning the related concepts from the book and applying them in practice and witnessing the results. Emphasis on attendance, learning by doing while examples are being shown via projector and students simultaneously carrying out the same tasks and completing the lab assignments individually or in a group outside the classroom. As a result of this methodology, students are able to acquire new skills to build upon and improve over time as a lifelong learning experience, knowing that change is constant and requires vigilance and continuous learning throughout life to stay current. Students develop abilities to create, capture, edit, and produce digital media (text, images, audio, video, animation) and are able to incorporate these media into multimedia productions. These include:

Lab 1	Determine hardware and software inventory in the Multimedia Lab using operating system commands based on the paper form provided to them. Compare that with the report generated automatically by the ***Belarc Advisor*** software. This exercise enables students to learn the hardware/software requirements for multimedia creation
Lab 2	Guided Tutorial: Using ***PowerPoint*** as a Multimedia Authoring Tool to integrate digital media elements that have already been created to create a presentation that contains text, images, animation and movie file
Lab 3	Adding navigation for interactivity to projects authored in PowerPoint building a basic original interactive multimedia production
Labs 4, 5, 6	Image manipulation using ***Adobe Photoshop*** application
Lab 7	Sound Editing with ***Adobe Soundbooth*** or ***Goldwave***

Lab 8 Using ***AdobeFlash*** application to create animation for use in the final project

Lab 9 Final Interactive multimedia production using ***Google Site***, ***Gmail***, and ***Google Docs.*** This project will bring together all of the elements allowing learners to comprehend and see the final result of their collective work.

Students are assessed in terms of how well they complete assignments, applying specific criteria discussed in the text, supplementary readings, and in lectures and discussions.

Outcome 5.1 - IMAGES:

students perform activities in the multimedia lab producing labs 4, 5, 6 demonstrating understanding of using ***AdobePhotoshop*** to create and own images using scanners, edit images applying operations such as resolution, pixel selection, transformation, color, cropping, scaling, rotating and filters to enhance their image

For Lab 4 - **19 out of 22 students (86%) got at least 120 out of 150 points on these combination of tasks. Goal of 80% of students getting 120 points WAS met.**

For Lab 5 - **18 out of 22 students (82%) got at least 120 out of 150 points on these combination of tasks. Goal of 80% of students getting 120 points WAS met.**

For Lab 6 - **17 out of 22 students (77%) got at least 120 out of 150 points on these combination of tasks. Goal of 80% of students getting 120 points WAS NOT met.**

Outcome 5.1 - SOUND:

To assess this outcome students perform activities in the multimedia lab producing labs 7 demonstrating understanding of using ***Adobe Soundbooth or Goldwave*** to create sound for use in multimedia applying operations such as recording, removing background noise, fade in, fade out, trimming, splicing, changing volume, mixing, compressing and applying effects to their sound files.

For Lab 7 - **20 out of 22 students (91%) got at least 120 out of 150 points on this combination of tasks. Goal of 80% of students getting 120 points WAS met.**

Outcome 5.1 - MOVIE& ANIMATION

To assess this outcome students perform activities in the multimedia lab producing labs 8, 9 demonstrating understanding of using ***Adobe Flash*** and ***Windows Movie Maker***, to create an animation and a short movie to be used to advertise on You Tube their final project. Students' abilities to create an animation were tested in lab 8 and movie making in lab 9. They were required to record, edit, and add sound, text and animation to their movie in this exercise.

For Lab 8 **14 out of 22 students (64%%) got at least 80 out of 100 points on these combination of tasks. Goal of 80% of students getting 80 points WAS NOT met.**

For Lab 9 **20 out of 22 students (91%) got at least 400 points out of 500 points Goal of 80% of students getting 400 points WAS met.**

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 09/10

Program Outcome: (Number and Description)

5.2Integrate digital media elements in presentations and other applications

Course Number/Name:

32 IT 230: Fundamentals of Digital Media

In addition to the concepts from the text, students complete lab assignments that require them to develop abilities to create, capture, edit, and produce digital media (text, images, audio, video, animation) and to incorporate these media into multimedia productions.

Students are assessed in terms of how well they complete assignments, applying specific criteria discussed in the text, supplementary readings, and in lectures and discussions.

To assess this outcome students perform activities in the multimedia lab producing labs 1, 2, and 3, demonstrating understanding of using ***AdobePhotoshop*** to create images using scanner and edit the images scanned applying operations such as resolution, pixel selection, transformation, color, cropping, scaling, rotating and filters to enhance their image to meet a requirement.

These include:

Lab 1 Determine hardware and software inventory in the Multimedia Lab using the operating system commands based on a set of questions provided to students in a paper form. Compare the result of their findings with the report generated automatically by the ***Belarc Advisor*** software. This exercise enables students to learn the hardware/software requirements for multimedia creation

21 out of 22 students (95%) got at least 40 out of 50 points on these combination of tasks. Goal of 80% of students getting 40 points WAS met.

Lab 2 Guided Tutorial: Using ***PowerPoint*** as a Multimedia Authoring Tool to integrate digital media elements that have already been created to create a presentation that contains text, images, animation and movie file

20 out of 22 students (91%) got at least 120 out of 150 points on these combination of tasks. Goal of 80% of students getting 120 points WAS met.

Lab 3 Adding navigation for interactivity to projects authored in PowerPoint building a basic original interactive multimedia production

21 out of 22 students (95%) got at least 120 out of 150 points on these combination of tasks. Goal of 80% of students getting 120 points WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome:

6.1Identify needs, analyze tasks, and develop profiles of users

Course Number/Name:

32 IT 220 Fundamentals of Web Development

6.1 Identify needs, analyze tasks, and develop profiles of users

A formal design process that focuses on usability and user-modeled design is presented in class.

Students demonstrate mastery of this program outcome by completing the final project assignment for this course.

20 out of 22 students (91%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Fundamentals of Web Development
Prof. Tom Wulf
Final Project Guidelines

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  You should check your project with a second browser…
- Use css stylesheets and **layouts** for the pages of your site. (You may choose to have more than one css file for your site but pages with common styles should share a common external CSS file.)
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  - For this assignment, if you are in doubt, more images will be better than fewer…
- Vaildation:
  - Every page on your site should validate to the current markup standards.
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  - Your entire site should be ADA compliant.

    - **Include your validation screen shots for your entire site in a file called validation.doc in the root of your project archive. (Do not link it into your site.)**
- Navigation:
    - No broken links!
    - This should be consistent and allow the user to easily traverse your site.
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Suggestions:

- Use a Web editor like Dreamweaver or Frontpage to complete your project and take advantage of the predefined page styles that are available.
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- Create the entire project on a hard drive with a root directory that will represent the root of the archive you will submit.
- Check your project thoroughly with a link checking tool, validators, etc.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome: (Number and Description)

6.2Develop and evaluate effective user interaction designs

Course Number/Name:

32 IT 430: Human Computer Interaction

To assess this outcome, students were required to design an Employment System as outlined in the text book for their final project. The following methodology was used as an example to guide students' design.

Conduct noun analysis

- Identify UI objects
- Assign objects to UI class
- Identify primary & secondary windows
- Develop menu structure
- Identify visual displays
- Identify screen-based controls
- Identify device icons
- Identify nouns that were used to describe work
- Identify verbs used to describe work
- Nouns: Objects
- Verbs: Actions on object

Noun Analysis Example

- Distribution Company requires a simple sales order processing system.
- The system will provide a product catalogue with a number of products (goods).
- The customer should be able to place an order over the phone and have that order dispatched from the warehouse to his delivery address. The bill should be sent to his billing address.
- There are several system users. These are salesman, sales clerks, credit clerks, sales manager, chief accountant, warehouse clerk, warehouse manager.
- The goal for the system is to facilitate the business of the company and each User's Job Function, whilst eliminating the use of paper and improving process quality and traceability

Define Users:

- Salesman,
- Accounts Clerk,

- Sales Manager,
- Warehouse Clerk,
- Chief Accountant

Tasks:

- Call Customer
- Choose Suitable Products from the Catalogue
- Find Goods in the Warehouse
- Dispatch Goods
- Collect Monies Due
- Dispatch Invoice
- Approve Credit Limit
- Receive Returned Goods
- Dispatch Monthly Statement
- Send Refund

Identify verbs & nouns

Nouns eventually become windows

Noun Analysis Example

Noun	**Verbs**
Customer	*Call*
Product	*Choose*
Catalogue	*Find*
Goods	*Sell*
Monies	*Dispatch*
Credit Limit	*Collect*
Returns	*Approve*
Statement	*Receive*
Refund	*Send*

Group Data For each of the nouns derived examine and list the attributes.

- Invoice
- Description of Goods
- Invoice Number
- Date
- Amount
- How can we group data, so that it is more useful to the User? How can it help the User get the job done? In other words, how can we make the data groupings help with the User Goals?

Identify UI Objects

Ask a range of Users to identify the Things that they work with or the Forms and Paperwork which identify or describe those things

- Credit Application Form
- Goods

- Catalogue
- Receipt
- Statement
- Invoice
- Dispatch Note

Assign UI Objects to UI Classes

- Task Class
- Display objects
- Control objects
- Primary or secondary windows
- Display Class
- Visual & auditory displays
- Controls Class
- Screen based controls
- Devices Class
- Device icons Printer, trash can, shopping cart, etc

Identify Primary and Secondary Windows

- Primary window
- Users carry out most interactions
- Secondary window
- Contains information that relies on the primary window
- Dialog box
- Modal Windows

Prototype

- Develop menu structure
- Identify visual elements
- Identify screen based controls
- Identify device icons
- Paper Prototype
- Digital Prototype
- Should be 3 iterations minimum

The above example was used as a guide to complete the Employment System for their final project. In addition to this the following bonus assignment was give as well.

Bonus Assignment

- ☐ **Method**
  - ◘ Prototype Your Alarm Clock
    - ■ Think about the alarm clock you use to wake up every day. It may be a digital clock radio, it may be an analog clock, it may even be a cell phone or a desktop application.
    - ■ **Make a low-fidelity prototype of your alarm clock. Include** enough of the interface so that your low-fidelity prototype can display and change

the current time, display and change the alarm time, and turn the alarm on and off.

- Run Your Prototype
  - Simulate your prototype with a sample user. Act as the Computer, while your volunteer acts as the user. Use these tasks:
    - Is the alarm set to wake me up at 9 am?
    - Suppose not. Set the alarm to wake me up at 9 am.
    - Set the current time one hour backward for a daylight savings time

Not many students did participate in the above bonus practice since it was optional.

The outcome of the final project was as follows:

22 out of 26 students (84.6%) got at least 80 out of 100 points
Goal of 80% of students getting More than 80% WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome:

6.3 Practice user-centered design development and deployment

Course Number/Name:

32 IT 220 Fundamentals of Web Development

6.3 Practice user-centered design development and deployment

A formal design process that focuses on usability and user modeled design is presented in class.

Students demonstrate mastery of this program outcome by completing the final project assignment for this course.

20 out of 22 students (91%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Fundamentals of Web Development
Prof. Tom Wulf
Final Project Guidelines

Submitting your work:

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IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome: (Number and Description)

6.4 Evaluate the usability of an application.

Course Number/Name:

IT493 Senior Design Technical Practicum I

This class is a continuation of the senior design class and is taken along side the senior design project management class. It is the first of two classes where students develop a project that meets the requirements identified in the previous class.

This outcome is assessed through the completion of a prototype, and discussion in weekly meeting with a faculty advisor. Data are presented for one of the sections.

Prototype:
Prototype is assessed based on sophistication, depth and professionalism

6 out of 10 students (60%) achieved more than 70%

Goal of 70% achieve 70% or more was not met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2010

Program Outcome: (Number and Description)

7.1 Understand, develop, and follow a project plan

Course Number/Name:

IT490 Senior Design

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This is the first class in a sequence of three courses. In this class, a plan is provided to the students to guide them in identify and selecting a problem for their senior project. Students are required to follow a timeline that maps the inception phase of the project life cycle. This outcome is assessed by two progress reports and completion of a final presentation and final report.

Progress Report I:

In this report, document the work you have completed so far. It should include at minimum the following:
- Your effort to identify potential projects and/or select a project
- Your meeting with an IT faculty to discuss your effort.

Please note that the report must include the date and time of your meeting with the IT faculty as well as the faculty's signature.
Use this form for the report

37 out of 37 (100%) students submitted the progress report on time

Goal of 90% submit the report on time was met

Progress Report II:

In this report, document the work you have completed so far. It should include at minimum the following:
- Your effort to analyze the problem and document a complete problem statement
- Your meeting with an IT faculty to discuss your effort.

Please note that the report must include the date and time of your meeting with the IT faculty as well as the faculty's signature.
Use this form for the report

37 out of 37 students (100%) submitted the report on time

Goal of 90% submit the report on time was met

Final Presentation:
Oral presentations will start November 15 and will continue for 4 weeks.
Presentations schedule will be posted by November 8.
The presentation will be evaluated according to the attached evaluation form.

37 out of 37 students (100%) made their presentation on their scheduled time

Goal of 90% make final presentation on time was met

Final Report:
Submit a hard copy of your final proposal signed by an IT faculty. The final proposal should implement all the feedback from the draft proposal and should abide by all requirements of the proposal report as indicated in the Course Documents section.

37 out of 37 students (100%) submitted the report on time

Goal of 90% submit the final report on time was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome: (Number and Description)

7.1 Understand, develop, and follow a project plan

Course Number/Name:

IT496 Senior Design Project Management I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This is the second class in a sequence of three courses. In this class, a plan is provided to the students to guide them in identify and selecting a problem for their senior project. Students are required to follow a timeline that maps the inception phase of the project life cycle. In addition, students are required to create a weekly project plan for the during of the quarter and include that in their final report.

This outcome is assessed through the completion of project plan; submitting the deliverables assignment on time; submitting the testing scenario on time and submitting the final report on time.

Completing of Project Plan:

You are required to develop a project execution plan that includes weekly actions. Your project duration is 10 weeks.

Last quarter, you defined the features of your system, it is time to create a project plan to enable you to track and manage the development of the prototype.

Use Microsoft project or a similar tool to create the project plan. Submit at a minimum a Grantt chart for your plan.

37 out of 37 (100%) students submitted the project plan on time

Goal of 90% submit the plan on time was met

Completion of Project Deliverables

Define the different elements of your design protocols and create your deliverables. The deliverables are specific features that your completed system

will do.

Submit a document that includes:
Project description:
- Problem Statement
- Description of the Solution
Design Protocols:
- Use case diagram
- User profile
- Other design protocols relevant to your project
- Deliverables

This document needs to be signed by your Tech Practicum advisor.

37 out of 37 (100%) students submitted the project deliverables on time

Goal of 90% submit the project deliverables on time was met

Completion of Testing Scenarios
ow that you have the list of tasks needed to complete your project, you need to write down the testing scenarios. These are the different cases of using or demonstrating the system to ensure that it did in fact meet the requirements.

Submit a one PDF document with the name [LastName]_TestingScenarios.pdf

35 out of 37 (95%) students submitted the testing scenarios on time

Goal of 90% submit the testing scenarios on time was met

Completion of the draft report

35 out of 37 (95%) students submitted the draft report on time

Goal of 90% submit the draft report on time was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

7.1 Understand, develop, and follow a project plan

Course Number/Name:

IT497 Senior Design Project Management II

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed through requiring the students to develop a project plan (weekly) and follow through the completion of the requirements on time. Students are required to submit an abstract and a draft report.

Project Plan:

Due - April 4th

Plan your spring quarter by dividing the remaining work into weekly tasks. Submit a Gantt chart for the eleven weeks of the spring quarter and the tasks you plan on completing.

