PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

FUNDAMENTALS OF GEOGRAPHIC INFORMATION SYSTEMS
SURV 2200

Class Hours: 2.0  Credit Hours: 3.0
Laboratory Hours: 2.0  Date Revised: Spring 2011

Catalog Course Description:

Designed for students who want to become generally familiar with GIS technology and those seeking basics needed for advanced GIS courses. An overview of the GIS profession and the opportunities available in the field, including introductory content on typical business and technical applications, data, software and techniques used to complete GIS projects are covered. Students receive hands-on experience with global positioning and GIS hardware and software. When possible, local GIS professionals present seminars on their work.

Entry Level Standards:

The student should be able to effectively communicate with instructor and peers, complete assignments according to instructor specifications, and read and write at the required level.

Prerequisites:

None

Textbook(s) and Other Course Materials:


I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to GIS Concepts &amp; Terminology</td>
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<tr>
<td>2-4</td>
<td>Global Positioning Technology, Maps and Navigation</td>
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<tr>
<td>5-6</td>
<td>Vector GIS and Databases</td>
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<td>7-8</td>
<td>Raster GIS, Images and Photogrammetry</td>
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<td>9-10</td>
<td>GIS Software Tools and Systems</td>
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<tr>
<td>11</td>
<td>Data Sources and Data Quality</td>
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<tr>
<td>12</td>
<td>Business GIS and Location Based Services</td>
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<tr>
<td>13-14</td>
<td>GIS Products: Cartography, Web GIS, and Customization</td>
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</tbody>
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II. Course Goals*:

The course will:

A. Build the skills to access spatial data sources, i.e., maps, land records, etc. I & II
B. Foster the ability to create digital spatial data, i.e., digitizing maps. I, II & III
C. Build the skills to manage data by editing & validating digital libraries, i.e., land & tax records. I, II, IV
D. Analyzing data, i.e., using address matching to convert postal addresses and/or zip codes to geographic coordinates, thus creating new data. I, IV
E. Build the skills to display analysis results in the form of maps, tables, & graphs. I, II, III & IV

*Roman numerals after course objectives reference goals of the Engineering Technology program.

III. Expected Student Learning Outcomes*:

The student will be able to:

1. Locate data for use in a GIS. A
2. Plan GPS data collection for GIS applications. B
3. Make wise choices between data collection and GIS analysis methods. B
4. Use on-screen digitizing with images scanned from maps, photographs, or satellite data if suitable. B
5. Understand the different types of devices for general input of any data into a computer. C
6. Determine whether raster or vector GIS will be used. C
7. Utilize database for editing entity and attribute errors. C
8. Perform table and spatial queries. C, D
9. Use spatial analysis tools with vector and raster data. D, E
10. Apply the ideas of the mean, median, mode, variance and standard deviation to data. C
11. Evaluate the accuracy of both base files and address files and standardize address files. C
12. Evaluate non-matches and understand the rematch process. D
13. Use knowledge of map elements, map types, and proper cartographic conventions to guide map design decision-making. E
14. Operate plotter/printers to produce high quality maps. E

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.
IV. Evaluation:

A. Testing Procedures:

Exams:
Three exams will be given. Exams are true-false, multiple choice, matching, short answer/essay.
When a student misses an exam due to illness, he must contact the instructor immediately upon return and make-up the exam within one week.

Quizzes:
Quizzes may be given by the instructor. Most quizzes will be un-scheduled and randomly given. They cover the previous session’s materials or the reading assignment for that day. There is no make-up or extra credit given for quizzes missed.

Homework:
Students may also be required to hand in answers to select questions at the end of each chapter or other appropriate homework at the instructor's discretion. All written assignments must be handed in on 8 ½” x 11” paper with smooth edges, or forms provided by your instructor.
All written assignments will be assessed a 10% penalty for each school day it is late.
All student work submitted for evaluation may be retained by the instructor.

B. Laboratory Expectations:

Each student is expected to complete all lab assignments.

GPS/GIS Skills: Individual exam to demonstrate competence in using GPS/GIS software and associated laboratory equipment.

C. Field Work:

Students will be required to collect GPS data in the field to be processed in the laboratory.

D. Grading Scale:

CLASSROOM (55-60%)
Final grades will be computed from the grades obtained on homework, quizzes and examinations as follows:
Quizzes & Homework = 20% - 25%
Examinations = 15% - 25% Each
LAB (40-45%)
Final grades will be determined by grades obtained on lab assignments and skills tests. Each assignment is graded on completeness, accuracy and graphic representation of data.

Grades are based on the following:
90 - 100   A
85 - 89    B+
80 - 84    B
75 - 79    C+
70 - 74    C
60 - 69    D
Below 60   F

V. Policies:

A. Attendance Policy:
Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of the Learning Division, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of the Learning Division.

B. Academic and Classroom Misconduct:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

C. Accommodations for disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.

D. Other Policies:

Use of Equipment:
Any act of misuse, vandalism, malicious or unwarranted damage or destruction, defacing, disfiguring, or unauthorized use of property/equipment belonging to Pellissippi State is subject to disciplinary sanction.