

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

IMAGE & RASTER GIS ANALYSIS
GIS 2120

Class Hours: 3.0

Credit Hours: 3.0

Laboratory Hours: 0.0

Date Revised: Fall 00

NOTE: This course is not designed for transfer credit.

Catalog Course Description:

Provides training in the use of advanced image and raster GIS tools including the analysis of multi-spectral satellite data now widely available. Students will also be trained to use 3D tools to visualize GIS data. Data from the Endeavor satellite that made the first 3D map of the earth will also be incorporated. Provides the analytical basis for the preparation of raster data for the use in GIS 2510.

Entry Level Standards:

Students should have knowledge and experience working in the Windows operating system environment, including the use of the Microsoft Office software components. Students should also have the ability to use a standard keyboard and maintain a rate of 10 words per minute. Students should also have mathematics, writing, and verbal skills at the college level.

Prerequisites:

GIS 1010, 1020 or consent of GIS coordinator

Textbook(s) and Other Course Materials:

TBA

I. Week/Unit/Topic Basis:

TBA

II. Course Objectives*:

- A. Understand advanced image and raster techniques in order to appropriately apply them to GIS projects. I, II, IV
- B. Understand the relationships between various advanced image technologies and practical applications. I, II, IV

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

III. Instructional Processes*:

Students will:

- 1. Use spatial elements, measurements, locations and references to develop graphic and numerical awareness of the real world. Understand how information in the form of maps and numbers connect to the physical world. *Numerical Literacy Outcome, Transitional Strategy*

2. Be familiar with the basic procedures and the overall quality of GIS databases. *Numerical Literacy Outcome, Problem Solving and Decision Making Outcome*
3. Participate in open discussions regarding the strengths and weaknesses of GIS procedures and what improvements might be made in future releases. *Active Learning Strategies, Communication Outcome, Transitional Strategy*
4. Use the Internet and electronic mail to communicate effectively between the instructor, other students, and for information gathering. *Technological Literacy Outcome, Information Literacy Outcome*
5. Internalize the work ethic by demonstrating regular attendance, punctuality, dependability, cooperation with teachers and peers, and professionalism. *Personal Development Outcome*

*Strategies and outcomes listed after instructional processes reference Pellissippi State's goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

Upon successful completion of this course, the student should be able to:

1. Use advanced image software and tools to analyze raster data. A, B
2. Demonstrate unsupervised classification of multispectral raster data. A, B
3. Demonstrate supervised classification of multispectral raster data. A, B
4. Use 3D tools to visualize raster and vector data. A, B
5. Demonstrate knowledge of sources and costs of image data. A, B
6. Use Raster GIS analysis capability. A, B
7. Create an Aspect Map. A, B
8. Create a Surface Slope Map. A, B
9. Conduct ground-truth survey for supervised classification. A, B

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures: 65% of grade

Four tests will be administered (three tests plus the final) counting for approximately 65% of the final grade.

B. Laboratory Expectations: 35% of grade

Students will be assigned group and/or individual projects. The ability to work with others, the ability to make efficient use of equipment, and the level at which students perform will contribute to the grade.

C. Field Work:

N/A

D. Other Evaluation Methods:

N/A

VI. Policies:

A. Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course.

B. Academic Dishonesty:

Plagiarism, cheating and other forms of academic dishonesty are prohibited. A student guilty of academic misconduct, either directly or indirectly through participation or assistance, is immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions that may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F for the exercise or examination or to assign an F in the course.

C. 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.