Submit a hard copy with a cover sheet signed by your advisor

35 out of 37 (95%) students submitted the project plan on time

Goal of 90% submit the plan on time was met

31out of 37 (84%) students achieved more than 80%

Goal of 70% achieve more than 80% was met

Abstract:

Due April 18th

Submit an abstract for your project following the template for writing an abstract in the templates section.

Submit an electronic copy in word format.

34 out of 37 (92%) students submitted the abstract on time

Goal of 90% submit the abstract on time was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: June 2007

Program Outcome: (Number and Description)

7.2 Develop Gantt and PERT charts and critical path analysis

Course Number/Name:

IT490 Senior Design

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed through the final report. The final report included a section on the project timeline in which a Gantt chart was required.

Submit a hard copy of your final proposal signed by an IT faculty. The final proposal should implement all the feedback from the draft proposal and should abide by all requirements of the proposal report as indicated in the Course Documents section.

32 out of 37 students (86%) achieved more than C

Goal of 70% achieve C or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome: (Number and Description)

7.2 Develop Gantt and PERT charts and critical path analysis

Course Number/Name:

IT496 Senior Design Project Management I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed through an assignment that requires the students to develop a project plan (weekly). The project plan has to be updated and included in the final report for this class as well as the following class (IT497)

Project Plan:

You are required to develop a project execution plan that includes weekly actions. Your project duration is 10 weeks.

Last quarter, you defined the features of your system, it is time to create a project plan to enable you to track and manage the development of the prototype.

Use Microsoft project or a similar tool to create the project plan. Submit at a minimum a Gantt chart for your plan.

37 out of 37 (100%) students submitted the project plan on time

Goal of 90% submit the plan on time was met

36 out of 37 (97%) students achieved more than 80%

Goal of 70% achieve more than 80% was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

7.2 Develop Gantt and PERT charts and critical path analysis

Course Number/Name:

IT497 Senior Design Project Management II

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed through an assignment that requires the students to develop a project plan (weekly).

Project Plan:

Due - April 4th

Plan your spring quarter by dividing the remaining work into weekly tasks. Submit a Gantt chart for the eleven weeks of the spring quarter and the tasks you plan on completing.

Submit a hard copy with a cover sheet signed by your advisor

35 out of 37 (95%) students submitted the project plan on time

Goal of 90% submit the plan on time was met

31out of 37 (84%) students achieved more than 80%

Goal of 70% achieve more than 80% was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 09-Winter11

Program Outcome: (Number and Description)

8.1 Make effective oral presentations.

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the communication section, employers are asked to evaluate each student on a scale of 1-5 for "Makes effective presentations."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

196 out of 198 students (99.0%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

160 out of 198 students (80.8%) got at least a 4 on this question.
Goal of 75% of students getting at least a 4 WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome:

8.1 Make effective oral presentations

Course Number/Name:

32 IT 220 Fundamentals of Web Development

Students are required to complete a written web site critique for Lab 2. They present their critique orally during the class session.

13 out of 22 students (60%) achieved more than 80 %.

Goal of 70% achieved 80% or more was not met

Lab 2 – Web Design
(Due dates are posted in Bb. Note that there is no leeway for this particular assignment. If you have not completed it in time for the in-class discussion, you will get no credit.)

I am hoping that after our discussion of the Web design process, you have gotten into the habit of examining each Website that you encounter in terms of the functional design principles that I presented in class. For this assignment, I want you to prepare an evaluative critique for a Web site design that you have found on the Web. Do not submit a critique of a site that I have discussed in class particularly, do not submit a critique for the UC Website, since we examined that in detail.

You will submit your critique as an MS Word document. Include a working URL that links to the Web site that you are critiquing. (See directions below.)

Things to consider in your critique: (Do not copy the text of these questions into your submission file, include these items as appropriate in your critique. Your critique should be a coherent, smooth flowing report that is readable by a technical manager for a Web development team. You are permitted and encouraged to use any technical terms from the course.)

- What is the primary purpose of the site or what are the communication goals of the site?

- What different user groups/needs emerge from the site's purpose and are evident in the organization of the design? Is there some other organizational scheme? (This and the preceding point should be the main focus of your critique.)
- What works well for the design? What does not work? What would you do differently?
- How does the navigation work? Be sure to comment on efficiency (click-depth) clarity of organization, and try to describe the topology of the navigation scheme (linear linked, completely linked, shallow tree, deep tree). Comment on any specific navigational elements: breadcrumb trail, navbar, jumplist, site map, etc.)
- Is the site XHTML compliant? What about ADA compliance?
- Is there any advanced features? (Flash, video, audio, etc.) Do they support the site purpose or are they fluff? Is the use of these features done correctly in a manner that allows the user to decline or avoid them? Again, ADA compliance.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome: (Number and Description)

8.1 Make Effective Oral Presentations

Course Number/Name:

32IT299 Implications of Information Technology

This outcome is assessed by observing the group presentation of students during the end of the quarter. Each group is made up of three members when possible. One member introduces the case or the issues to be discussed (samples are listed below); one is in favor and argues from that point of view relating to topics learned in class and from the text, while the other person takes an opposite point of view. Most of the issues considered for oral presentation are controversial topics.

Each group presentation is evaluated based on the following criteria:

1. Presentation quality, text, graphics, eye contact, and introduction of team-member to the class.
2. Analyze The Situation
3. Use Analogies and Similar Cases
4. Mention various possible risks or consequences
5. How new technology changes the situation
6. What advantages or problems result from using it compare to the old way of doing things
7. Present the group’s proposal and or conclusion

Samples of Oral Presentation Topics:

Instructions:
The presentations should analyze the situation, use analogies and similar cases where possible, mention various possible risks or consequences, etc. Include some discussion of how the new technology changes the situation. What advantages or problems result from using it, compared to the old way of doing things? Present the group's proposals and/or conclusions, supported by arguments.

- 7 minutes initial argument from each team and then 5 minutes follow up and finally 14 minutes from the audience.
- Audience will rate the group presentation based on team work, depth of arguments, supporting evidence

Round 1:
Groups 1, 2, 3
Databases and terrorism
After the terrorist attacks on the U.S. in 2001, government agencies wanted to build a database of all people trained as scuba divers, drivers of large trucks, and others with similar kinds of skills that could be used in future terrorist attacks. The FBI asked a large scuba diving business for its customer database.
First Group: The board of directors of the scuba business, deciding how to respond to the FBI request
Second Group: The FBI arguing in Congress for a law authorizing it to build a database containing all scuba divers and heavy truck drivers
Third Group: The American Civil Liberties Union arguing in Congress against such a law

Groups, 4,5,6
Encryption Control Act
Suppose Congress is debating the following proposed law:
(1) All encryption products manufactured or imported for sale or use in the United States must include features that permit immediate decryption of the encrypted data upon the receipt of a valid court order.
(2) Whoever knowingly manufactures, imports, or sells an encryption product that does not meet the requirements of this Act shall be subject to a term of imprisonment of not more than five years, a fine of not more than two hundred fifty thousand dollars, or both.
(3) It shall NOT be unlawful to use any encryption product purchased or in use prior to January 31 of the year following passage of this Act.
The groups are presenting arguments to Congress and the news media.
First Group: Representatives of the FBI, CIA, and Homeland Security Dept. (in favor)
Second Group: Representatives of the American Civil Liberties Union (ACLU) (against)
Third Group: Representatives of police departments (in favor)
An excellent moot court program at the Computers, Freedom, and Privacy Conference, 1996, in the form of a federal appeals court hearing, debated the constitutionality of a (fictitious) law, the Cryptography Control Act, that required registration of encryption keys. Numerous relevant and excellent documents from the conference, including legal arguments and the mock court decision, are available at CFP'96 encryption moot court.
http://www.swiss.ai.mit.edu/projects/mac/cfp96/plenary-court.html

Groups 7, 8
The Therac-25 case
Read the case study 4.2 pages 149-154
Following exercise 4.34:
The First Group will represent the hospital
The Second Group will represent the company that manufactured the machine and the programmer

Round 2:
Groups 1, 2, 3

INTERNET ACCESS IN LIBRARIES

The county library board is meeting to adopt policies for use of Internet/WWW terminals in the public libraries following the Supreme Court's ruling (on the Children's Internet Protection Act) that a requirement for filters on all library terminals is unconstitutional. The policies should address the following issues and others that the public or the board members consider relevant:

* Adult use of library computers to view pornography (Complaints have been received from other people who see the images on the screens and from people who want to use the terminals for other purposes.)
* Children using library computers to view and print pornographic images
* Access to Web sites containing extremist political material
* Access to the Internet in general by children.

Representatives from three groups will present their suggested policies and give arguments for them. The groups are

First Group: an alliance between a conservative organization that opposes pornography as immoral and a radical feminist group that opposes pornography as sexist

Second Group: the American Library Association and the American Civil Liberties Union. (References: Library Bill of Rights (http://www.ala.org/work/freedom/lbr.html) adopted by the American Library Association and the ALA resolution (http://www.ala.org/alaorg/oif/filt_res.html) on the Use of Filtering Software.)

Third Group: Parents Concerned about Children

Resources:

Two excellent newspapers articles explain the problems and issues and describe the wide range of actions, including no action, taken by different libraries. (I have given one or both as reading assignments.) They are now somewhat old and you may be able to find others, but for a start, they are: Roger M. Showley, "Libraries caught in tangled Web: Are they to blame if kids view sexy stuff on their computers," San Diego Union-Tribune, Apr. 28, 1997, p. A1; and Lisa Brownlee, "On-line porn sorely tests librarians' free-speech principles," Wall Street Journal, Apr. 23, 1997, p. B1.

Groups, 4,5,6

The DMCA (Digital Millennium Copyrights Act)

Suppose Congress were considering repealing or amending the anti-circumvention provisions of the DMCA. The groups are presenting testimony in Congress.

First Group: A civil liberties organization arguing for repeal of all restrictions on publishing or distributing software that circumvents copy protection.

Second Group: An online activist organization arguing for repeal of all restrictions on devices that circumvent copy protection but have some legal uses.

Third Group: The music and movie industries arguing against any change.

Groups 7, 8

Hacking to improve security

A Dutch hacker, who said he worked in computer security, sent e-mail to Microsoft warning that some of its Web sites were vulnerable to break-ins. Microsoft did not reply until after he broke in to one of the Web sites about a week later and left a taunting message as proof. Was his action

ethical? Did he do Microsoft and the public a favor? What might be some reasons why Microsoft did not respond to his e-mail?
First Group: Argue in support of the hacker.
Second Group: Argue against the hacker.

Round 3:
Groups 1, 2, 3
Policies for e-mail, file access, and Web use
First Group: Develop a policy about monitoring e-mail and supervisors' access to employee files and e-mail for a software company with about 100 employees working on an innovative new product.
Second Group: Develop a policy for Web use by employees at a large bank. Indicate what monitoring, if any, will be done. Give reasons for you choices.
Third Group: Develop a policy for your university about access to student accounts and e-mail by professors and university administrators. If your university already has such a policy, include a review of it and tell what parts you think are good and what should be changed.

Groups, 4,5,6
When information appeared on computer screens only as text, deaf people could read it, and programmers developed speech-synthesis programs to read the screens to blind people. The multimedia, point-and-click interfaces of the Web pose problems for disabled people. Should all business and government Web sites be required to provide full access for disabled people? The National Federation of the Blind sued America Online in 1999 because AOL's software was not compatible with screen-access software used by blind people.
First Group: represent AOL in the suite case
Second Group: Represent the National Federation of the Blind
Third Group: Represent the American with Disabilities Act. Read the law with respect to Web sites and prepare arguments and recommendations with respect to proper design for Web sites.

Groups 7, 8
A Dutch hacker who copied patient files from a University of Washington medical center (and was not caught) said in an online interview that he did to publicize the system's vulnerability, not to use the information. He disclosed portions of the files to a journalist after the medical center said that no patient files had been copied. Analyze the ethics of his actions using the methodology of section 10.3.1. Was this honorable whistle blowing or Irresponsible hacking?
First Group: Argue that it is an honorable whistle blowing.
Second Group: Argue that it is an irresponsible hacking.

17 out of 20 students (85%) achieved more than 80 %.

Goal of 80% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2010

Program Outcome: (Number and Description)

8.1 Make effective oral presentations.

Course Number/Name:

IT490 Senior Design

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by completion of a final presentation.

Final Presentation:

Oral presentations will start November 15 and will continue for 4 weeks.
Presentations schedule will be posted by November 8.
The presentation will be evaluated according to the attached evaluation form.

34 out of 37 students (92%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2011

Program Outcome: (Number and Description)

8.1 Make effective oral presentations.

Course Number/Name:

IT496 Senior Design Project Management I

This outcome is assessed by completion of a final presentation.

Final Presentation:
Each project has to present the prototype in front of the class and the faculty. Each project is given 10 minutes for the presentation and it is evaluated according to an evaluation form that is made available to all students.

24 out of 37 students (65%) achieved more than 70 %.

Goal of 70% achieved 70% or more was not met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 09-Winter11

Program Outcome:

8.2 Communicate effectively in written form

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the communication section, employers are asked to evaluate each student on a scale of 1-5 for "Writes clearly and concisely."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

277 out of 280 students (98.9%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

237 out of 280 students (84.6%) got at least a 3 on this question.
Goal of 75% of students getting at least a 4 WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2010

Program Outcome: (Number and Description)

8.2 Communicate effectively in written form.

Course Number/Name:

IT490 Senior Design

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by completion of a final report.

Final Report:

Submit a hard copy of your final proposal signed by an IT faculty. The final proposal should implement all the feedback from the draft proposal and should abide by all requirements of the proposal report as indicated in the Course Documents section.

32 out of 37 students (86%) achieved more than C

Goal of 70% achieve C or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome:

8.2 Communicate effectively in written form

Course Number/Name:

32 IT 220 Fundamentals of Web Development

Each assignment in the course (as distinct from the lab work or the final project) requires the student to post a reflective piece to the discussion board forum within the Bb LMS. This practice is designed to give students experience in writing about their work.

In Lab 2, students are required to complete a written web site critique which they post to the discussion board forum and subsequently present orally during a class session.

13 out of 22 students (60%) achieved more than 80 %.

Goal of 70% achieved 80% or more was not met

Fundamentals of Web Development
Prof. Tom Wulf
Lab 2 – Web Design
(Due dates are posted in Bb. Note that there is no leeway for this particular assignment. If you have not completed it in time for the in-class discussion, you will get no credit.)

I am hoping that after our discussion of the Web design process, you have gotten into the habit of examining each Website that you encounter in terms of the functional design principles that I presented in class. For this assignment, I want you to prepare an evaluative critique for a Web site design that you have found on the Web. Do not submit a critique of a site that I have discussed in class particularly, do not submit a critique for the UC Website, since we examined that in detail.

You will submit your critique as an MS Word document. Include a working URL that links to the Web site that you are critiquing. (See directions below.)

Things to consider in your critique: (Do not copy the text of these questions into your submission file, include these items as appropriate in your critique. Your critique should be a

coherent, smooth flowing report that is readable by a technical manager for a Web development team. You are permitted and encouraged to use any technical terms from the course.)

- What is the primary purpose of the site or what are the communication goals of the site?
- What different user groups/needs emerge from the site's purpose and are evident in the organization of the design? Is there some other organizational scheme? (This and the preceding point should be the main focus of your critique.)
- What works well for the design? What does not work? What would you do differently?
- How does the navigation work? Be sure to comment on efficiency (click-depth) clarity of organization, and try to describe the topology of the navigation scheme (linear linked, completely linked, shallow tree, deep tree). Comment on any specific navigational elements: breadcrumb trail, navbar, jumplist, site map, etc.)
- Is the site XHTML compliant? What about ADA compliance?
- Is there any advanced features? (Flash, video, audio, etc.) Do they support the site purpose or are they fluff? Is the use of these features done correctly in a manner that allows the user to decline or avoid them? Again, ADA compliance.

