# INTRO TO GIS & CARTOGRAPHY

**GEOG 2500 – Spring 2014**
**Lectures & Labs Mon/Wed/Fri 9:20am – 10:15am**
**323 Ross Hall**

**Instructor:** Andrew Joyner, Ph.D.
Office: 308 Ross Hall
E-mail: joynert@etsu.edu

**Office hours:** MWF: 10:30-11:30am
or by appointment

## 1. Course Description

This course introduces students to the use of computers in the construction and display of spatial information, including maps, statistical charts, and graphs. Emphasis is placed on the nature of geographic applications, and the ways in which digital methods assist in tasks of data collection, analysis, and graphic presentation. The course provides a useful introduction for advanced courses in computer cartography, in geographical information systems (GIS), and in related courses. This course is also intended to help non-majors who are looking for a basic introduction to map-making and GIS, to learn how to manipulate and display graphics on computers, to illustrate class projects with digital maps and charts, and to learn some basic GIS concepts such as query and map overlay.

Two important concepts in the course involve *digital encoding,* which includes digitization and geoprocessing; and *visualization*, which in this course relates to the role of graphics to analyze as well as illustrate geographical information. Lectures will focus on these topics. A series of exercises and labs using various programs (e.g., ArcGIS, GoogleEarth) will be assigned to demonstrate how these concepts are applied in geography.

## A. Course Format

This course combines traditional instruction organized around classroom lectures, reading material, and computer exercises in a lab format. Labs cover selected topics discussed in lectures and/or reading assignments. A mid-term project will result in a series of maps for a government agency and a final project will be peer-reviewed and submitted to the North American Cartographic Information Society (NACIS) Student Map and Poster Competition.

## B. Course Requirements

Students will be evaluated according to the following:

**Labs & Assignments:**
Four labs, three mapping assignments (practicals), and a reading assignment are designed to provide students with hands-on exposure to various cartographic tools, programs, and techniques presented during lectures and in readings. Labs will mainly utilize mapping software available in the computer lab. Instructions and guides will be provided for completing the labs in the allotted time. Students will be expected to use the lab periods for guidance and assistance in completing the exercises.

GEOG 2500: Intro to GIS & Cartography * Spring 2014

**Quizzes & Exam:**
The first four weeks of class will focus on lecture materials with weekly quizzes and practicals culminating in the only exam of the semester. The purpose of the lectures, quizzes, and exam is to ensure that you understand key cartographic concepts and can relate these concepts to more intensive labs and projects later in the semester.

**Projects & Presentations:**
The mid-term and final will be project-based and each individual is expected to turn in his or her own work. Maps for the mid-term will be presented to the class in a "gallery-type" setting. Maps and data for the mid-term will be provided and you are expected to make changes to the maps based on "client requests." The final project map(s) and data will be independently chosen and created. Maps will be printed and peer-edited first, followed by a presentation to the class during the scheduled final exam time.

| COURSE REQUIREMENTS & GRADING | |
|---|---|
| Quizzes | 30 points (10 points each) |
| Practicals | 30 points (10 points each) |
| Exam | 50 points |
| Lab Exercises | 80 points (20 points each) |
| Reading Assignment | 30 points |
| Mid-term Project | 80 points |
| Final Project | 100 points |
| TOTAL | 400 points |

## C.  Readings

Students are expected to complete all required readings that are assigned periodically throughout the semester. A specific assigned reading during the semester will require a 2-page (double-spaced, Times New Roman, 1" margins) summary.

## D.  Grading Policy

Grading will follow the ETSU grading scale. Deadlines for the assignments and projects are strictly enforced and points will be deducted for each day an assignment is late. There is no extra credit, make-up, or late assignment policy.

| Scale | Point Equivalent | Grade |
|---|---|---|
| 95.0-100 | 380-400 | A |
| 92.0-94.9 | 368-379 | A- |
| 89.0-91.9 | 356-367 | B+ |
| 86.0-88.9 | 344-355 | B |
| 83.0-85.9 | 332-343 | B- |
| 80.0-82.9 | 320-331 | C+ |
| 77.0-79.9 | 308-319 | C |
| 74.0-76.9 | 296-307 | C- |
| 71.0-73.9 | 284-295 | D+ |
| 68.0-70.9 | 272-283 | D |
| <67.9 | <272 | F |

### E. Class Policies

The following policies guide this course

- Silence cell phones while in the class room.
- Respect your classmates and instructor by being on-time and prepared for class.
- Always ask questions!
- No food allowed in the class room.
- If you miss a class for any reason, you are responsible for any assignments and/or obtaining the information discussed in class.

