CVEN 689 Civil Engineering Applications of GIS  
Spring 2004

Instructor: Francisco Olivera, Ph.D., P.E.  
Wisenbaker Engineering Research Center, Room 205 – F  
Tel.: 979-845-1404  
e-mail: folivera@civilmail.tamu.edu

Office hours: Mondays and Wednesdays 9:00 a.m. – 10:00 a.m.

Schedule: Lectures: Mondays and Wednesdays 12:40 p.m. – 1:30 p.m. at CE203  
Laboratories: Thursdays 2:50 p.m. – 5:10 p.m. at CE217

Objectives: This course discusses the fundamental concepts of geographic information systems (GIS), the methods and software used to implement them, and their applications to solve civil engineering problems. After taking this course, the students will be able to use GIS tools to approach civil engineering problems that involve location as a central variable.

Prerequisite: Graduate standing or instructor’s approval

The class web page includes the syllabus and an Announcements page in which last-minute information will be posted. Students are expected to access the Announcements page at least each other day.


Grading: Laboratory assignments 15%  
Literature reviews 15%  
Two tests 25%  
Term project 35%  
Class participation and attendance 10%

Letter grades will be assigned according to: A (100 – 90), B (89 – 80), C (79 – 70), D (69 – 60), and F (less than 60). Numeric grades will be rounded to the nearest integer.
Laboratory assignments

There will be weekly laboratory sessions with one or more assignments per session. Assignment solutions must be handed-in at the end of the session. All laboratory work will be conducted at TAMU – Department of Civil Engineering facilities where software licenses are available.

Literature reviews

Prepare four 300- to 400-word article reviews. At least two of the select articles must be related to your term project. Articles published in the previous five years in technical journals and other nationally or internationally recognized periodicals are recommended. Submit a list of complete references of the articles you plan to review by 2/9/04 for approval. An article cannot be reviewed by more than one student. Exceptions to this rule will be considered on a case-by-case basis. Article reviews are due on 2/16/04, 2/23/04, 3/1/04 and 3/8/04.

Tests

Two tests will be given. The first test will cover half the material and the second test all the material discussed in class. Questions related to reading material may also be included. Test 1 is scheduled for 3/8/04, and Test 2 for 4/12/04.

Term project

Prepare a paper on an application of GIS in your field of study. Submit the title and a 150-word description of your proposed term project by 2/23/04 for approval. Deliver your term project in HTML or PDF electronic format by 5/3/04, ready to be posted in the class web page. The final report should include: **Header** [Texas A&M University, Department of Civil Engineering, Instructor: Dr. Francisco Olivera, CVEN689 Applications of GIS to Civil Engineering, <project title>, <author>, and <date>], **Abstract** [Stand-alone 200-word summary of your project], **Introduction** [(1) What is your project about?, (2) Why is your project topic important?], **Literature review** [(1) What has been done in the past?, (2) What is new in your project?], **Methodology** [What are the methods of analysis used in your project? If possible, this section should not be specific to the selected study area], **Application, results and discussion** [(1) What is the study area? (2) What data did you use? (3) What are the results of your analysis? (4) What do your results mean?), and **Conclusions** [What has been learned from this project? This section should not include concepts not discussed in any of the previous sections]. Likewise, prepare a poster (24” x 36” in portrait format) that summarizes your work. The poster should
include a label [Texas A&M University, Department of Civil Engineering, CVEN689 Applications of GIS to Civil Engineering, Instructor: Dr. Francisco Olivera, <project title>, <author> and <date>], maps, and text boxes. Feel free to use of charts, tables and/or pictures to better convey the information. Deliver the poster in hard-copy by 5/3/04. Additionally, present your work in a 15-minute presentation at the end of the semester on the day and time assigned.

**Final Exam:** No final exam.

**University Student Rules:** It is the student’s responsibility to be fully acquainted and to comply with the University Student Rules (http://student-rules.tamu.edu).

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of student Life, Services for Students with Disabilities in Room 126 of the Koldus Building, or call 845-1637.