How to submit:

4. Submit your MS Word file as a single file named LastnameFirstnameLab3.doc using the Bb Assignment Mechanism.
5. Copy and paste the text of your Word Doc into the posting board that I have provided for the lab. Be sure that your URL works correctly.
6. Reply with substantive comments to one other submission. You are free to agree or disagree with the original critique but should support your assertions with factual statements and examples rather than just making vague statements. (Note that subjective statements are ok as long as you support your statements with reasoning. For example, *"I find the nav structure of the site to be bad because…"* is better than *"I find the nav structure of the site to be bad."*

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Fall 2011

Program Outcome: (Number and Description)

8.2 Communicate effectively in written form.

Course Number/Name:

IT496 Senior Design Project Management I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed by completion of a final report.

Final Report:

Submit the final report for your senior design project following the report guidelines.
Your final report must be signed by the technical practicum advisor.

You must use the report title template.

28 out of 37 students (76%) achieved more than 70%

Goal of 70% achieve 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 09-Winter11

Program Outcome: (Number and Description)

8.3 Communicate effectively with peers, supervisors and clients.

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the communication section, employers are asked to evaluate each student on a scale of 1-5 for "Speaks with clarity and confidence."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

290 out of 299 students (97.0%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

243 out of 299 students (81.3%) got at least a 3 on this question.
Goal of 75% of students getting at least a 4 WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome: (Number and Description)

8.3 Communicate effectively with peers, supervisors and clients.

Course Number/Name:

IT493 Senior Design Technical Practicum I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This class is a continuation of the senior design class and is taken along side the senior design project management class. It is the first of two classes where students develop a project that meets the requirements identified in the previous class.

This outcome is assessed through the discussion in weekly meeting with a faculty advisor. Data are presented for one of the sections.

Attendance and Discussion during Weekly meetings:
Students are required to attend weekly meetings for each project with the advisor. During the meeting, students demonstrate their progress and engage in discussion on the development progress of the project.

8 out of 10 students (80%) achieved more than 70%

Goal of 70% achieve 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 09/10

Program Outcome: (Number and Description)

8.4 Communicate effectively - information architecture, navigation, interaction, graphically and with media

Course Number/Name:

32 IT 230: Fundamentals of Digital Media

Students complete lab assignments and exercises that require them to identify needs, identify tasks, and develop profiles of users for development of multimedia productions. These include:

Lab 9 The final Interactive multimedia production using ***Google Site***, Gmail, and Google Docs. This project will bring together all of the elements allowing learners to comprehend and see the final result of their collective work. A recipe is given to students. They are to teach college students how to prepare a nutritious dish that is delicious, healthy and economical and make it available via Google Site and advertise it via YouTube. This project will be part of the assignment section of the site for the class in such a way that the course will also be advertised indirectly. This is a group project requiring great deal of personal interaction and brain storming and decision making. Each group is encouraged to be creative and come up with original ideas. Images of ingredients must be created and owned so there will be no violation of any copyright laws. Using Google's API, students are able to benefit from the features such as "Site Map" and "Table of Content" to effectively architecture their information similar to Wiki sites making sure that users of the site are able to know where they are, where they came from and where they can go in terms of navigation.

Groups are assessed in terms of how well they work together to finish this project Since each student has a unique username and password his or her contribution is measureable. This transparency helps with group cohesion. Students had a great time working collaboratively on these projects. There was so much laughter during their work on this final assignment. It was mainly due to viewing their own image in a movie or hearing their own voice. Of course they could relate to it and were proud of their creation.

20 out of 22 students (91%) got at least 400 out of 500 points on these combination of tasks. Goal of 80% of students getting 400 points WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 2010/2011

Program Outcome: (Number and Description)

8.4 Communicate effectively-information architecture, navigation, interaction, graphically, and with media

Course Number/Name:

32 IT 430: Human Computer Interaction

To assess these outcomes, students were required to finish six exercises prior to their final projects. Each one of these exercises required an individualized written report based on the following format.

Purpose: This is usually provided for you in each exercise. Simply copy it and provide it here.

Method: In this section, describe **exactly** what you did and how you did it. Your description should be clear and complete to enable another person to repeat the study and do exactly what you did.

Result: Use graphs, figures, tables to present your results as clearly and concisely as possible in this section. These should help the reader to find out what you found.

Discussion: This section should include your feelings about the result. How do they relate to the purpose of the study? Were there any surprises? How do your findings relate to real-world problems in systems? What changes could be made to the study or what new study could be conducted to gain even more understanding of what is happenings?

Conclusion: Here you should state specifically one or two points to conclude your findings as a result of this study.

List of Exercises to assess human performance model with focus on the human element.

Exercise 1: Historical Analysis of Printer's Errors

23 out of 26 students (88.4%) achieved at least 7 point out of 10

Goal of 70% achieved 80% or more was not met

Exercise 2: Determining Memory Limitations

23 out of 26 students (88.4%) achieved at least 7 point out of 10

Goal of 70% achieved 80% or more was not met

Exercise 3: Reading Large Vs. Small Print

19 out of 26 students (73.4%) achieved at least 7 point out of 10

Goal of 70% achieved 80% or more was not met

Exercise 4: Developing a Skill

21 out of 26 students (80.7%) achieved at least 7 point out of 10

Goal of 70% achieved 80% or more was not met

Exercise 5: Web Navigation Exercise

25 out of 26 students (96.1%) achieved at least 7 point out of 10

Goal of 70% achieved 80% or more was met

Exercise 6: Determining What Makes Games Fun

22 out of 26 students (88.6%) achieved at least 7 point out of 10

Goal of 70% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 09-Winter11

Program Outcome: (Number and Description)

9.1 Participate effectively as a team member

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the teamwork section, employers are asked to evaluate each student on a scale of 1-5 for "Works effectively with others," "Understands/contributes to the organization's goals," "Demonstrates flexibility/adaptability," and "Functions well on multidisciplinary team."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

1154 out of 1159 responses (99.6%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

1053 out of 1159 students (90.9%) got at least a 3 on this question.
Goal of 85% of students getting at least a 4 WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: 10/26/07

Program Outcome: (Number and Description)

9.1. Participate Effectively as a team member

Course Number/Name:

32IT299 Implications of Information Technology

This outcome is assessed by the quality of presentation submitted and distribution of work. The issue of ethics and ethical behavior manifest itself when students are required to work as a team and share the load. They all will receive the same grade for the group. Therefore, one member's unethical conduct can impact other students' grades adversely. I encourage students to report to me privately any issues that may be causing issues. Also, I give student

Instructions:

The presentations should analyze the situation, use analogies and similar cases where possible, mention various possible risks or consequences, etc. Include some discussion of how the new technology changes the situation. What advantages or problems result from using it, compared to the old way of doing things? Present the group's proposals and/or conclusions, supported by arguments.

- 7 minutes initial argument from each team and then 5 minutes follow up and finally 14 minutes from the audience.
- Audience will rate the group presentation based on team work, depth of arguments, supporting evidence

Round 1:

Groups 1, 2, 3

Databases and terrorism

After the terrorist attacks on the U.S. in 2001, government agencies wanted to build a database of all people trained as scuba divers, drivers of large trucks, and others with similar kinds of skills that could be used in future terrorist attacks. The FBI asked a large scuba diving business for its customer database.

First Group: The board of directors of the scuba business, deciding how to respond to the FBI request

Second Group: The FBI arguing in Congress for a law authorizing it to build a database containing all scuba divers and heavy truck drivers

Third Group: The American Civil Liberties Union arguing in Congress against such a law

Groups, 4,5,6

Encryption Control Act
Suppose Congress is debating the following proposed law:
(1) All encryption products manufactured or imported for sale or use in the United States must include features that permit immediate decryption of the encrypted data upon the receipt of a valid court order.
(2) Whoever knowingly manufactures, imports, or sells an encryption product that does not meet the requirements of this Act shall be subject to a term of imprisonment of not more than five years, a fine of not more than two hundred fifty thousand dollars, or both.
(3) It shall NOT be unlawful to use any encryption product purchased or in use prior to January 31 of the year following passage of this Act.
The groups are presenting arguments to Congress and the news media.
First Group: Representatives of the FBI, CIA, and Homeland Security Dept. (in favor)
Second Group: Representatives of the American Civil Liberties Union (ACLU) (against)
Third Group: Representatives of police departments (in favor)
An excellent moot court program at the Computers, Freedom, and Privacy Conference, 1996, in the form of a federal appeals court hearing, debated the constitutionality of a (fictitious) law, the Cryptography Control Act, that required registration of encryption keys. Numerous relevant and excellent documents from the conference, including legal arguments and the mock court decision, are available at CFP'96 encryption moot court.
http://www.swiss.ai.mit.edu/projects/mac/cfp96/plenary-court.html

Groups 7, 8
The Therac-25 case
Read the case study 4.2 pages 149-154
Following exercise 4.34:
The First Group will represent the hospital
The Second Group will represent the company that manufactured the machine and the programmer

Round 2:
Groups 1, 2, 3
INTERNET ACCESS IN LIBRARIES
The county library board is meeting to adopt policies for use of Internet/WWW terminals in the public libraries following the Supreme Court's ruling (on the Children's Internet Protection Act) that a requirement for filters on all library terminals is unconstitutional. The policies should address the following issues and others that the public or the board members consider relevant:
* Adult use of library computers to view pornography (Complaints have been received from other people who see the images on the screens and from people who want to use the terminals for other purposes.)
* Children using library computers to view and print pornographic images
* Access to Web sites containing extremist political material
* Access to the Internet in general by children.

Representatives from three groups will present their suggested policies and give arguments for them. The groups are
First Group: an alliance between a conservative organization that opposes pornography as immoral and a radical feminist group that opposes pornography as sexist

Second Group: the American Library Association and the American Civil Liberties Union. (References: Library Bill of Rights (http://www.ala.org/work/freedom/lbr.html) adopted by the American Library Association and the ALA resolution (http://www.ala.org/alaorg/oif/filt_res.html) on the Use of Filtering Software.)
Third Group: Parents Concerned about Children
Resources:
Two excellent newspapers articles explain the problems and issues and describe the wide range of actions, including no action, taken by different libraries. (I have given one or both as reading assignments.) They are now somewhat old and you may be able to find others, but for a start, they are: Roger M. Showley, "Libraries caught in tangled Web: Are they to blame if kids view sexy stuff on their computers," San Diego Union-Tribune, Apr. 28, 1997, p. A1; and Lisa Brownlee, "On-line porn sorely tests librarians' free-speech principles," Wall Street Journal, Apr. 23, 1997, p. B1.

Groups, 4,5,6
The DMCA (Digital Millennium Copyrights Act)
Suppose Congress were considering repealing or amending the anti-circumvention provisions of the DMCA. The groups are presenting testimony in Congress.
First Group: A civil liberties organization arguing for repeal of all restrictions on publishing or distributing software that circumvents copy protection.
Second Group: An online activist organization arguing for repeal of all restrictions on devices that circumvent copy protection but have some legal uses.
Third Group: The music and movie industries arguing against any change.

Groups 7, 8
Hacking to improve security
A Dutch hacker, who said he worked in computer security, sent e-mail to Microsoft warning that some of its Web sites were vulnerable to break-ins. Microsoft did not reply until after he broke in to one of the Web sites about a week later and left a taunting message as proof. Was his action ethical? Did he do Microsoft and the public a favor? What might be some reasons why Microsoft did not respond to his e-mail?
First Group: Argue in support of the hacker.
Second Group: Argue against the hacker.

Round 3:
Groups 1, 2, 3
Policies for e-mail, file access, and Web use
First Group: Develop a policy about monitoring e-mail and supervisors' access to employee files and e-mail for a software company with about 100 employees working on an innovative new product.
Second Group: Develop a policy for Web use by employees at a large bank. Indicate what monitoring, if any, will be done. Give reasons for you choices.

Third Group: Develop a policy for your university about access to student accounts and e-mail by professors and university administrators. If your university already has such a policy, include a review of it and tell what parts you think are good and what should be changed.

Groups, 4,5,6

When information appeared on computer screens only as text, deaf people could read it, and programmers developed speech-synthesis programs to read the screens to blind people. The multimedia, point-and-click interfaces of the Web pose problems for disabled people. Should all business and government Web sites be required to provide full access for disabled people? The National Federation of the Blind sued America Online in 1999 because AOL's software was not compatible with screen-access software used by blind people.
First Group: represent AOL in the suite case
Second Group: Represent the National Federation of the Blind
Third Group: Represent the American with Disabilities Act. Read the law with respect to Web sites and prepare arguments and recommendations with respect to proper design for Web sites.

Groups 7, 8

A Dutch hacker who copied patient files from a University of Washington medical center (and was not caught) said in an online interview that he did to publicize the system's vulnerability, not to use the information. He disclosed portions of the files to a journalist after the medical center said that no patient files had been copied. Analyze the ethics of his actions using the methodology of section 10.3.1. Was this honorable whistle blowing or Irresponsible hacking?
First Group: Argue that it is an honorable whistle blowing.
Second Group: Argue that it is an irresponsible hacking.

17 out of 20 students (85%) achieved more than 80 %.

Goal of 80% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Engineering and Applied Science (CEAS)
University of Cincinnati

Assessment Date: May 5, 2011

Program Outcome: (Number and Description)

9.1 Participate effectively as a team member

Course Number/Name:

20-IT-455: Management in Information Technology

Students complete a major Team Assignment that requires them to make an effective oral presentation. Students are assessed in terms of how well they complete the assignment, applying specific criteria discussed in the readings and in lectures and discussions. The assignment sheet and assessment sheet for the Team Assignment are attached as representative assessment materials for 9.1.