## 2. Technology Requirements, Communications, and Support

This course is **technology intensive** and will require you to use technology as a tool for learning. It is your responsibility to familiarize yourself with the technologies.

### A. Student Technology Competency

This course will include computer and online instruction and assignments. You must have computer/internet competency in order to function independently in the course, including the ability to:
- Use a Web browser to access online content;
- Download files, unzip compressed files, and install software;
- Use basic features of word processing and spreadsheets (copy, cut, paste, sort, save files, etc.);
- Use basic mapping tools (e.g., Google Earth, Google Maps, Bing Maps, and/or Yahoo! Maps); &
- Basic data management skills within the Windows 7 or newer operating system (e.g., manage and maintain files).

### B. Technology Support

The GIS lab is open various times throughout the day when another class is not being taught and a **GIS HelpDesk is available in the lab from 1-3pm every day**.  You can check out specific open lab times on this webpage: http://www.etsu.edu/cas/geosciences/facilities.aspx

For technical support with a University related technical problem, contact the Office of Information Technology (OIT) at http://www.etsu.edu/oit/.

### C. Accommodations for Disabilities

If you have a disability that may impact your work in this class and may require accommodations, please inform the instructor and contact Disability Services through the following webpage: (http://www.etsu.edu/students/disable/)

## 3. Academic Responsibility

As a student at East Tennessee State University, you have acknowledged the standards that have been defined in the Student Code of Conduct, and thus you have agreed to adhere to its tenets.

## A. Plagiarism

Students are responsible for submitting work that reflects their individual performance. Misrepresentation of your own work either through plagiarism, collusion, or data distortion is a serious breach of the code of student conduct. If you have any questions on what constitutes plagiarism, review it in the ETSU Student Handbook.

## 4. *Tentative* Lecture/Reading/Lab/Project Schedule

| WEEK | Dates | TOPICS & READINGS | ASSIGNMENTS |
|------|-------|-------------------|-------------|
| 1 | Jan 17 | Introduction & Exploring Maps | |
| 2 | Jan 22/24 | Lectures: Map History, Thematic Map Design, & Data Input | |
| 3 | Jan 27/29/31 | Lectures: Choropleth Mapping, Color, Thematic Elements, Dot Maps, & Proportional Symbols | Quiz 1 & Practical 1 |
| 4 | Feb 3/5/7 | Lectures: Hierarchy, Symbolization, Typographics, Label Placement, & Exploring Software | Quiz 2 & Practical 2 |
| 5 | Feb 10/12/14 | Colors, Review, & **Exam (Friday, February 14th)** | Quiz 3 & Practical 3 & Exam |
| 6 | Feb 17/19/21 | Emergency Management Basemap (Lab 1) | |
| 7 | Feb 24/26/28 | Emergency Management Basemap (Lab 1) | Lab 1 Due |
| 8 | Mar 3/5/7 | Georeferencing and Digitizing (Lab 2) | Lab 2 Due |
| 9 | Mar 10-14 | Spring Break | |
| 10 | Mar 17/19/21 | Mid-Term Lab Time | |
| 11 | Mar 24/26/28 | Mid-Term Project Gallery **(Mar 26th)** & Topographic Maps | Mid-Term Project Due |
| 12 | Mar 31/Apr 2/4 | Topographic Maps & Digital Elevation Models (Lab 3) | |
| 13 | Apr 7/9/11 | Assigned Readings & Final Project Overview; *No class on April 9th and 11th (Geography Conference)* | Lab 3 Due |
| 14 | Apr 14/16/18 | Map Projections & Coordinate Systems | Reading Summary & Lab 4 Due |
| 15 | Apr 21/23/25 | Final Project Lab Time & Trends in Mapping | |
| 16 | Apr 28/30/May 2 | Final Project Gallery and Peer Evaluations **(May 2nd)** | |
| 17 | **May 3-8** | **Exam Week - Final Project Presentation** | **Final Project Due** |

*The course schedule, required readings, and procedures described in the syllabus are subject to change. Students will be informed of any such changes via the D2L course site and/or via email.*

GEOG 2500: Intro to GIS & Cartography * Spring 2014