OBJECTIVES

Geography 350 / 550: Geographic Information Science (GISc) considers the theory, concepts and applications of geographic information. Geographic Information Science is the foundation of the analysis and technology of Geographic information Systems (GIS), Remote Sensing, Global Positioning Systems (GPS) and Location-Based Services (LBS). GISc is a multidisciplinary field drawing on, among others, computer science, cartography, geodesy, photogrammetry, spatial statistics, cognitive psychology and of course, geography. This course is a prerequisite to further studies in GIScience in the WVU Geography Program.

In GEOG 350 / 550, you will learn skills and concepts related to the computer-based handling of spatial data and geographic information. By the end of the course you should have gained a working knowledge of the following:

- GISc as an information-producing science embedded in human society and its institutions,
- The importance of spatial data in the information economy, decision-making and everyday life,
- Knowledge of the function and use of hardware, software, human and institutional components of GIS,
- GIS analysis and display, software functions and operations
- Spatial data models, data delivery and dissemination,
- Spatial analysis and practical GIS applications, and
- The ability to specify and solve geographical problems using creative thought combined with the analytical tools provided by GIS software.

The development of your ability to think spatially will be a major emphasis, as will the ability to think and reason critically using geographic information. Employers hire people who are able learners and problem solvers, not those who only know how to use a GIS software package. If you want to use GIS in a career or for further study, you should use this course as a platform to acquire some programming and application development skills. In the laboratory sessions, students will use ESRI’s ARCGIS® version 10.1 to examine a variety of typical GIS concepts and problems, demonstrating the use of spatial databases, geographic analysis functions, the versatility and limitations of GIS, and the power of cartographic analysis.

The material has been developed and updated continually from the core curriculum of the National Center for Geographic Information and Analysis (NCGIA) and the University Consortium for Geographic Information Science.
These revisions reflect the rapid pace of change in the world of information technology and progress in the principals and concepts underlying GIScience.

Please note:
Due to the variety and complexity of available software, it is NOT the intention of this course to train students to be experts in any particular GIS software package; however, you will have hands-on experience with a major system used commercially: ESRI ArcGIS version 10.1. A copy of ArcGIS 10.1, valid for one-year, is also available to WVU students from the WV GIS Technical Center. On completion of this course, it is possible to acquire software and spatial analysis certification using ESRI’s Virtual Campus. Please see Dr. Elmes for details.

**COURSE REQUIREMENTS**

**Attendance and Grading Policy:**
At WVU class attendance contributes significantly to academic success. Students who attend classes regularly tend to earn higher grades and have higher passing rates in courses.
Class attendance is MANDATORY. Attendance will be taken daily. You are permitted 3 unexcused absences; thereafter each class missed will reduce your final grade by 1.0%.
See WVU attendance policy: [http://www.wvu.edu/~acadaff/acad/policies/attendance.htm](http://www.wvu.edu/~acadaff/acad/policies/attendance.htm)

All lab exercises must be handed to the Graduate Teaching Assistant by the stated deadline, which will normally be 5 pm on the Friday following the setting of the assignment. **50% of the grade will be deducted from late assignments.** A final deadline will be specified after which time no assignments will be accepted. Exam grading appeals in writing will be accepted on the day the exam is returned.

Consistent with the WVU guidelines, students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. No makeup exams will be given except by prior arrangement with the instructor. Make-up exams for absences for any other reasons will be at the discretion of the instructor. An incomplete grade will be issued only under the strict guidelines of university regulations.

**Grading:**
Grading in GEOG 350 will be on the basis of two examinations, four quizzes, and the completion of laboratory exercises. A total of 500 points will be awarded; 100 points for the final exam (20%), 100 points for the midterm exam (20%), a total of 100 points for 4 quizzes (19%), and 210 points for laboratory assignments (41%).
See below for grading in GEOG 550.

**Grading Scale (Undergraduate):**

- A  90% 450-510 points
- B  80% 400-449 points
- C  70% 350-399 points
- D  60% 300-349 points
- F  fewer than 300 points
Grad students will attend all lectures and complete all labs. Graduate students will be required to prepare a paper (8 – 10 pages) detailing the role of GIS in their graduate thesis project or relating the application of GIS to their research interests. The topic of the project will be chosen in consultation with Dr. Elmes. The assignments will be assessed as an additional 50 points.

Grading Scale (Graduate):

- A  90% 495-550 points
- B  80% 440-494 points
- C  70% 385-439 points
- D  60% 330-384 points
- F fewer than 330 points

TEXTS AND RESOURCES

Required:

Other reading assignments will be made available during the semester for graduate students.

Social Justice Statement

WVU is committed to social justice. This class will adhere rigorously to that commitment and foster a nurturing learning environment based upon communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin. Any suggestions as to how to further such a positive and open environment in this class are welcomed and appreciated. 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 arrangement with Disability Services (293-6700).

Plagiarism

Plagiarism is a serious academic offense. West Virginia University regards plagiarism as academic dishonesty. Consequences of plagiarism include failing an assignment, receiving a lower course grade, and even failing a course. Plagiarism is the act of using someone else's words, sentences, or ideas and passing them off as your own without giving credit by citing the original source.

You might be plagiarizing if you:

- Submit someone else's work as your own.
- Buy a paper from a papermill, website or other source.
- Copy sentences, phrases, paragraphs, or ideas from someone else's work, published or unpublished, without giving the original author credit.
- Replace select words from a passage without giving the original author credit.
- Copy any type of multimedia (graphics, audio, video, and internet streams), computer programs, music compositions, graphs, or charts from someone else's work without giving the original author credit.
- Piece together phrases, ideas, and sentences from a variety of sources to write an essay.
- Build on someone else's idea or phrase to write your paper without giving the original author credit.
- Submit your own paper in more than one course.