Focus: This course is designed to instruct the student in taking a project from start to finish, including documentation, time lines, allocating resources, and follow-through with update meetings. Designing documentation, assigning necessary resources, and implementing and completing projects are covered. Students will learn the most important aspects of project management. Upon completion of this course, the student will:

- Understand the genesis of project, program, and portfolio management and their importance to enterprise success
- Describe the various approaches for selecting projects, programs, and portfolios
- Explain the main tasks involved in and outputs of initiating, planning, executing, monitoring and controlling, and closing projects
- Demonstrate knowledge of project management terms and techniques such as:
  - The triple constraint of project management
  - The project management knowledge areas
  - Tools and techniques of project management such as:
    - ⇨ Selection methods
    - ⇨ Work breakdown structures
    - ⇨ Gantt charts, network diagrams, critical path analysis
    - ⇨ Cost estimates
    - ⇨ Earned value management
    - ⇨ Motivation theory and team building

- Apply project management concepts by working on a team project as project manager or active team member

- Appreciate the importance of good project management

    - Share examples of good and bad project management
    - Prepare and present a presentation related to project management
    - Use knowledge and skills developed in this class in other settings

Guidelines For PowerPoint Presentation(s)

Section I (Preparation)

- ✓ Every presentation should have a title slide. Make sure title relates to presentation content. Y/N (4 points)

- ✓ Maintain a consistent color scheme (design template) throughout the presentation. Y/N (5 points)

- ✓ Keep the background simple, making sure the text can be seen clearly (font, size, color, spelling). Y/N (8 points)

- ✓ Avoid small lines of text (15 points)

    - Text on slides should be no smaller than 24 points; text for overheads should be no smaller than 18 points. Y/N

    - Avoid long lines of text. Avoid too many lines of text. No line should consist of more than seven words; no slide should consist of more than seven lines. Y/N

- ✓ For bulleted text, avoid using a single bullet or more than five bullets per slide. Don't use more than two levels of bullets. Y/N (5 points)

- ✓ Use clip art that relates to the content and doesn't distract from the message. Avoid the temptation to "jazz up" a slide show with too much clip art – the key here is balance. Y/N (5 points)

- ✓ Keep graphs simple. The most effective graphs are pie charts with three or four slices and column charts with three or four columns; one graph minimum. Y/N (5 points)

- ✓ Provide some form of handout so your audience can keep track of the presentation. Y/N (10 points)

- ✓ Title Slide Present Y/N (4 points)

Section II (Effectiveness of Communication)

- ✓ Did the speaker talk slowly and conversationally? Y/N (5 points)
- ✓ Was the speaker's voice loud enough, interesting to listen to, and free from substandard English? Y/N (10 points)
- ✓ Did the introduction catch attention, get the audience involved, and make you want to hear the presentation? Y/N (10 points)
- ✓ Was the presentation built around a clear, key idea? Y/N (5 points)
- ✓ Did the presentation have two main points, with supporting statements (minimum)? Y/N (10 points)
- ✓ Did the speaker look at the audience and maintain their interest? Y/N (5 points)
- ✓ Did the speaker maintain interest? Y/N (5 points)
- ✓ Did the speaker move smoothly from one point to another? Demonstrate an effective use of transitions? Y/N (4 points)
- ✓ Was the presentation free from speech errors (poor grammar, mispronunciation, spelling, etc.)? Y/N (10 points)

Section III (The Non-Verbal Message)

- ✓ Did the speaker control nervous mannerisms, stand confidently, and maintain eye contact with the audience? Y/N (6 points)
- ✓ Was the speaker enthusiastic, poised, and communicative? Y/N (8 points)
- ✓ Did the speaker(s) fulfill the purpose of the assignment? Y/N (15 points)
- ✓ Was the speaker free from distracting mannerisms? Y/N (10 points)
- ✓ Was the goal to tell the audience something they did not know fulfilled? Y/N (15 points)
- ✓ Were the visual materials well planned so that the entire audience could see clearly? Y/N (5 points)

Section IV (Summary)

- ✓ Did the final slide provide an effective recommendation or summary? Y/N (15 points)
- ✓ Was the conclusion effective? Did the speaker bring the presentation to a smooth ending with a summary and a focus? Y/N (7 points)

- ✓ Did the speaker begin with a strong opening statement that caught attention and set up the subject for the audience? Y/N (7 points)

Section V (Requirements)

- ✓ The presentation must address each course objective -- as a whole. Application of course objectives must be clearly linked, demonstrated and discussed to information technology. Y/N (20 points)
- ✓ The presentation will be a minimum of five minutes and a maximum of 15 minutes. Times will be recorded. Speaker stayed within time frames? Y/N (15 points)
- ✓ Minimum of 15 slides, excluding title page, overview, and summary. Y/N (15 points)
- ✓ A minimum of 8 clipart images will be used. Y/N (10 points)
- ✓ Patterns, Shading, and Texture may be used at student's discretion.
- ✓ Students will print a copy of their slides in "Notes Pages View" for instructor review, prior to the presentation. (15 points)
- ✓ Students will apply a design template of their choice. Y/N (7 points)
- ✓ At least one graph will be used in the presentation: either a pie chart or bar graph only. No gridlines please. Y/N (5 points)
- ✓ Insert at least one table; the format of the table is up to the individual. Y/N (10 points)
- ✓ Transitions and builds are required for 75 percent of the slides. Use any style you like, however, they must be used. Y/N (10 points).

25 out of 25 students (100%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 09-Winter11

Program Outcome: (Number and Description)

9.2 Be able to work effectively with end users

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the communication section, employers are asked to evaluate each student on a scale of 1-5 for "Exhibits good listening and questioning skills."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

289 out of 299 students (96.7%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

256 out of 299 students (85.6%) got at least a 3 on this question.
Goal of 75% of students getting at least a 4 WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome: (Number and Description)

9.2 Be able to work effectively with end users.

Course Number/Name:

IT493 Senior Design Technical Practicum I

This class is a continuation of the senior design class and is taken along side the senior design project management class. It is the first of two classes where students develop a project that meets the requirements identified in the previous class.

This outcome is assessed through the completion of a prototype, discussion in weekly meeting with a faculty advisor as a client and executing the weekly timeline (or project plan). Data are presented for one of the sections.

Prototype:
Prototype is assessed based on sophistication, depth and professionalism

6 out of 10 students (60%) achieved more than 70%

Goal of 70% achieve 70% or more was not met

Executing the weekly timeline
Students are required to develop a weekly timeline and to follow through the plan. During the weekly meeting with the faculty advisor, the plan is reviewed and updated.

10 out of 10 students (100%) achieved more than 70%

Goal of 70% achieve 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Engineering and Applied Science (CEAS)
University of Cincinnati

Assessment Date: May 5, 2011

Program Outcome: (Number and Description)

9.3 Have the ability to be a change agent within an organization

Course Number/Name:

20-IT-455: Management in Information Technology

Students complete a written assignment in which they write and discuss Mission Statements for specific organizations. This helps them understand what it takes to have the ability to be a change agent within an organization. This assignment grows out of one of the central focuses of the course: Organizational Culture. Students are assessed in terms of how well they complete the assignment, applying specific criteria discussed in the class readings, lectures and discussions. The assignment sheet for the Mission Statement is attached as representative assessment materials for 9.3.

The Mission Statement

The "Mission Statement" is an attempt to distill the operating philosophy of a corporation into a succinct written form. It should result from a clear perception of that philosophy. It is an important management function to articulate this statement and to focus on what it takes to make the organization meet it.

Requirements: Your assignment has three components: first, look at two industries or services related to information technology in the Cincinnati area. One of them should be the company for which you have co-oped or a company for which you work as an information technology employee. The other should be a second company of your choice.

Second, write a brief profile of each company. Include a description of the primary product or service of each, the target clientele and where these clientele are located for each company, and how many employees each company has.

Third, and most importantly, if you were asked to write their mission statement, how would you start? How would you identify the *grievers*? Write a mission statement for each organization based on your conclusions.

Be prepared to discuss your statement, including a justification for what you have written based on each profile you have prepared.

Evaluation:

Essays will be evaluated for quality of content. Each should have a clear focus and address each of the criteria stated above. In addition, each should be organized in a clear, professional pattern that is direct and readable. Each should be free of grammar and spelling errors.

Essays will be evaluated for quality of form. Each should be completed using a word processor, with no hand-written corrections or additions.

25 out of 25 students (100%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 09-Winter11

Program Outcome: (Number and Description)

9.3 Have the ability to be a change agent within an organization

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the leadership section, employers are asked to evaluate each student on a scale of 1-5 for "Gives direction, guidance and training," "Motivates others to succeed," and "Manages conflict effectively."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

551 out of 563 students (97.9%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

444 out of 563 students (78.9%) got at least a 3 on this question.
Goal of 70% of students getting at least a 4 WASmet.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome: (Number and Description)

9.4 Comprehend and apply project management principles

Course Number/Name:

IT496 Senior Design Project Management I

PROVIDE THE ASSESSMENT EVALUATION METHOD (COPY OF QUESTION/ASSIGNMENT) AND DATA ON % OF STUDENTS WHO SUCCESSFULLY MET THE OUTCOME (80% OR MORE?).

This outcome is assessed through two assignments. The first requires the students to develop a project plan (weekly) and the second requires the students to update the plan regularly and include it in the final report.

Project Plan:

You are required to develop a project execution plan that includes weekly actions. Your project duration is 10 weeks.

Last quarter, you defined the features of your system, it is time to create a project plan to enable you to track and manage the development of the prototype.

Use Microsoft project or a similar tool to create the project plan. Submit at a minimum a Gantt chart for your plan.

37 out of 37 (100%) students submitted the project plan on time

Goal of 90% submit the plan on time was met

36 out of 37 (97%) students achieved more than 80%

Goal of 70% achieve more than 80% was met

Final Report:

Submit the final report for your senior design project following the report guidelines.
Your final report must be signed by the technical practicum advisor.

You must use the report title template.

28 out of 37 students (76%) achieved more than 70%

Goal of 70% achieve 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome: (Number and Description)

9.4 Comprehend and apply project management principles

Course Number/Name:

IT497 Senior Design Project Management II

This outcome is assessed through two assignments. The first requires the students to develop a project plan (weekly) and the second requires the students to update the plan regularly and include it in the final report.

Project Plan:

Due - April 4th

Plan your spring quarter by dividing the remaining work into weekly tasks. Submit a Gantt chart for the eleven weeks of the spring quarter and the tasks you plan on completing.

Submit a hard copy with a cover sheet signed by your advisor

35 out of 37 (95%) students submitted the project plan on time

Goal of 90% submit the plan on time was met

31out of 37 (84%) students achieved more than 80%

Goal of 70% achieve more than 80% was met

Final Report:

Due June 6

Submit the final report following the guidance you received from the evaluation of the draft report and following the guidelines of the final report submission included in the Templates section.

NOT YET REPORTED

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 05-Winter07

Program Outcome: (Number and Description)

10.1 Practice ethical and professional behaviors

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the work habits section, employers are asked to evaluate each student on a scale of 1-5 for "Professional attitude toward work assigned," "Quality of work produced," "Volume of work produced," "Attendance," and "Punctuality."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

1464 out of 1489 responses (98.3%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

1354 out of 1489 responses (90.9%) got at least a 3 on this question.
Goal of 85% of students getting at least a 4 WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: 10/26/07

Program Outcome: (Number and Description)

10.1 Practice Ethical and Professional Behavior

Course Number/Name:

32IT299 Implications of Information Technology

This outcome is assessed by the Weekly student's participation and presentation, Book Report and Term paper and assignments.

Implications of Information Technology
Weekly Presentations Assignment

Instructions:
The presentations should analyze the situation, use analogies and similar cases where possible, mention various possible risks or consequences, etc. Include some discussion of how the new technology changes the situation. What advantages or problems result from using it, compared to the old way of doing things? Present the group's proposals and/or conclusions, supported by arguments.

- 7 minutes initial argument from each team and then 5 minutes follow up and finally 14 minutes from the audience.
- Audience will rate the group presentation based on team work, depth of arguments, supporting evidence

Round 1:
Groups 1, 2, 3
Databases and terrorism
After the terrorist attacks on the U.S. in 2001, government agencies wanted to build a database of all people trained as scuba divers, drivers of large trucks, and others with similar kinds of skills that could be used in future terrorist attacks. The FBI asked a large scuba diving business for its customer database.
First Group: The board of directors of the scuba business, deciding how to respond to the FBI request
Second Group: The FBI arguing in Congress for a law authorizing it to build a database containing all scuba divers and heavy truck drivers
Third Group: The American Civil Liberties Union arguing in Congress against such a law

Groups, 4,5,6

Encryption Control Act

Suppose Congress is debating the following proposed law:

(1) All encryption products manufactured or imported for sale or use in the United States must include features that permit immediate decryption of the encrypted data upon the receipt of a valid court order.

(2) Whoever knowingly manufactures, imports, or sells an encryption product that does not meet the requirements of this Act shall be subject to a term of imprisonment of not more than five years, a fine of not more than two hundred fifty thousand dollars, or both.

(3) It shall NOT be unlawful to use any encryption product purchased or in use prior to January 31 of the year following passage of this Act.

The groups are presenting arguments to Congress and the news media.

First Group: Representatives of the FBI, CIA, and Homeland Security Dept. (in favor)

Second Group: Representatives of the American Civil Liberties Union (ACLU) (against)

Third Group: Representatives of police departments (in favor)

An excellent moot court program at the Computers, Freedom, and Privacy Conference, 1996, in the form of a federal appeals court hearing, debated the constitutionality of a (fictitious) law, the Cryptography Control Act, that required registration of encryption keys. Numerous relevant and excellent documents from the conference, including legal arguments and the mock court decision, are available at CFP'96 encryption moot court.

http://www.swiss.ai.mit.edu/projects/mac/cfp96/plenary-court.html

Groups 7, 8

The Therac-25 case

Read the case study 4.2 pages 149-154

Following exercise 4.34:

The First Group will represent the hospital

The Second Group will represent the company that manufactured the machine and the programmer

Round 2:

Groups 1, 2, 3

INTERNET ACCESS IN LIBRARIES

The county library board is meeting to adopt policies for use of Internet/WWW terminals in the public libraries following the Supreme Court's ruling (on the Children's Internet Protection Act) that a requirement for filters on all library terminals is unconstitutional. The policies should address the following issues and others that the public or the board members consider relevant:

* Adult use of library computers to view pornography (Complaints have been received from other people who see the images on the screens and from people who want to use the terminals for other purposes.)
* Children using library computers to view and print pornographic images
* Access to Web sites containing extremist political material
* Access to the Internet in general by children.

Representatives from three groups will present their suggested policies and give arguments for them. The groups are

First Group: an alliance between a conservative organization that opposes pornography as immoral and a radical feminist group that opposes pornography as sexist
Second Group: the American Library Association and the American Civil Liberties Union. (References: Library Bill of Rights (http://www.ala.org/work/freedom/lbr.html) adopted by the American Library Association and the ALA resolution (http://www.ala.org/alaorg/oif/filt_res.html) on the Use of Filtering Software.)
Third Group: Parents Concerned about Children
Resources:
Two excellent newspapers articles explain the problems and issues and describe the wide range of actions, including no action, taken by different libraries. (I have given one or both as reading assignments.) They are now somewhat old and you may be able to find others, but for a start, they are: Roger M. Showley, "Libraries caught in tangled Web: Are they to blame if kids view sexy stuff on their computers," San Diego Union-Tribune, Apr. 28, 1997, p. A1; and Lisa Brownlee, "On-line porn sorely tests librarians' free-speech principles," Wall Street Journal, Apr. 23, 1997, p. B1.

Groups, 4,5,6
The DMCA (Digital Millennium Copyrights Act)
Suppose Congress were considering repealing or amending the anti-circumvention provisions of the DMCA. The groups are presenting testimony in Congress.
First Group: A civil liberties organization arguing for repeal of all restrictions on publishing or distributing software that circumvents copy protection.
Second Group: An online activist organization arguing for repeal of all restrictions on devices that circumvent copy protection but have some legal uses.
Third Group: The music and movie industries arguing against any change.

Groups 7, 8
Hacking to improve security
A Dutch hacker, who said he worked in computer security, sent e-mail to Microsoft warning that some of its Web sites were vulnerable to break-ins. Microsoft did not reply until after he broke in to one of the Web sites about a week later and left a taunting message as proof. Was his action ethical? Did he do Microsoft and the public a favor? What might be some reasons why Microsoft did not respond to his e-mail?
First Group: Argue in support of the hacker.
Second Group: Argue against the hacker.

Round 3:
Groups 1, 2, 3
Policies for e-mail, file access, and Web use
First Group: Develop a policy about monitoring e-mail and supervisors' access to employee files and e-mail for a software company with about 100 employees working on an innovative new product.

Second Group: Develop a policy for Web use by employees at a large bank. Indicate what monitoring, if any, will be done. Give reasons for you choices.
Third Group: Develop a policy for your university about access to student accounts and e-mail by professors and university administrators. If your university already has such a policy, include a review of it and tell what parts you think are good and what should be changed.

