

**Software Tools for Environmental Field Study (STEFS)**  
**1.992 Special Studies in Civil and Environmental Engineering**  
**Fall 2001 Term**

***Course Description***

This undergraduate seminar is a 6-unit subject (0-2-4) to be taught in a format that combines short lectures with a workshop-style, practical programming sessions. The subject designed for having a small class work towards the development of a hardware and software prototype. The subject matter is tailored to introducing the students to a large range of information technology and environmental engineering topics necessary for successful completion of the environmental data collection notebook. The subject tailored to environmental engineering majors interested in developing a mobile computing software product for field study applications. Weekly seminars will cover topics related to mobile computing platforms, programming and design of applications for Windows CE, interfacing environmental and geopositioning sensors, graphical user interfaces and mobile Geographic Information Systems (GIS). Additional topics related to environmental field sampling, hydrologic modeling, GIS and field testing of the software product will be covered. Subject also includes selected guest lecturers. A team programming project designed to enhance and add functionality to product prototype is required.

***Instructors***

The STEFS instructors are members of the MIT ENVIT Student Group, led by Enrique R. Vivoni (G), MIT 96', 98'. Mr. Vivoni will be principal coordinator of the seminar. He can be reached at [vivoni@mit.edu](mailto:vivoni@mit.edu) and x3-1969, MIT Room 48-208. Advising support is offered by Sheila Frankel ([sfrankel@mit.edu](mailto:sfrankel@mit.edu)), Assistant Director of the Ralph M. Parsons Laboratory and Prof. Dara Entekhabi ([darae@mit.edu](mailto:darae@mit.edu)) of CEE Parsons Lab. Other course instructors will include Mario Rodriguez ([rioma@alum.mit.edu](mailto:rioma@alum.mit.edu)), Daniel Sheehan ([dsheehan@mit.edu](mailto:dsheehan@mit.edu)) and Richard Camilli ([romeo@mit.edu](mailto:romeo@mit.edu)).

***Schedule and Room***

The seminar will be offered on Fridays from 3-5 pm in the Design Studio of the Future, MIT Room 1-131. It will consist of 14 lectures, each devoted to a particular topic, as shown in the Course Syllabus. The Design Studio of the Future is equipped with computers that working under the CEE department Windows NT network. Students will have access to the computing facilities during seminar hours and can request additional access. Each student will need to **request a computer account** to the CEE-net by visiting the account application site on the CEE-net website (<http://web.mit.edu/civenv/cee-net/>).

***Office Hours***

Office hours will be held on Wednesday from 4-6 pm in room 1-131. These office hours are intended for students to ask questions concerning the course project.

## ***Requirements***

The major course requirement will be a team-based project. During the second seminar, participants will be asked to form teams of 2-3 students (called WorkingGroups). Each STEFS WorkingGroup will be responsible for delivering a mini-project to be included as part of the prototype. Each team will also be assigned a team advisor for carrying out the project to completion. The project should consume the 4 hours of work per week allotted to the 6 unit class outside the classroom.

## ***Grading***

The seminar will be graded on a letter system since all participants are required to be Sophomores, Juniors or Seniors in the CEE Department. Grading will be based on the following components. The team project receives a single team grade.

10%    *Attendance and Class Participation*  
20%    *Small Programming Assignments*  
70%    *Class Project*

## ***Important Dates***

September 7      First seminar day  
September 14     WorkingGroups formed  
October 5          Add Date  
October 19        WorkingGroup Planning Presentations  
November 21      Drop Date  
November 23      No class, Thanksgiving holiday  
November 30      WorkingGroup Final Presentations  
December 14      Last seminar day

## ***Class Website***

A class website has been developed and will be constantly updated throughout the semester with information on the seminar. It is available through the ENVIT Student Group site (<http://web.mit.edu/envit/www>) under the heading Seminar. In addition, a web collaboration site will be set up for students to actively receive and provide information on their projects. It will be available at the site <http://www.learningwebservices.com/icampus/stefs>.