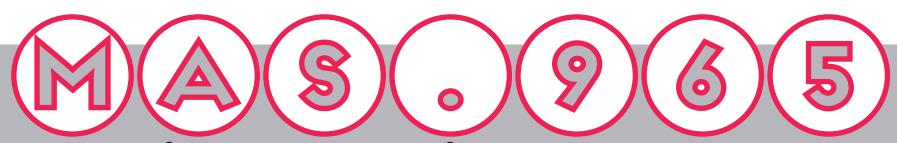# City Car with General Motors

MAS.965

MIT Media Lab Design Workshop: Smart City Vehicles

Instructor Professor William J. Mitchell

Studio Coordinator Ryan Chin, rchin^AT^media.mit.edu

Project Collaborators
Wayne Cherry, Chris Borroni-Bird, Roy Mathieu, General Motors

Prereq - Permission of Instructor
H, U Credit (spring)
(12-21 units to be arranged)
Tuesday, Thursday 2-5pm
Room E15-001 (Media Lab, Lower Level)
First Class Meeting Thursday, Feb. 8th, 2pm

MIT Course Collaborators
Franco Vairani, William Lark, Jr., Peter Schmitt, Patrik K nzler, Polychronis Ypodimatopoulos, Raul-David "Retro" Poblano, Eric Weber, Michael Lin.

** Requirements
Prior enrollment in the previous workshops is NOT a requirement for this class. Both graduate and undergraduate students are encouraged to apply to the course. Backgrounds in architecture, mechanical engineering, material science, computer science, aero/astro, and media arts and sciences are preferred.

Course Description
The Smart City Vehicle design workshop focuses on the conceptual and design development of intelligent mobility solutions for dense urban areas. This semester, students can choose between two projects:

1) Concept Scooter project with Sanyang Industry Corporation (SYM)
2) City Car project with General Motors (GM)

Both projects will run throughout the term with separate meeting times and several joint design reviews with invited academic and industry guests.

City Car Project
This term will focus on the final design development of the City Car. Working with General Motors, the Media Lab design team will develop and document a working, full-scale prototype at MIT. This effort will lead to the eventual fabrication and assembly of a show-car quality, full-scale vehicle for exhibition. We will research and innovate in small teams in the following areas:

1) Creation of a full-scale working prototype of the City Car (vehicle cabin and interior, folding chassis, and Wheel Robots);

2) Vehicle systems (driver's interface, virtual towing simulation, Wheel Robot controls)

3) Energy (complete systems design for both vehicle and required infrastructure);

4) Urban context and vehicle fleet management (vehicle interaction with city infrastructure);

5) Ownership models (developing shared and private business models for the vehicle).

This semester's design team will build upon the previous work by the Smart Cities group and its collaborators. A half-scale model of the chassis and Wheel Robots has been prototyped as a test bed for the full-scale prototype. Additionally, a full-scale physical model of the exterior shell and interior seating will serve as a starting point for this term's work. The successful development of these components (and others) will transition the project into summer fabrication mode. Invited critics from General Motors and other sponsors will periodically visit throughout the semester and give us critical review, advice, and consultation to help us realize the vehicle.

For more background information about the City Car, please download the following PDF: http://cities.media.mit.edu/download/2006frames-citycar.pdf

Image Credits Renderings - Franco Vairani, Physical Model - Peter Schmitt