Groups, 4,5,6

When information appeared on computer screens only as text, deaf people could read it, and programmers developed speech-synthesis programs to read the screens to blind people. The multimedia, point-and-click interfaces of the Web pose problems for disabled people. Should all business and government Web sites be required to provide full access for disabled people? The National Federation of the Blind sued America Online in 1999 because AOL's software was not compatible with screen-access software used by blind people.
First Group: represent AOL in the suite case
Second Group: Represent the National Federation of the Blind
Third Group: Represent the American with Disabilities Act. Read the law with respect to Web sites and prepare arguments and recommendations with respect to proper design for Web sites.

Groups 7, 8

A Dutch hacker who copied patient files from a University of Washington medical center (and was not caught) said in an online interview that he did to publicize the system's vulnerability, not to use the information. He disclosed portions of the files to a journalist after the medical center said that no patient files had been copied. Analyze the ethics of his actions using the methodology of section 10.3.1. Was this honorable whistle blowing or Irresponsible hacking?
First Group: Argue that it is an honorable whistle blowing.
Second Group: Argue that it is an irresponsible hacking.

Implications of Information Technology
Book Report Assignment

Instructions:
Book selection

You may choose a book that will be useful for your term paper, or you may choose an entirely different topic for the book report. See Book list below for a long list of suggested books.

Guidelines

Your book report should be roughly 1000 words.

Don't try to summarize the whole book. Give an overview of what it's about, then pick a few critical themes or issues and discuss how the author presents them. Analyze and comment; don't just summarize. Tell which points you think are valid and which you don't agree with, and why. Add your own examples, counterexamples, or arguments, if appropriate.

Some books on the book list are general evaluations of computers or technology. Some take one side (pro or anti-technology) and argue it strongly. Read critically. Think about and include counterarguments.

Book selection deadline

Turn in your book selection by the end of Week 3 (preferably by e-mail). If you choose a book that is NOT on the list of suggested books, include the following information: title, author, date of publication, and a sentence or two on what it's about if not obvious from the title.

I will limit the number of people reading the same book, so if your first choice is a very popular one, you may have to choose another. You have a better chance of acceptance of your first choice if your selection is on time (or early).

Book report deadline

The book report is due the end of Week 7.

Warning

The campus library may have some of these books, but in many cases, only one copy. You can get some from Interlibrary Loan, which may take a week or more (and you may have to return them after only a week or two). Some of the books are available in local libraries or bookstores. Start early.

Book Report Assignment: Book List
Last modified: Apr. 13, 2006

RECENT ADDITIONS

Jack Goldsmith and Tim Wu, Who Controls the Internet? (Oxford University Press, 2006) **Langsam**, **LAW**

LIST OF BOOKS

Robert M. Anderson, Robert Perrucci, Dan E. Schendel, and Leon E. Trachtman, Divided Loyalties: Whistle-Blowing at BART (Purdue University, 1980).
This book describes the efforts of several engineers to get computer-related safety problems fixed during the construction of the

San Francisco Bay Area Rapid Transit System. **LAW**

Frederick Bennett, Computers As Tutors: Solving the Crisis in Education (Faben, 1999).
Proposals for productive ways to use computers in education (a controversial topic). **CRC**

Sven Birkerts, The Guttenberg Elegies: The Fate of Reading in An Electronic Age (Faber and Faber, 1994).
Birkerts is a critic of computers; he writes his books on a typewriter.

Anne Wells Branscomb, Who Owns Information? (Basic Books, 1994). **LAW**, **Clermont**

Frances Cairncross, The Death of Distance: How the Communications Revolution Is Changing Our Lives (Harvard Business School Press, 2001).

Dorothy Denning and Peter Denning, Internet Besieged: Countering Cyberspace Scofflaws (ACM Press, Addison-Wesley, 1998) **CAS**

Peter J. Denning, ed., The Invisible Future: The Seamless Integration of Technology Into Everyday Life (McGraw Hill, 2001).

Peter Denning, Talking Back to the Machine: Computers and Human Aspiration (Copernicus Books, 1999.

Peter Denning and Robert Metcalfe, Beyond Calculation: The Next Fifty Years of Computing (Copernicus, 1997).

Michael Dertouzos, What Will Be: How the New World of Information Will Change Our Lives (HarperEdge, 1997) **Langsam**, **CAS**

Whitfield Diffie and Susan Landau, Privacy on the Line: The Politics of Wiretapping and Encryption (MIT Press, 1998). **Langsam**, **Clermont**

James A. Dorn, ed., The Future of Money in the Information Age (Cato Institute, 1997). **Langsam**

Hubert Dreyfus, What Computers Still Can't Do: A Critique of Artificial Reason (MIT Press, 1992).
A report on this book should include some discussion about how well Dreyfus's arguments have held up over the past decade. (Can computers now do some of the things he said they could not do?) **E-resource**

David H. Flaherty, Protecting Privacy in Surveillance Societies (Univ. of North Carolina Press, 1989). **Langsam**

Samuel C. Florman, Blaming Technology: The Irrational Search for Scapegoats, (St. Martin's Press, 1981).
A report on this book should include some discussion of how his ideas relate to computer issues. **Clermont**, **Engineering**, **Raymond Walters College**

Bill Gates, The Road Ahead (Viking Press, 1995). **Langsam**,**CAS**
Gates made some predictions in this book. How accurate have they been?

Neil Gershenfeld, When Things Start to Think (Owl Books, 1999).**CAS**

Mike Godwin, Cyber Rights: Defending Free Speech in the Digital Age (Times Books, 1998). **LAW**, **Clermont**, **CAS**

Jack Goldsmith and Tim Wu, Who Controls the Internet? (Oxford University Press, 2006) **Langsam**, **LAW**

Lance J. Hoffman, ed., Building In Big Brother: The Cryptographic Policy Debate (Springer Verlag, 1995).**Engineering**

Peter Huber, Law and Disorder in Cyberspace (Oxford Univ. Press, 1997).
Criticizes FCC regulation of telecommunications, showing examples where regulations have delayed introduction of new technologies. **LAW**

Merritt Ierley, Wondrous Contrivances: Technology at the Threshold (Clarkson Potter, 2002). Looks at expectations for and attitudes about many earlier technological devices.

Joel Kotkin, The New Geography: How the Digital Revolution Is Reshaping the American Landscape (Random House, 2000). **Langsam**

Thomas K. Landauer, The Trouble With Computers: Usefulness, Usability, and Productivity (MIT Press, 1995). **Langsam**

Steven Levy, Crypto: How the Code Rebels Beat the Government---Saving Privacy in the Digital Age (Viking, 2001; paperback 2004). **Langsam**

Steven Levy, Hackers: Heroes of the Computer Revolution (Doubleday, 1984).**CAS**

Stan Liebowitz and Stephen Margolis, Winners, Losers, and Microsoft (Independent Institute, 1999).**LAW**

Jessica Littman, Digital Copyright: Protecting Intellectual Property on the Internet (Prometheus Books, 2001).**Langsam**

Jerry Mander, In the Absence of the Sacred: The Failure of Technology and the Survival of the Indian Nations (Sierra Club Books, 1991).
Mander is a strong critic of technology. **Langsam**

Read at least Parts 1 and 2. Parts 3 and 4 are interesting but not much related to this course.

Joel Mokyr, The Gifts of Athena: Historical Origins of the Knowledge Economy, (Princeton University Press, 2002).**Langsam**

Joel Mokyr, The Lever of Riches: Technological Creativity and Economic Progress (Oxford University Press, 1990).**Langsam**, **CAS**

Glyn Moody, Rebel Code: Inside Linux and the Open Source Revolution (Perseus, 2001).**Engineering**

Alan Murray, The Wealth of Choices (Crown Business, 2000).

John Naisbitt, Global Paradox: The Bigger the World Economy, the More Powerful Its Smallest Players (William Morrow and Company, 1994).**Langsam**, **Clermont**

Peter Neumann, Computer-Related Risks (Addison Wesley, 1995).
Neumann is the founder and moderator of the comp.risks forum on Usenet.**CAS**

Donald Norman, The Invisible Computer: Why Good Products Can Fail, The Personal Computer Is So Complex, and Information Appliances Are the Solution (MIT Press, 1998).**CAS**

Donald Norman, Things That Make Us Smart: Defending Human Attributes in the Age of the Machine (Addison Wesley, 1993).**DAAP**

Andrew Oram et al., Peer-to-Peer: Harnessing the Power of Disruptive Technologies (O'Reilly, 2001).**Engineering**

George Orwell, 1984."Nineteen Eight Four" **Clermont**
Orwell's distopian novel in which the totalitarian government controlled the people via ubiquitous telescreens. (Orwell introduced the term "Big Brother" for the government.) Tell how realistic Orwell's view of the future turned out to be. What did he foresee accurately, and what did he miss?

Ivars Peterson, Fatal Defect: Chasing Killer Computer Bugs (Times Books, Random House, 1995).

Henry Petroski, To Engineer Is Human: The Role of Failure in Successful Design (St. Martin's Press, 1985).
This book is more about **Engineering** in general, not computer systems design, but the principles and lessons carry over. In your report, tell how the book is relevant to computer systems.**Engineering**, **CAS**

Neil Postman, Technopoly: The Surrender of Culture to Technology (Alfred A. Knopf, 1992).
Another critic of technology.**Clermont**

Virginia Postrel, The Future and Its Enemies: The Growing Conflict Over Creativity, Enterprise, and Progress (Free Press, 1998).

Douglas S. Robertson, The New Renaissance: Computers and the Next Level of Civilization (Oxford Univ. Press, 1998).**CAS**

Gene Rochlin, Trapped in the Net: The Unanticipated Consequences of Computerization (Princeton Univ. Press, 1997). **CAS**, **Clermont**

Jeffrey Rosen, The Unwanted Gaze: The Destruction of Privacy in America (Random House, 2000)**Langsam**

Kirkpatrick Sale, Rebels Against the Future: The Luddites and Their War Against the Industrial Revolution: Lessons for the Computer Age (Addison Wesley, 1995).
A vehement critic of computers. You can skim the first part of the book, about the original Luddites.**Langsam**, **CAS**

Douglas Schuler, New Community Networks: Wired for Change (Addison-Wesley, 1996).

Scott Shane, Dismantling Utopia: How Information Ended the Soviet Union (I. R. Dee, 1994).**Langsam**, **CAS**

Ithiel de Sola Pool, Technologies of Freedom (Harvard University Press, 1983).
About communications technologies and government policy. Although it's a little old, this book has a lot of relevance to issues about the Internet.
Langsam, **LAW**, **CAS**, **RWC**

Bruce Sterling, The Hacker Crackdown: Law and Disorder on the Electronic Frontier (Bantam Books, 1992).**Langsam**, **Raymond Walters College**

Clifford Stoll, The Cuckoo's Egg: Tracking a Spy Through the Maze of Computer Espionage (Doubleday, 1989).**Langsam**, **Raymond Walters College**

Clifford Stoll, Siobhan Adcock, ed., High Tech Heretic: Reflections of a Computer Contrarian (Anchor Books, 2000).**CAS**, **CRC**, **Clermont**

Charles Sykes, The End of Privacy (St. Martin's Press, 1999)**Langsam**

Adam Thierer and Clyde Wayne Crews Jr., eds. Who Rules The Net? Internet Governance and Jurisdiction (Cato Institute, 2003).
Laws and culture vary among countries. How should cyberspace disputes,

especially international disputes about free speech, intellectual property, privacy, etc., be resolved?

Adam Thierer and Wayne Crews, eds., Copy Fights: The Future of Intellectual Property in the Information Age (Cato Institute, 2002) **Langsam**, **LAW**

Linus Torvalds and David Diamond, Just for Fun: The Story of an Accidental Revolutionary (HarperBusiness, 2001).**CAS**, **Engineering**

Eugene Volokh, Freedom of Speech in Cyberspace from the Listener's Perspective: Private Speech Restrictions, Libel, State Action, Harassment, and Sex (Univ. of Chicago Legal Forum, 1996). You may have to get this from a **LAWLibrary**.

William Wresch, Disconnected: Haves and Have-Nots in the Information Age (Rutgers Univ. Press, 1996)**CAS**, **Clermont**, **E-resource**

You will find other possibilities in the "Books and Articles" sections at the ends of the chapters in _A Gift of Fire_.

Implications of Information Technology
Term Paper Assignment

Instructions:

Guidelines/specifications for the paper

Investigate the topic. Use articles and/or books, etc., for background. Your project must include some background research and some activity, e.g., an interview or a site visit. (If you choose a topic for which you can't think of an appropriate activity, discuss it with the instructor.)

Don't just report. Discuss pros and cons. Evaluate. Use your own words. Quote where appropriate. Give citations for facts and quotes. Discuss how your topic relates to material covered in the text and/or in class discussions.

The paper should be approximately 4000 words.

Outline for the paper (roughly)

Cover page with title and your name
Introduction/overview of topic and issues to be discussed

Background, description, and/or history of the issue
Issues, various points of view
Results of interviews, observations, etc.
Your comments or evaluation
Summary
List of references
Appendix

Use information and/or quotes from your interview or site visit in the appropriate place(s) within your paper. The Appendix should contain the name, position, and company (or other relevant information) for the person(s) you interviewed or the places you visited. For interviews, include your list of questions and indicate if the interview was in person, by phone, or by e-mail. (In-person interviews are best, but may not be available for some topics.) Include the person's answers. (A summary is ok.) If you identify the person fully and quote extensively from the interview in the body of your paper you do not have to include the appendix. The Appendix does not count toward the 4000 word requirement.

The project is to be done during this course. Do not turn in a paper done earlier for another course or for your job.

Reminders and warnings

Remember what this course is about. A few students have handed in papers that are purely factual or historic (e.g., a history of the Internet, a summary of computer technology used in the military). Such papers will not get high scores. You must include discussion of issues.

One of the most common problems with papers is poor organization. Write an outline. Organize your thoughts. You may use section headings to indicate the topic or purpose of sections of the paper.

A few students have waited until late in the semester to get started, then discovered that information on their topic was unavailable or people they wanted to interview refused. Start early in case you have to change topics or find a new interviewee or site visit.

Use a variety of sources for information and arguments. If you use articles from the Web, give the URL and the organization sponsoring the site. There's a lot of junk and unsupported opinion on the Web. Pay attention to quality of your sources. (If your topic is covered in the text, do not use the text as a main source. Report in more depth and/or on newer or other aspects of the topic.)

Now and then, a student hands in a paper he or she did not write at all or in which large segments are copied from other sources. Please don't do this. It is dishonest, unfair to your fellow students, and unpleasant for both you and the instructor. Plagiarism is usually reported to the appropriate university discipline office. Write in your own words. Start early; talk to the instructor if you have problems.

Requirements for submitting your topic description (due the end of Week 4)

Include a title and one or two paragraphs describing what you plan to do. Tell what interviews or site visits you plan. Be specific if you can. Include at least one good reference you plan to use (e.g., a book, an article, a Web site).

There will be a limit on the number of students doing any single topic, so it will be good to have a second topic in mind in case you choose one that has too many people.

Tips for interviews

Use ingenuity in choosing and finding interviewees. Choose someone in a position to have special knowledge of the topic. Don't be afraid of asking well-known people, but be prepared for refusals.

Start early. It may take time to find someone, schedule the interviews, and do follow-up.

Plan; write up your questions in advance. Start with easy questions, getting general information. Ask about positive things before asking about problems. Take notes so you get details right.

Be polite. Identify yourself and your project. Thank the person.

Grading criteria

Grading criteria include: background or history, presentation of issues and various points of view, interview or other activity, quality of argument and analysis (principles, examples, counterexamples), structure/organization, clarity of writing, sufficient references, sufficient length, and originality. You should define terms where necessary. Be sure to read and edit your final copy before handing it in.

