MIT Media Laboratory

MAS.964

Design Workshop: Concept Car
with General Motors

Instructor
William J. Mitchell

Guest Critics
Wayne Cherry, General Motors
James Glymph, Gehry Partners

Studio Coordinator
Ryan Chin
rchin@media.mit.edu

Course Collaborators
Axel Kilian
William Lark, Jr.
Mitchell Joachim

Prerequisite
Permission of instructor
G, U (Fall)
12-21 Units to be arranged
M, W 2:00-5:00 pm

First class meeting
Wednesday
September 7, 2005
2:00 pm, E15-443
4th Floor of the MIT Media lab

Image courtesy of Franco Vairani

This design workshop is a continuation in the concept car workshop series. 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, and Media Arts and Sciences are preferred.

The goal of this design workshop is to radically rethink the relationship of the car and the city. We will pursue this goal, in close collaboration with Frank O. Gehry Partners and General Motors, by developing and critically evaluating designs for a concept car. The eventual outcome, after further development and documentation of a chosen option, will be the construction of a full-scale, running prototype.

This semester will focus on the design and development of three concepts. They are:
1) City Car - A smart one-way sharable electric vehicle that stacks for parking and recharging.
2) Athlete Car - An expressive performance vehicle with a dynamic articulating chassis and flexible sneaker-like exterior.
3) Zero Car - A full-scale working prototype with omni-directional driving ability for 1 to 4 passengers.

The course will also focus on the engineering development of a motor-wheel with embedded electric motor and suspension. The motor-wheels are a key building block to all three vehicles. We will work in small groups to design, engineer and fabricate working mockups and models. We will work from the beginning in a sophisticated 3D geometric modeling environment (Catia), and we will make extensive use of rapid prototyping and other facilities for producing physical scale-models.