COURSE OVERVIEW

- To understand the various purposes, roles and representations of cartography
- To gain and practice the use of cartographic language in the creative design process
- To gain and practice skills in cartographic design, representation and production in a GIS environment
- To gain an introduction to web mapping and its potential

COURSE OBJECTIVES

On completing Geography 462, Students will:

- have gained understanding of the purposes of cartography, recognize the elements of cartographic representation, and how maps work
- have gained understanding of the theory and principles of cartography and their relationship to practice
- be able to create digital maps in formats reflecting the purpose, content and function of input data
- be able to use GIS software to produce accurate, appropriate, convincing and creative maps and graphics
- be able to use digital cartographic methods for exploring, critiquing, confirming and presenting geographical relationships
- be able to create basic web maps and have a foundation for further development
- have increased their proficiency in graphical literacy
- have increased their proficiency in presentation and display

COURSE DESCRIPTION

Cartography is the knowledge associated with the art, science, and technology of maps. Maps represent and communicate about our worlds and landscapes: real, perceived and imagined; global and local; earthbound, or of other worlds and created spaces. Maps portray spatial relationships among selected phenomena of interest and increasingly are used for analysis and synthesis. Through digital cartography and web mapping, however, it is possible for almost anyone to produce a bad map in minutes. Although cartography has undergone a radical transformation through the introduction of digital technology, fundamental principles remain. Doing computer cartography well requires a broad understanding of graphicacy as a language (as well as numeracy and literacy). This course provides an introduction to the principles, concepts, software and hardware necessary to produce good maps, especially in the context (and limitations) of geographic information systems (GIS) and the web.

The lectures emphasize basic concepts for understanding the process of geographic information representation and use. All concepts and techniques learned in this course are applicable to GIS. As far
as is possible labs are integrated with the lecture materials. Practical work emphasizes hands-on experience with the retrieval, manipulation, and presentation of geographic data.

Students will compile a portfolio of their practical work. Five lab projects are assigned for this course. A final project of students' choice will be identified through discussion with Dr. Elmes. Students will use mapping software and hardware in the Department's computer labs in White Hall. Although no computer programming is required for this course, previous computer experience with ArcGIS is helpful. Students will complete an on-line tutorial on ArcGIS Cartography at ESRI's Virtual Campus.

BRIEF OUTLINE
- Introduction to digital cartography
- How is digital (computer) cartography different from manual cartography?
- Principles and practice of cartography
- The roles and purposes of maps and graphics
- Cartography as language and communication
- Map content, design and implementation
- Graphic representation
- Abstraction
- Visualization
  - of entities and attributes
  - of quantities
  - of quality
  - of uncertainty
- Web mapping
- Composing maps and graphics
- Presentation and display
- Representing non-geographic data through cartographic methods

REQUIRED TEXTS:


Recommended Readings:

SUGGESTED READINGS IN WISE LIBRARY.
Carter, James, 1984, Computer Mapping (Progress in the ’80s), Resource Publications in Geography, Washington, DC: Association of American Geographers. (To see how far we’ve come)
GEOG 462: DIGITAL CARTOGRAPHY: MAP DESIGN, AND SYMBOLIZATION IN GIS AND COMPUTER CARTOGRAPHY


GRADING (TOTAL 500 POINTS)

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Five (5) Cartographic Assignments (350 points)</td>
<td>Assignment 1: Map Projections 50 pts.</td>
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<tr>
<td>1 ERSI Virtual Campus Certificate (50 points)</td>
<td>Assignment 2: Classification 50 pts.</td>
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<tr>
<td>Midterm Exam - (50 points)</td>
<td>Assignment 3: Symbols 70 pts.</td>
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<tr>
<td>Final Exam - (50 points)</td>
<td>Assignment 4: Terrain mapping 80 pts.</td>
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<td>Assignment 5: Individual Project 100 pts.</td>
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A = 90% 450 - 500 points
B = 80% 400 - 449 points
C = 70% 350 - 399 points
D = 60% 300 - 349 points
F > 60% fewer than 300 points.

GRADING POLICY
No make-up exams except by prior arrangement with instructor. All late assignments are graded zero. Exam grading appeals in writing are accepted on the day the exam is returned.

ATTENDANCE POLICY
Students are expected to attend every lecture and lab. It is essential to keep up with the course materials. In the past, students who have fallen behind through nonattendance have failed. Consistent with WVU guidelines, students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. Make-up exams for absences due to any other reason will be at the discretion of the instructor. You are expected to attend all classroom and lab sessions.

Inclusivity Statement
“The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Accessibility Services (293-6700). For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see [http://diversity.wvu.edu](http://diversity.wvu.edu).”

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