Deadlines

End of Week 4	Topic description due.
Beginning of Week 6	Paper due, to be read and critiqued by another student.
End of Week 8	Critiqued papers to be returned, with comments.
Beginning of Week 10	Final paper (and commented draft) due.

TERM PAPER SAMPLE TOPICS

Your topic does not have to come from this list. These are suggestions.
The brief comments and questions for each topic are just a few ideas to spark your imagination and get you started.

THE TOPIC LIST

Devices to assist people with disabilities.
Report on computer-based technologies that assist people with disabilities. Consider blind people, deaf people, people who use wheelchairs, people with limited use of their hands and arms, etc. Describe some of the new tools and their impact. Discuss issues such as cost, any problems with these devices, etc. (Focus on newer developments, e.g., devices not mentioned in the textbook.)

Identification and biometrics.
A company announced plans to sell an identification chip that is implanted under a person's skin. About the size of a grain of rice, it could contain personal information and emit a radio signal that identifies the person. Discuss beneficial uses, potential problems and abuses, and appropriate guidelines for use of such a chip and other identification technologies, including various biometrics.

Telemedicine.
Describe applications, from remote consultation to remote surgery. Benefits, possible problem areas (privacy, errors, loss of personalized care).

Health information on the Web.
Research and report on Web-based health information sites, including such issues as benefits, reliability of the information, privacy protections, techniques being developed to rate or accredit sites, impact on medical care. Patients of some healthcare providers can access their own records online. Describe an example. How does it affect medical care?

Computerized medical record systems.
Many large HMOs have implemented computerized patient record systems. Report on one or more such systems, focusing on benefits, privacy risks and protections, how well it is accepted by doctors and staff, and other relevant issues.

Privacy on the Web.
What's happening now? Recent abuses and improvements. Describe and evaluate Web site policies and technical and policy privacy protections provided by the market, and current proposals for government regulations.

Privacy for organizations and businesses.
All our discussion of privacy concerns privacy for people. There have been incidents in which sensitive information that organizations and businesses must provide to government agencies has been made public, intentionally, accidentally, or by leaks. Release of information about fund-raising, sales plans, pricing, members, or customers might aid competitors. Release of information about manufacture of, storage of, and security for certain chemicals could aid terrorists. Report on

some cases and discuss reasonable extensions of principles about privacy for organizations and businesses.

Personal data privacy regulations in other countries.
Report on personal data privacy regulations, Web site privacy policies, and law enforcement access to personal data in one or more countries, e.g. the European Union.

Computers in law enforcement.
Issues include benefits to crime fighting, invasion of privacy, problems caused for innocent people because of errors. Describe cases where a computer system has been very helpful in catching a criminal or vindicating an innocent person, and describe cases where a computer system has caused serious problems. An activity for this project could include a ride-along in a police car. (A few students did this in the past and found it very instructive.) Another possible activity is to interview someone who runs or supervises the use of local law enforcement computer systems. What databases do they access? How do they prevent unauthorized access? Have errors in NCIC been reduced?

Computers in the legal/justice system.
Describe systems in use, from legal databases to artificial intelligence programs that help judges determine sentences. Consider the possibility of AI systems making judgments in some legal cases. Describe and evaluate pros and cons.

Government surveillance of communications.
How are arguments about Echelon and Carnivore affected by the terrorist attacks in 2001?

Technological responses to terrorism.
Describe and evaluate some of the computer-based technologies implemented or expanded after Sept. 11, 2001. (Include unmanned aerial vehicles equipped with cameras and sensors.) Consider effectiveness, cost, impact on daily life, air travel, risks, etc., and arguments related to privacy and civil liberties.

Children on the Internet.
There are several problem areas: availability of material not appropriate for children, contact with people who seek to abuse children, and privacy risks from game sites that ask children for extensive personal and family information (for marketing purposes). How serious are these problems? What is being done about them? Evaluate various solutions. Do benefits for children on the Net outweigh risks? Can we arrange to have the benefits without the risks?

The Global Economy.
What are the roles and impacts of computers and communications technology in the increase of trans-border economic activity (e.g., eBay as a global garage sale; customer service workers in other

countries handling U.S. consumer calls; databases to track the origin of a cow with Mad Cow Disease; etc.)? What are the benefits? What are the problems? Is this aspect of increased globalization a good thing for people in the U.S., for people in other countries, for humanity in general?

Electronic commerce.
Implications for the economy, for privacy, etc. Which industries will benefit? Which will be hurt? How will daily activities be affected? Are there significant social benefits or detriments from electronic commerce?

Electronic commerce.
There are many more specific topics. For example, Smart Cards: uses, benefits, privacy implications and protections in a particular application or industry. Another example: Several companies are working on technology for micropayments on the Net. What will the impact be (on the structure of businesses, physical store locations, communities, etc.) if we can easily make small purchases on the Net? What are the privacy and security issues?

Automated systems.
Study progress, safety, and social issues related to an automated system such as automated highways and self-driving vehicles.

Safety-critical applications.
Find a local application to study. Or study the Air Traffic Control system, which uses antiquated computers that break down often. Another idea: the Ariane 5 rocket which exploded because of a software problem. Investigate the safety measures used in software for other rockets. Nancy Leveson's book _Safeware_ is a good reference.

Use of computers in restaurants.
Investigation and discussion of the issues such as customer service, impact on employment, food safety, ambiance. Visit a restaurant with self-service ordering terminals. Some fast food restaurants use robotic devices for food preparation; report of one. Interview a waiter or restaurant manager.
(This could be part of a paper that looks at the impact of computer automation in two or three industries or consumer services.)

Spam.
Describe and evaluate technical solutions, current legislation and regulation (e.g., the federal CAN-SPAM Act of 2003), and significant proposed legislation. Some people propose that the federal government create a "Do not spam" list, like the "DO not call" list for telemarketers. Discuss privacy problems that could occur with implementation of such a list. Discuss the roles of technical and legislative solutions for spam. Consider the relevance of freedom of speech.

Censorship of the Internet.

Some aspect not covered in the text, or study some issue in more detail. Some possibilities: filtering Internet terminals in libraries, control of the Net in other countries. (For historical background on libraries: Louise S. Robbins, Censorship and the American Library: The American Library Association's Response to Threats to Intellectual Freedom, 1939-1969, Greenwood Press, 1996.)

Information warfare.
Will the next wars be fought without bombs? Will computer networks and computer-controlled infrastructure be the targets of military hackers? What is happening now? What kind of defenses are possible?

Recent copyright battles for music and movies.
Since A Gift of Fire was published, the music and movie industries have continued to develop new methods to fight copyright infringement of digital media. These include threatening lawsuits against universities and small retailers, uploading damaged files to file-sharing sites, and offering rewards for information about movie-pirating operations. They also include building copy-protection into CDs and DVDs and some attempts to sell authorized works on the Web. Report on several recent strategies used by the industries (legal, technological, and business). Evaluate the effectiveness and ethics of the methods. Describe current controversies about digital rights management.

Free software.
What's happening with "free" software? What is the impact of Linux and Apache, for example? What are the implications for consumers? For big companies like Microsoft?

Hacking.
Report on the community of hackers who hack to improve security. Are their actions responsible and beneficial, or immature and harmful, or both?

Identity theft.
What is the current state of the problem? Describe relevant laws. How have consumers and businesses changed behavior in response to Identity Theft? What technical solutions have developed?

Hacktivism.
Report on specific incidents or organizations engaged in hacktivism. Compare to civil disobedience and to other kinds of hacking.

Government surveillance of the Internet.
The terrorist attacks on the U.S. in 2001 led to laws reducing restrictions on government surveillance of the Internet. Before that, the Clinton administration proposed massive monitoring of major computer networks by the government to protect their security. Are these good ideas? What are the pro and con arguments?

Are Web issues really new?
Choose two other technologies or innovations, such as radio, telegraph, railroads, or electricity, and find out what ethical, social, and legal issues and controversies arose about them. Compare the problems and issues to current problems and issues about the Web. What solutions developed? How well do those solutions fit the Web?

Computers and the environment.
How are computers used by nature researchers and organizations. Describe applications that help protect the environment. Describe aspects of computers that cause environmental problems. What do environmentalists think of computers?

Political activism on the Net.
How has the Internet helped or hurt political groups outside the mainstream? How is it used by major political parties and candidates? What is the impact? How do/should current regulations about political campaigns affect individuals and small organizations that set up Web pages to support/oppose candidates and issues? (Look at the Resources page, Chap. 9, for a useful article.)

Communications technology and political protests.
How were communications technologies used by protestors in the fall of the Soviet Union, the democracy protests in China's Tiananmen Square, and in the protests following the Ukraine elections of 2004? Choose one or two major anti-government protest from before 1980 and compare. What do these experiences suggest for the future of political freedom and democracy?

Blogs.
What are they? How and when did they arise? For background, describe Usenet news groups (and perhaps 18th and 19th century newspapers). How are blogs similar to and how do they differ from news groups? Evaluate benefits and weaknesses. Do blogs illustrate empowerment and increased availability of information, or do they illustrate the avalanche of gossip and inaccurate or useless information on the Net?

Electronic Voting and Internet Voting.
In a few states in the U.S., some people voted in the 2000 presidential primary elections on the Internet. By 2004, several states and countries (e.g., India) began using electronic voting machines. How successful were the first experiments? Will most political elections be held on the Internet in the future? Discuss the problems of maintaining secret ballots, preventing election fraud, and providing for recounts (for both electronic voting machines and Internet voting). What other issues are relevant? How are the states (and other nations) handling these issues?

Violence in video/computer games.
What is the impact on children? There haven't been many serious studies yet. You could use studies on the impact of violence on television for background. Interview people who write and publish computer games to find

out their policies and views about violent games.

Use of computers in schools.
How are they used? Are they really helping to teach or to babysit? Visit an elementary school or middle school and observe how computers are used. Interview a teacher and a few students. For background, find some of the many research articles on the effectiveness of computers in education.

Distance learning.
What are the common uses? What will be the impact on universities? On adult education? Is cheating a problem?

Monitoring of employees' Web use and e-mail.
What policies are employers using? Perhaps study a few large businesses in your area. A useful part of a project on e-mail privacy could be collecting and evaluating (or writing) sample policies for different kinds of employers (e.g., for your university, covering students, faculty, and staff, and for a software company in a highly competitive business).

Cyberspace communities.
What makes a "community"? How do cyberspace communities handle decision making, dealing with troublesome members, etc.? Find one community to study in depth, preferably one that you are a member of or have a special interest in. Possibilities: an online game community; the Open Directory Project, etc. (Please respect the community's privacy guidelines and ask permission if quoting members.)

Gender or ethnic issues.
The _Journal of Women and Minorities in Science and Engineering_ might have some useful articles for background and ideas for specific projects. There have been several studies of differences in the way men and women use computers. There are many Web sites aimed at women or at specific ethnic minority audiences. You could study the differences and similarities between such sites and the Web in general.

Computing and network access in other countries.
For example, how are computers used in rural, poor areas of Africa? How do politics restrict access in Vietnam? Choose one country to study in depth or compare a few.

Science fiction and prediction.
Find several science fiction stories published at least 30 years ago that are set in the present time or near future and describe computer and communications technologies. Report on how closely their view of the technology corresponds to what is actually available. What social benefits and problems did they anticipate?

What will the world be like 50 years from now?
How will electronic communications and commerce affect the power of centralized governments? Everyday life? What will happen as computers

are connected to the human body? Deep Blue beat Garry Kasparov at chess in 1997. Will human intelligence be of less value in the future? Several experts have written books addressing these issues. You could read two or three and evaluate their predictions.

Assignments

Exercise 1 – Write a short essay (roughly 300 words) about some topic related to computing technology or the Internet that interests you and has social or ethical implications. Describe the background; then identify the issues, problems, or questions that you think are important.

23 out of 26 students (88.4%) achieved more than 80 %.

Goal of 80% achieved 80% or more was met

Exercise 2 – Over the next 9 weeks, collect news articles, from print or electronics sources, on (1) benefits and valuable applications of computer technology and (2) failures and/or problems caused by computer technology. The articles should be current, that is, published during this time period. Write a brief summary and commentary on two articles in each category indicating how they relate to topics covered in this book.

16 out of 25 students (64.5%) achieved more than 70 %.

Goal of 70% not achieved 80% or more was not met

I believe students forgot this assignment because it was assigned at the beginning of the quarter with a deadline for the end of the quarter. I really like this exercise as they can discover the new issues coming up. However, I need to keep reminding my students each week so they don't forget about it.

Term Paper Results:

22 out of 26 students (84.6%) achieved more than 80 %.

Goal of 80% achieved 80% or more was met

Book Report Results:

23 out of 26 students (88.4%) achieved more than 80 %.

Goal of 80% achieved 80% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter-2011 Quarter

Program Outcome: (Number and Description)

10.2 Explain the rationale for security practices

Course Number/Name:

32IT313 Information Security and Privacy

To assess this outcome, students are given the following project:

Assignment:

Threat Analysis Modeling using the Microsoft Threat Modeling Tool

Requirements:

For this assignment you need to submit a document that shows:

A threat model of a proposed website system using the CIA approach.

UCIT Threat Model for a proposed website to handle change management

Out of 29 students:

17 (58%) students successfully completed the model with a score of 70% or higher
12 students received a score of <70%

Automated Ghange Management System for UCit
Introduction
The UCit Help Desk is in charge of change management. Change management entails recording, assessing, planning, testing, implementing, and closing any sort of change to the UCit infrastructure. Examples of changes include adding a patch to a server or configuring a router.
The goals of change management include:
1. Allowing changes while maintaining or improving server stability
2. Reducing the number of changes needed to be backed out of due to inadequate preparation
3. Ensuring all affected parties are informed of the planned change
4. Providing a record of the changes
5. Ensuring that technical and managerial accountability is identified for all changes
6. Improving the accuracy of predictions relating to the impact of the change
7. Avoiding potential conflicts
8. Ensuring all documentation and training necessary for the change is in place prior to implementation
9. Providing a technical inventory for Business Continuity Planning purposes. Changes in a production environment are the single largest cause of interruptions and unpredicted results (15). In order for the change management process to be effective, it must be used for all events affecting the UC production environment and it must be used consistently by all operational areas of UCit on main campus.

Problem
The current process requires any tasks to be completed manually.
These tasks include:

o Changes object of Request to included rate of change
o Move to appropriate Committee folder
o Color-code the request
o Move approval responses to Approvals folder
o Move Change Management Request to the approved folder
o Create a new appointment in shared Outlook calendar
o Add details of change to an Excel spreadsheet
o Add details of change in to a Word document in the Change Management folder
o Send email to change management group notifying them of the approval
o Send email to the requestor asking if the change was successful/unsuccessful/canceled
o Enter response into spreadsheet
o Tally records for reporting using Excel

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Winter-2011 Quarter

Program Outcome: (Number and Description)

10.3 Explain the rationale for security practices

Course Number/Name:

32IT313 Information Security and Privacy

To assess this outcome, students took the following tests on Planning & Implementing information security, Risk Management of information security, and Legal, Ethical, and Professional Issues in information security

These questions were used in Test2 and Test3.

Test2 Results -- Out of 29 students:
25 (86%) students passed with a 70% or higher and 4 did not.

Test3 Results -- Out of 29 students:
26 (90%) students passed with a 70% or higher and 3 did not.

Name Planning-Implementing

Question What document can be used for planning and developing a security plan?

Answer

- [x] NIST SP 800-18
- [ ] COBIT 4.0
- [ ] ISO 17799
- [ ] CERT CSIRT

Question A framework for information security.

