

Geol 1445/2449 Intro to GIS, GPS, and Computer Methods

1. **Objective:** The goal of this course is to gain expertise in the methods of Geographic Information Systems using GIS software on computer workstations. No previous computer classes are required. Students will be graded on the basis of *approximately* 8 computer assignments, a project (for students taking GEO2449), midterms and a final exam. This course is a core course for the undergraduate GIS Certificate

2. **Required Text:** *There is no textbook required for this course.*

*For some details related to our work, please check our syllabus and the link to the book “Getting to Know ArcGIS Pro” by ESRI press. You can access this book for free via the University Library Service (ULS). Please note that we may refer to this book as a reference only, no exercises from the book will be completed. Our work will use on-line course resources and the Virtual Computer laboratory provided by the University of Pittsburgh. **You do not need to install any software on your computer!** We have everything needed in the University of Pittsburgh Virtual Computer Laboratories.*

3. **Lecture Time and Office Hours:** Class is held on Mondays and Wednesdays 4:00 PM to 5:15 PM, check course catalog for location. Office Hours are Mondays and Wednesdays in 504 SRCC for the instructor between 1:00 PM to 2:00 PM or by appointment. My email is harbert@pitt.edu. We have an excellent TA who also has office hours and is available to help you.

4. **Course Requirements:** Lecture materials will provide the information for examinations. Broad PDFs of the lecture notes will be posted on courseweb. Class attendance will be beneficial to acquire the remaining information not covered in the class. The text will contain this information as well. The text will be the base for all assignments. Graduate students will be required to complete additional assignments. The assignments will be discussed in class and posted on courseweb. The exam format will be discussed later.

5. **Grading:** The final grade will be calculated from 2 exams and up to 8 assignments. The undergraduate section will be weighted as such, 20% each Midterm exam, 20% Cumulative final, and 60% Assignments. The Graduate section will be weighted as, 20% Midterm exam, 30% Cumulative final with take home portion, 40% Assignments, and 10% PowerPoint based presentation of project. Assignments are important and must be turned in during class.

6. **Website:** courseweb.pitt.edu will contain this course. All assignments, lecture notes, and study guides will be posted. The format of documents will be in Word or PowerPoint. Check courseweb.pitt.edu for announcements such as newly posted material, exam times, and class cancellations.

7. **Disability:** If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union 412-624-7890 as early as possible in the term.

8. **Academic Integrity:** All students are expected to adhere to the Academic Integrity Policy of the University pertaining to cheating and plagiarism. Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, noted below, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz, exam or paper will be imposed.

9. **Schedule (Please do not begin any home works until assigned by an email. Always continue to recheck our course web site as lectures, homeworks and schedules change. Please note this schedule is subject to change, always refer to our courseweb site for the most up to date information.**

This Schedule is a guide for the class and may be subject to change!

Topic/Required Reading	Assignment #	Approximate Date Due
Introduction, Information basics, Spatial and Attribute Data, Raster and Vector data, Types of Maps, Optional reference book Chapter 1	1	Week 1
Global Positioning Systems, Map Projections, and Earth Shape Models / Optional reference book Chapters 2 & 3	2	Week 2
Symbology, Mapping Analysis/ Optional reference book Chapters 4-7	3	Week 3
Symbology Map Construction, Information Channel. Continued	4a	Week 3
Record Matching, SQL, Attribute based GIS analysis, 4D GIS, Labeling & Data Types Optional reference book Chapters 8-9 Review	4b	Week 4
Database summary, Course review,		Week 5
Midterm around Week 5 or 6		
Spatial Data Analysis/ Optional reference book Chapters 10-12	5	Week 6
GIS Project Workflows, Project approach success and failure, Creating & Editing Data/ Optional reference book Chapters 13-14	6	Week 7
Python overview, Presentations of GIS and Model Builder/ Optional reference book Chapters 15-17	7	Week 8

Graduate Section GIS/Field Data/GEOTRANS Homework	8	Day of Final
Final Graduate Section Project PowerPoints	9	Day of Final
Final		

In this course, students, faculty and guests represent diverse perspectives, backgrounds, and experiences, which enriches our classes. Individuals of all races, colors, ancestries, sexes, marital status, familial status, ages, backgrounds, beliefs, ethnicities, gender identities and expressions, national origins, religious or political affiliations, sexual orientations, abilities, and other visible and nonvisible differences are welcomed. Every person in this classroom should feel responsible for creating a space that is intellectually rigorous and is a respectful, welcoming and inclusive environment for every individual. We urge all to be mindful of the ways that our identities position us in the classroom. While intellectual disagreement may be constructive, no harsh statements, or demeaning or discriminatory behavior will be permitted. If you feel uncomfortable, please feel free to approach me to discuss the situation.

In this class, we will have the chance to indicate the name that we prefer to be called and, if we choose, to identify pronouns with which we would like to be addressed. I will do my best to address and refer to all students accordingly and support classmates in doing so as well. I will endeavor to use gender-inclusive and nondiscriminatory language in all course communication and materials. Your suggestions for how to improve the effectiveness of the course for you personally or for other student groups are encouraged and appreciated. Our faculty is committed to communication from students without judgement. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.