Answer

- [ ] IETF RFC 2169
- [x] ISO 27001
- [ ] NIST SP 800-12
- [ ] FIPS 140

Question This document is focused on the Internet community and the security issues related to it.

Answer

- [ ] ISO/TR 13569
- [ ] ISO/IEC 27001
- [x] IETF 2196
- [ ] ITIL 4.0

Question Which document covers the basic standards and methods for implementing security of IT systems?

Answer

- NIST SP 800-12
- FIPS 200
- NIST IR 7539
- ☑ NIST SP 800-14

Question A course of action used by an organization to convey instructions from management to those who perform duties.

Answer

- ☑ policy
- law
- standard
- procedure

Question More detailed statements of what must be done to comply with policy.

Answer

- laws
- ☑ standards
- guidelines
- procedures

Question Keystroke monitoring has been determined to unlawful without a warrant.

Answer

- True
- ☑ False

Question Order the following phases for an information security life cycle planning system from the beginning to end.

Answer

Display Order	Correct Order
1. development/acquistion	3. initiation
2. implementation	1. development/acquistion
3. initiation	2. implementation
4. disposal	5. operation/maintenance
5. operation/maintenance	4. disposal

Question Which of these plan types is used for long term operations after a disaster has occurred?

Answer

CSIRP
DRP
☑ BCP
RFP

Name Risk Mgmt

Question What is the name of the CERT methodology for risk management?

Answer

☑ OCTAVE
CSIRT
TAM
CRiSIS

Question This risk management assessment tool was developed with ISO 17799 standard in mind.

Answer

OCTAVE
☑ COBRA
ITIL
IETF RFC 2031

Question The current NIST document related to risk management.

Answer

SP 800-12
☑ SP 800-30
IR 7622
FIPS 199

Question A function of the likelihood of a given threat source's exercising a particular potential vulnerability.

Answer

☑ risk
threat agent
functional vulnerability
adversary

Question Minimizing a potential risk.

Answer

procedures
functional dependencies
nonrepudiation
☑ mitigation

Question Related to vulnerability indentification.

Answer ☑ Specific avenues threat agents can exploit to attack an information asset are called

vulnerabilities

- ☑ Examine how each threat could be perpetrated and list organization's assets and vulnerabilities
- Process works best when people with similar backgrounds within organization work iteratively in a series of brainstorming sessions
- ☑ At end of risk identification process, list of assets and their vulnerabilities is achieved

Question Acceptance or transfer of risk.

Answer

- ☑ In some instances, risk must simply be acknowledged as part of organization's business process
- ☑ Management must be assured that decisions made to assume risk the organization are made by properly informed decision makers
- ☑ Information security must make sure the right people make risk assumption decisions with complete knowledge of the impact of the decision
- Mitigating risks is the easy part.

Question Risk control strategies

Answer

Match Question Items	Answer Items
A. - A. apply safeguards	A. avoidance
B. - B. transfer the risk	B. transference
C. - C. reduce impact	C. mitigation
D. - D. understand consequences and take on the risk	D. acceptance

Question For each threat and associated vulnerabilities that have a residual risk there is no need to create a list of control ideas since a residual risk is small.

Answer

- True
- ☑ False

Question Impact analysis should follow the CIA model.

Answer

- ☑ True
- False

Question For purposes of a crime committed some kind of monetary damages needs to be determined. How can it be done? How would one determine the costs of a data breach?

Answer

Question Areas covered under ISO 27001 model.

Answer

- ☑ fault management
- storage management

- [x] performance management
- [x] configuration management

Name Legal-Ethical-Prof

Answer
- [x] HIPAA
- GLBA
- SOX
- DMCA

Question State Security Breach Notification Laws

Answer
- SSBNL
- [x] NCSL
- TCIT
- SOX

Question Most organizations develop and formalize a body of expectations called ____.

Answer
- procedures
- guidelines
- [x] policies
- laws

Question The overriding factor in leveling ethical perceptions within a small population is _____.

Answer
- threats of penalties
- policies
- organizational code of ethics
- [x] education

Question Related to export and espionage law.

Answer
- [x] SAFE
- HIPAA
- Patriot Act
- FOIA

Question It is OK to use IP as your own.

Answer
- True
- [x] False

Question Law meant to address federal computer related offenses.

Answer

- [x] CFAA
- [ ] FISMA
- [ ] FERPA
- [ ] CYA

Question This law has been superseded by FISMA.

Answer

- [ ] FERPA
- [ ] Computer Decency Act
- [x] Computer Security Act
- [ ] ITERA

Question The framework of this law is established by NIST.

Answer

- [ ] HIPAA
- [ ] FERPA
- [x] FISMA
- [ ] FPA

Question This law is related to identity theft.

Answer

- [x] ITERA
- [ ] CDA
- [ ] FERPA
- [ ] PCI-DSS

Question Financial reporting for publicly-owned companies.

Answer

- [ ] GLBA
- [x] SOX
- [ ] SAS 70
- [ ] DMCA

Question A set of standards related to the credit industry.

Answer

- [ ] DOS
- [ ] CLSR
- [ ] GLBA
- [x] PCI

Question The Financial Service Modernization Act is also know as

Answer

- [x] GLBA
- [ ] SOX

PCI
FISMA

Question Provides federal criminal liability for theft of trade secrets.

Answer

CFAA
☑ NIIPA
NERC
Copyright Law

Question
SP800-53 refers to this law.

Answer

Patriot Act
Identity Theft Enforcement and Restitution Act
☑ FISMA
FERPA

Question Allowed commercial banks, investment banks, securities firms, and insurance companies to consolidate

Answer

☑ Financial Service Moderization Act
HITECH Act
Sarbanes-Oxley
Financial Consolidation Act

Question Protects student information.

Answer

Federal Privacy Act
HIPAA
☑ FERPA
Student Protection and Privacy Act

Question International agreement for computer and Internet security.

Answer

DMCA
☑ ECCC
CLSR
MS-ISAC

IT Program OutcomesAssessment

Department of Information Technology
College of Engineering and Applied (CEAS)
University of Cincinnati

Assessment Date: May 5, 2011

Program Outcome: (Number and Description)

10.4 Recognize the need for, and have the ability to seek out and successfully pursue continued learning throughout their career

Course Number/Name:

20 IT 455: Management in Information Technology

Students complete a final written assignment in which they synthesize conclusions from the assigned readings, additional readings they have developed, from presentations by guest speakers, and from class discussions. This helps them recognize the need for continued learning throughout their careers. Students are assessed in terms of how well they complete the assignment, applying specific criteria discussed in the readings, in lectures, and discussions. The assignment sheet for the Final Essay is attached as representative assessment materials for 10.4.

Final Essay

We have dealt with a variety of key areas in information engineering technology management throughout the quarter. In our initial discussions we focused on "organizational culture" and "new paradigms" in management. Take the broad ideas we discussed, re-visit the readings for the class, and think about how what you read and what we discussed seem to fit together. Write an essay of four to six pages. In the essay you should show an understanding of how the ideas we discussed regarding organizational culture and the information and ideas in other, appropriate readings "fit". Your goal is to integrate elements of our discussion and the material in the readings to show an understanding of organizational culture, new paradigms of management, and practices for management in information technology.

Evaluation:

The essay will be evaluated for quality of content. It should have a clear focus, with a clear thesis and a clear, professional pattern that is direct and readable. Use appropriate specific supporting citations from the readings; your choices will be considered in the final evaluation. Your essay should show your ability to think analytically and critically; it should show insight. It should follow the conventions of the English language, with a style appropriate for a professional, including sound grammar and correct spelling. Edit it closely so that it shows economy of expression, with sound phrasing and appropriate wording.

Cite sources using standard bibliographic format in the handout available on the Blackboard site for the class.

Essays will be evaluated for quality of form. Each should be completed using a word processor, with no hand-written corrections or additions.

Format: Standard Word for Windows formatting. Borders: 1-inch top and bottom, 1.25 inches right and left. Type: 12 point Times New Roman. Spacing: Double spacing.

Evaluation Final Essay

Poor			**Good**			**Excellent**
1	**2**	**3**	**4**	**5**	**6**	**7**

A. Clear thesis (clarity of focus) _____

B. Professional pattern (direct and readable) _____

C. Appropriate specific citations from readings _____

D. Follows conventions of English (professional style, sound grammar, correct spelling _____

E. Economy of expression (sound phrasing, appropriate wording) _____

F. Citation of sources (standard bibliographic form) _____

F. Quality of form (format, appearance) _____

25 out of 25 students (100%) achieved more than 70 %.

Goal of 70% achieved 70% or more was met

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn 07-Winter11

Program Outcome: (Number and Description)

10.4 Recognize the need for, and have the ability to seek out and successfully pursue continued learning throughout their career

Course Number/Name:

Co-op Experience

To assess this outcome, data is looked at from the co-op employer survey (all co-op quarters). Under the learning/theory and practice section, employers are asked to evaluate each student on a scale of 1-5 for "Learns new material quickly."

5 – Excellent (the best or one of the best in this category)
4 – Good (above average but not excellent)
3 – Satisfactory (average when compared to others in this category)
2 – Poor (lacking in some important aspects or less than satisfactory)
1 – Unsatisfactory (lack of ability, failure to use it, or any other cause)

296 out of 299 responses (99.0%) got at least a 3 on this question.
Goal of 95% of students getting at least a 3 WAS met.

278 out of 299 students (93.0%) got at least a 3 on this question.
Goal of 90% of students getting at least a 4 WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2011

Program Outcome:

11.1 Apply Appropriate Problem Solving Skills in Web Development

Course Number/Name:

32 IT 220 Fundamentals of Web Development

11.1Apply Appropriate Problem Solving Skills in Web

While the entire course (all assignments and labs, final project) supports this, the final project demonstrates students' mastery of this outcome.

Students demonstrate mastery of this program outcome by completing the final project assignment for this course.

20 out of 22 students (91%) achieved more than 80 %.

Goal of 70% achieved 80% or more was met

Fundamentals of Web Development
Prof. Tom Wulf
Final Project Guidelines

Submitting your work:

- Your final project will be a complete Website implemented on a local hard drive ans submitted as a .zip file archive.
- **Projects are due by Monday of Exam Week** and may be turned in early.

Content Details:

- Because you are creating Websites that will not be available via the net, all normal copyright restrictions are waived since we have fair-use here for educational purposes. (If you plan to deploy your project on a site somewhere at a later date then you will have to observe copyright rules.)
- You are permitted to use any **separate** copy (text), active content (scripts), and media content (images, audio, and video files that you find, create, or otherwise acquire.

- However, you should not copy existing complete web documents or significant sections of existing web documents for your project. Specifically, you can snag any images or copy (text) that you find but should not copy web document fragments that already include both copy (text) and images. You can take some copy that you found and insert separate images that you found somewhere else but don't copy content that is already combined. (That's called plagiarism generally in academic land!)
- Be sure to spell and grammar-check your content. I believe that Dreamweaver or Front Page will do this for you.
- Include validation reports for all the files in your site in a MS Word Document called validation.doc in the root directory of your project.

Technical Requirements:

- Design your page for 1024 X 768 resolution. (This should be the most common setting for most of the lab machines.)

  I will be re-viewing your project with Internet Explorer or Firefox on my home machine.

  You should check your project with a second browser…
- Use css stylesheets and **layouts** for the pages of your site. (You may choose to have more than one css file for your site but pages with common styles should share a common external CSS file.)
    - Use the stylesheets to create a reasonable and attractive consistent look and feel for your site. (Again, you may decide to create several separate look and feels for sub sections of your site.)
    - All page content should be in sections. (If you use the css layout correctly this will be the case anyway.)
    - Do not use tables for layout. (Use tables for tabular data content if and only if you happen to have any.)
    - All text should use first-line indents and generally be formatted as paragraphs with style rules applied to them from the external sheet.
    - Don't use any embedded, inline, or deprecated style tags.
- Images should reflect best practice:
    - Always have alt, height and width attributes for every image.
    - Force padding or margin space around images so they do not abutt adjacent text or other content.
    - Do not resize images via markup (Height and Width attributes) unless you do so specifically to support a design that completely resizes to adjust to browser characteristics. (Put another way, if you have to resize an image, do so by using a graphic editor to make a new image of the required size.)
    - For this assignment, if you are in doubt, more images will be better than fewer…
- Vaildation:
    - Every page on your site should validate to the current markup standards.
    - All css sheets should validate.

    - Your entire site should be ADA compliant.
    - **Include your validation screen shots for your entire site in a file called validation.doc in the root of your project archive. (Do not link it into your site.)**
- Navigation:
    - No broken links!
    - This should be consistent and allow the user to easily traverse your site.
    - Do not rely in any case on the browser back-button for navigating your site!
    - Most terminal pages (i. e. greatest number of clicks from the home page) should have an explicit link back to the main page if appropriate.
    - Linear page sequences should have previous and next links and possibly top and home links.
    - You might consider using a css style recipe for navigation menus.

Technical Details:

- Scanning is available in the 4th floor lab. The lab assistant can assist you with this.
- I believe you can borrow digital cameras and camcorders from the Student Media Center in the Langsam Library on the UC Clifton Campus. They also have a media lab for student use.

Suggestions:

- Use a Web editor like Dreamweaver or Frontpage to complete your project and take advantage of the predefined page styles that are available.
- Use an online color scheme generator to select colors that work together in your design.
- Create the entire project on a hard drive with a root directory that will represent the root of the archive you will submit.
- Check your project thoroughly with a link checking tool, validators, etc.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 09/10

Program Outcome: (Number and Description)

11.2 Interactive Multimedia Development

Course Number/Name:

32 IT 230: Fundamentals of Digital Media

Students complete lab assignments and exercises that require them to develop and evaluate effective user interaction designs for the development of multimedia productions. These include:

Lab 3

This exercise requires students building a basic original interactive multimedia production. This lab requires learners to add to the assignment for Lab 2. This helps the learner begin to further understand the interface he/she will work with in developing multimedia productions for this course. Second, it helps the learner to further deal with forms of interactivity that can be developed for users. And third, it helps the learner to further grasp the importance of developing a plan that encompasses the flow of information in an interactive multimedia production.

For this lab you will extend the project completed for Lab 2 by adding navigation.

1. Add title to each page. Each title should be brief and descriptive.
2. Add a "Table of Contents" after the main title (page 1). This should be a bulleted list template. It becomes page 2. There should be a title for each bullet for pages 3 through 6.
3. Add a "Help" page after page 6. This should be a title template. It should only have the world "Help" where the title goes. It becomes page 7.
4. Add navigation buttons to the Master page. These buttons may be selected from the "Draw" toolbar, "AutoShapes," "Action Buttons". Or they may be created using images from the Clip Art library or from other sources. Place them so they do not interfere with the content on any of the pages. There should be the following buttons:
    a. Previous. It hyperlinks to the Previous page.
    b. Next. It hyperlinks to the Next page.
    c. Help. It hyperlinks to the Help page you have inserted in step 3 above.
    d. Home. It hyperlinks to the Table of Contents page you have inserted instep 2 above.
    e. Exit. It hyperlinks to End Show.

5. How to create hyperlinks: right click on the button. Select “Action Settings”, “Hyperlink to”. Then select the appropriate action for the button.
6. Some special notes:
   a. Make sure the buttons are sized appropriately. There’s a tendency to make them too big!
   b. Make sure the buttons have a color that fits your color scheme (you may alter the color by right clicking on the button and selecting “Format Auto Shape” or“Format Picture”).
   c. Make sure buttons are placed appropriately.
7. Save your file as a “PowerPoint Show” (.pps file extension). Name your file lastnamefirstnameLab2. For example, my lab would be TadayonValiLab2.
8. Submit the completed tutorial using the Bb assignment mechanism as before. Remember to submit your assignment as a single zip file archive containing all files.

20 out of 22 students (91%) got at least 120 points out of 150 points
Goal of 80% of students getting 120 points WAS met.

Lab 9

Final interactive multimedia production using ***Google Site***, Gmail, and Google Docs. This project will bring together all of the elements allowing learners to comprehend and see the final result of their collective work.A recipe is given to students. They are to teach college students how to prepare a nutritious dish that is delicious, healthy and economical and make it available via Google Site and advertise it via YouTube. This project will be part of the assignment section of the site for the class in such a way that the course will also be advertised indirectly. This is a group project requiring great deal of personal interaction and brain storming and decision making. Each group is encouraged to be creative and come up with original ideas. Images of ingredients must be created and owned so there will be no violation of any copyright laws. Using Google’s API, students are able to benefit from the features such as “Site Map” and “Table of Content” to effectively architecture their information similar to Wiki sites making sure that users of the site are able to know where they are, where they came from and where they can go next in terms of navigation.

20 out of 22 students (91%) got at least 400 points out of 500 points
Goal of 80% of students getting 400 points WAS met.

IT Program OutcomesAssessment
Department of Information Technology
College of Engineering &Applied Science
University of Cincinnati

Assessment Date: Winter 2011

Program Outcome: (Number and Description)

11.3 Apply appropriate problem solving skills in Software Development.

Course Number/Name:

IT301 Systems Analysis and Design

Assessment

Individual assignment

Case Study Assignment: Case Study Assignment

The case study:

LIBRARY INFORMATION SYSTEM

Problem Domain

9. The problem domain is a library management system.
10. Books are checked out, checked in and reserved (put on hold) by library members.
11. Students may check out books for 4 weeks, and faculty for 3 months.
12. Patrons are fined $0.25 per day that the books are overdue to a maximum of $5.00 per overdue item.
13. The library also has other resources that can be checked out, including music CDs, software and videos. These resources may only be checked out for one week at a time. However, the overdue fines are the same as they are for books.
14. There may be many copies of a particular resource, e.g. many copies of books with the same title.
15. Any checkable library resource may be renewed as long as no other library member has requested it.
16. Library members can browse the catalogue of resources to determine their status e.g. on the shelf, reference, out on loan, reserved etc.

Required Project Outputs for Case Study Assignment

4. Identify at least three actors and five Goals – put these in an Actor- goal table (refer to usecase101.doc)

5. Write three use case (use case text)in a single column format
6. Draw UML use case diagram.

Please refer to the Use Case 101 document before starting this project and use that document as a guideline.
Please read chapter 6 PowerPoint on Use cases
Include all the steps as shown in this document.

Team Assignment 1

Create the Domain Model for the Library Information System.

Team Assignment 2

Create the System Sequence Diagram for the Library Information System.

13 out of 17 students (76%) achieved more than 70 % in the above-mentioned assignments.

Goal of 70% achieved 70% or more was met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Spring 2010

Program Outcome: (Number and Description)

11.4 Apply appropriate problem solving skills in Network and System Administration.

IT275 Intro to Networking

Apply appropriate problem solving skills in Network and System Administration

To assess this outcome students are evaluated for their final grade in IT 275 Intro to Networking which covers topics in both Networking and System Administration.

33 out of 41 students (80.0%) got at least a C in this course.
Goal of 70% of students getting 5 points WAS met.

IT Program OutcomesAssessment

Department of Information Technology
College of Applied Science
University of Cincinnati

Assessment Date: Autumn-2010 Quarter

Program Outcome: (Number and Description)

11.5 Apply appropriate problem solving skills in database design, administration, and integration

Course Number/Name:

IT-309 Database Management

To access this outcome, students must complete several hands-on labs and take quizzes with appropriate questions.

Program Outcome 11.5 Apply appropriate problem solving skills in database design, administration, and integration

Out of 38 students (Query and Stored Procedure Project):
28 (74%) students received a grade of 70% or higher
10 students received a grade of 69% or lower

Triggers Project
All 38 (100%) students were able to complete the project with a 70% or better.

Paste you answers in this document. Make sure you rename it using your last. Upload this to the Assignment in Bb under Week 11.If you have any questions, email me.

1. Compare and contrast the following three queries. How are they the same/different? What question does each one answer? The 2nd and 3rd one return almost the same number of rows.

```
SELECT OrderID, UnitPrice*Quantity
from [Order Details]
Where (UnitPrice*Quantity)>10
OrderBy OrderID
```

Display the Orders and their total cost for each item in the order if the total cost is above 10. This should have the most results, because it will have several results per Order ID.

```
SELECT OrderID,MIN(UnitPrice*Quantity)
from [Order Details]
Where (UnitPrice*Quantity)>10
GroupBy OrderID
HavingMIN(UnitPrice*Quantity)>10
```

Display the Orders and their minimum cost (IE minimum costing item) in that order, where the total cost is greater than 10, and the minimum cost is greater than 10. This should have the least results, because there is two "restricting" elements (Where and Having) active on this select statement.

```
SELECT OrderID,MIN(UnitPrice*Quantity)
from [Order Details]
GroupBy OrderID
HavingMIN(UnitPrice*Quantity)>10
```

Display the Orders and their minimum cost, where the minimum cost is greater than 10. This one should have more results than the previous because the total cost does not have to be greater than 10 in addition to the minimum cost being greater than 10.

Questions 2-4 are to be standard queries and are not to be written as a stored procedure.
2. Write a query to answer the following request. I want to know how much freight each customer paid. Include the customer's name and shipped date as well as the name of shipping company (Speedy Express, United Package, and Federal Shipping). If the shipped date is null put in its place today's date.

```
SELECT Customers.CompanyName, Orders.Freight,ISNULL(Orders.ShippedDate,GetDate()),
Shippers.CompanyName
FROM Customers INNERJOIN Orders ON Customers.CustomerID = Orders.CustomerID
INNERJOIN Shippers ON Orders.ShipVia = Shippers.ShipperID
```

3. Write a query to answer the following request. I want to see the OrderID, Order Date and only the Maximum UnitPrice*Quantity for an order. See the example below.

OrderID	OrderDate	HighestLineItemPerOrder
10248	1996-07-04 00:00:00.000	174.00
10249	1996-07-05 00:00:00.000	1696.00
10250	1996-07-08 00:00:00.000	1484.00
…	…	…

```
SELECT [Order Details].OrderID, Orders.OrderDate,
MAX([Order Details].UnitPrice*[Order Details].Quantity)AS [MAX]
FROM [Order Details] INNERJOIN Orders
ON [Order Details].OrderID = Orders.OrderID
GROUPBY [Order Details].OrderID, Orders.OrderDate
```

4. Write a query to answer the following request. In one query display the count of customers, the maximum unit price * quantity of all products bought by Northwind's customers, and the maximum unit price * units in stock for all products.

```
SELECTCOUNT(Customers.CustomerID)AS'Values'
FROM Customers
UNION
SELECTMAX([Order Details].UnitPrice*[Order Details].Quantity)
FROM [Order Details]
UNION
SELECTMAX([Order Details].UnitPrice*Products.UnitsInStock)
FROM [Order Details] INNERJOIN Products
ON [Order Details].ProductID = Products.ProductID
```

5. Rewrite the following stored procedure to use TRY…CATCH instead of using the @@ERROR method.

http://www.novicksoftware.com/TipsAndTricks/Tips-erorr-handling-in-a-stored-procedure.htm

```
CREATE PROCEDURE usp_Example_ErrorHandler
AS

BEGIN
```

```
BEGIN TRY
        BEGIN TRAN
          INSERT INTO Authors (au_id, au_fname, au_lname, contract)
            VALUES ('222-22-2222'
                , 'Andrew'
                , 'Novick'
                , 1
                )

  INSERT INTO  titles(title_id, title, type, price,notes, pubdate)
      VALUES('WW0790'
        , 'Transact-SQL User-Defined Functions'
        , 'popular_comp',  49.95
        , 'Great book.', '2003-11-04')

  INSERT INTO titleauthor (au_id, title_id)
      VALUES('222-22-2222', 'WW0790')

  COMMIT TRAN -- No Errors, so go ahead
END TRY

BEGIN CATCH
          IF @@TRANCOUNT > 0
                  ROLLBACK TRAN

          RAISERROR(ERROR_MESSAGE(), ERROR_SEVERITY(), 1)
END CATCH
END
```

http://www.eggheadcafe.com/tutorials/aspnet/6a8ef7d5-840e-4629-b53a-1a40e7db601f/using-try--catch-to-rollback-a-transaction--sql-server.aspx Go to this web help for additional help

Triggers Project
All 38 students were able to complete the project with a 70% or better.

Sometimes a database may have a separate table to log certain activities taking place in the database. Create a new table named 'changelog' in your database as follows:

ChangeID	int identity(1,1)	primary key
EmpID	int	(will contain the ID of the employee being changed)
User	nvarchar(30)	(will contain the login of the user making the change)
Date	smalldatetime	(will contain the date of the change)
OldRate	money	(will contain the old payrate of the employee)
NewRate	money	(will contain the new payrate of the employee)

After creating the changelog table, create a trigger on the Employee table for UPDATE. Use this trigger to monitor the payrate column, and if the payrate of an employee gets changed, have the trigger insert a row into the changelog table with the appropriate data. [Use the function suser_sname() to get the user making the change and insert this into the user column.]

http://www.devarticles.com/c/a/SQL-Server/Using-Triggers-In-MS-SQL-Server/2/
"UPDATE" triggers have access to two virtual tables: Deleted (which contains all of the fields and values for the records before they were updated), and Inserted (which contains all of the fields and values for the records after they

have been updated). We get the value of the users name before the update from the "Deleted" table and store it in the "oldName" variable.

http://www.devx.com/dbzone/Article/7939/1954 (has a very good example – see below)
http://www.devx.com/getHelpOn/10MinuteSolution/20550
This 10-Minute Solution warns of the dangers of using identities and triggers together.
http://www.mssqltips.com/tip.asp?tip=1571
Using the EventData() Function with DDL triggers in SQL Server
http://www.restfuldevelopment.net/david-kawliche/writing/time-after-time/
using an audit history table to track all modifications to the Orders table
http://www.sqlmag.com/article/sql-server/preventing-deletes.aspx
prevent deletions in a table using an INSTEAD OF trigger
http://www.sqlteam.com/article/an-introduction-to-triggers-part-i
Intro to triggers
http://msdn.microsoft.com/en-us/library/aa258254(SQL.80).aspx (MSDN)
http://msdn.microsoft.com/en-us/library/ms189799.aspx
http://msdn.microsoft.com/en-us/library/aa258254(SQL.80).aspx

http://www.nigelrivett.net/SQLTriggers/Triggers_2_Creating_Audit_Trails.html
http://www.sqlteam.com/article/an-introduction-to-triggers-part-ii

FOR	Executes after the triggering statement is completed	Tables only	Multiple FOR (also known as AFTER) triggers are allowed, and you can control which trigger fires first and last using the sp_settriggerorder. All other triggers fire in an undefined order, which you can't control.
INSTEAD OF	Executes in place of the triggering action	Tables and views	Only one per table or view

The main benefit triggers offer is that they react automatically to a specific type of modification made to a specific table. Keep the following rules in mind when you're adding a trigger:

•Only the table owner has permission to create triggers, and permission can't be transferred.
•A trigger is considered a database object, so use object rules when naming and referencing a trigger.
•Triggers are restricted to the current database, although you can reference an object outside the database.
•A trigger can reference a temporary table but can't modify one.
•A trigger can't reference a system table.
Complete the following three steps before you actually add a trigger:

1.Identify the tables and views to which you'll add the trigger.
2.Decide what action-UPDATE, DELETE, or INSERT-will fire the trigger.
3.Choose a FOR or INSTEAD OF trigger.

The Advantages of INSTEAD OF Triggers
You can write a trigger for a view, but if the view is updateable it isn't necessary. Triggers on the underlying table fire automatically. (Of course, you may have your own reasons why you want triggers on such views.) Of all the advantages INSTEAD OF triggers offer, the main one is that they allow views that would normally not be updateable to support updates. A view that involves multiple tables must use an INSTEAD OF trigger to support inserts, updates, and deletes that reference data in more than one table. For example, you can write an INSTEAD OF trigger that inserts rows in multiple tables from a single view.

Another important advantage to INSTEAD OF triggers is that they allow you to write logic that accepts parts of a batch while rejecting other parts. Finally, INSTEAD OF triggers allow you to take some alternative action in the event of some particular condition that the application defines as an error.

```
If EXISTS
  (
  SELECT *
  FROM dbo.sysobjects
  WHERE id = object_id(N'dbo.AuditTrail')
  AND
  OBJECTPROPERTY(id, N'IsUserTable') = 1
  )
DROP TABLE dbo.AuditTrail
GO
CREATE TABLE dbo.AuditTrail
  (
  AuditTrailID Int IDENTITY (1, 1) NOT NULL,
  TableName VarChar (50) NOT NULL, ActionTaken Char (1)
  NOT NULL, ActionUser VarChar (50) NOT NULL, ActionDate
  DateTime NOT NULL
  )
ON [PRIMARY]
GO
```

Column	Datatype	NULL
AuditTrailID	Identity	Not allowed
TableName	VarChar(50)	Not allowed
ActionTaken	Char(1)	Not allowed
ActionUser	VarChar(50)	Not Allowed
ActionDate	DateTime	Not Allowed

```
CREATE TRIGGER [AuditInsertUpdate] ON dbo.Products
FOR INSERT, UPDATE
AS
INSERT INTO AuditTrail (TableName, ActionTaken, ActionUser, ActionDate)
VALUES ('Products', 'I', User_Name(), GetDate())
```

```
Use Northwind
Go

CREATE TABLE [dbo].[AuditTrailTable](
        [AuditTrailID] [int] IDENTITY(1,1) NOT NULL,
        [TableName] [nvarchar](50) NOT NULL,
        [ActionTaken] [char](1) NOT NULL,
        [ActionUser] [nvarchar](50) NOT NULL,
        [ActionDate] [datetime2](7) NOT NULL,
        [OldRate] [money] NULL,
        [NewRate] [money] NULL,
 CONSTRAINT [PK_AuditTrail] PRIMARY KEY CLUSTERED
(
        [AuditTrailID] ASC
)WITH (PAD_INDEX  = OFF, STATISTICS_NORECOMPUTE  = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS  = ON, ALLOW_PAGE_LOCKS  = ON) ON [PRIMARY]
) ON [PRIMARY]
```

```
USE Northwind
Go
IF EXISTS (SELECT name FROM sysobjects
     WHERE name = 'AuditUpdate' AND type = 'TR')
   DROP TRIGGER AuditUpdate
GO

CREATE TRIGGER [AuditUpdate] ON Employees
FOR UPDATE
AS IF UPDATE(PayRate)
Declare
@Old_Rate money,
@New_Rate money

Select @Old_Rate = (Select PayRate From Deleted)
Select @New_Rate = (Select PayRate From Inserted)
BEGIN
          INSERT INTO AuditTrailTable (TableName, ActionTaken, ActionUser, ActionDate, OldRate, NewRate)
          VALUES ('Employees', 'U', User_Name(), GetDate(), @Old_Rate, @New_Rate)
END
```

Note (from above):
"UPDATE" triggers have access to two virtual tables: Deleted (which contains all of the fields and values for the records before they were updated), and Inserted (which contains all of the fields and values for the records after they have been updated).

```
UPDATE [Northwind].[dbo].[Employees]
SET [PayRate] = 1234
WHERE LastName = 'McMahon'

select AuditTrailID , TableName , ActionUser , ActionDate , OldRate , NewRate
```