

COURSE OUTLINE		
TERM: SPRING 2026	COURSE NO: GEOG 225	
INSTRUCTOR:	COURSE TITLE: INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS	
OFFICE: LOCAL: E-MAIL:	SECTION NO:	CREDITS: 4.0
OFFICE HOURS:		
COURSE WEBSITE:		

Capilano University is named after Chief Joe Capilano (1854–1910), an important leader of the Skwxwú7mesh (Squamish) Nation of the Coast Salish Peoples. We respectfully acknowledge that our campuses are located on the unceded territories of the səliłwətał (Tsleil-Waututh), shíshálh (Sechelt), Skwxwú7mesh (Squamish), and xʷməθkʷəy̓əm (Musqueam) Nations.

### COURSE FORMAT

Four hours of class time and two hours of lab time for a 15-week semester, which includes two weeks for final exams.

### COURSE PREREQUISITES

None

### CALENDAR DESCRIPTION

This introductory Geographic Information Systems (GIS) course studies the concepts, theories, and techniques of using a GIS to solve spatial problems in both the natural and social sciences. Understanding and the application of spatial data will be key to this course. Some topics that will be covered include: the components and types of spatial data, analyzing spatial data, spatial data models, creating maps and project design with emphasis on solving local spatial problems or questions. Students will gain hands-on experience with professional GIS applications.

### COURSE NOTES

GEOG 225 is an approved Science and Technology course for Cap Core requirements.

GEOG 225 is an approved Quantitative/Analytical course for baccalaureate degrees.

GEOG 225 is an approved Laboratory Science course.

GEOG 225 is an approved Science course.

GEOG 225 is an approved Numeracy course for Cap Core requirements.

### REQUIRED TEXTS AND/OR RESOURCES

A book similar to the following (depending on the software chosen for the course):

- Campbell, Jonathan and Shin, Michael. 2011. *Essentials of Geographic Information Systems*. Saylor academy. Available online: <https://open.umn.edu/opentextbooks/textbooks/67> You can also purchase a print copy in the Capilano University bookstore.
- Law, Michael and Collins, Amy. 2021. *Getting to Know ArcGIS Pro 2.8* Fourth Edition. Redlands, California: ESRI press.

**Required and Recommended IT Resources**

To participate in this course, you will need to have access to a laptop or computer, and Wi-Fi. A computer capable of running GIS software is recommended for lecture and lab exercises.

You may also want to download the eLearn app to your smartphone. If you need technology support, please contact: [askit@capilanou.ca](mailto:askit@capilanou.ca)

**COURSE STUDENT LEARNING OUTCOMES****On successful completion of this course, students will be able to do the following:**

- Comprehend basic map elements such as: scale, coordinate systems and projections.
- Apply raster and vector data and how to perform basic spatial analysis (measurements, query, buffer, surface analysis etc.) on those data types.
- Use and edit attribute data, create relational databases, link attribute and spatial data.
- Create well designed maps using proper map components, cartographic symbolism and classification.
- Design a project, including finding municipal spatial data and solving spatial problems.

**Students who complete this Science and Technology course will be able to do the following:**

- Apply numerical and computational strategies to solve problems.
- Assess the cultural, economic, and political effects of technology.
- Assess the impacts of human activity on natural systems and articulate ways in which environmental sustainability may be achieved.
- Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).
- Demonstrate how a problem, concept, or process can be modelled numerically, graphically, or algorithmically.
- Explain how scientific inquiry is based on investigation of evidence and evolves based on new findings.
- Participate in scientific inquiry and communicate the elements of the process, including making careful and systematic observations, developing and testing a hypothesis, analyzing evidence, and interpreting results.

**Students who complete this Numeracy course will be able to do the following:**

- Apply both analytical and numerical skills to solve problems.
- Summarize and analyze data in quantitative forms.
- Interpret and draw conclusions from an analysis of quantitative data.
- Represent quantitative information in a variety of forms (e.g. symbolically, visually, numerically, and verbally).
- Incorporate quantitative evidence in support of an argument.

**COURSE CONTENT**

The following information provides a general topic guide to the lecture and lab topics for the course. Detailed readings, lecture outlines, and labs for each day will be accessible from the course website. Lecture and lab material will be tightly integrated.

Date	Lecture Content	Lab Content
Week 1	Introduction	Interacting with maps
Week 2	Map Anatomy	Interacting with data
Week 3	Data and Information	Symbolizing features
Week 4	Spatial Models for GIS	Making maps for presentation
Week 5	Data Management	Classifying features
Week 6	Attribute Data Analysis	Lab Test/Lab Review
Week 7	Midterm/Project Consultation	Joining and relating data
Week 8	Vector Data Analysis	Creating features
Week 9	Raster Data Analysis	Editing features
Week 10	Cartographic Principles	Querying data
Week 11	Project Design	Analyzing spatial data
Week 12	Term Project	Term Project
Week 13	Term Project	Term Project
Weeks 14-15	Final Exam Period	

### EVALUATION PROFILE

Lecture Tests and Quizzes	20-50%*
Labs + Lab Tests	20-50%*
Projects	<u>20-50%*</u>
Total	100%

\* No single assignment will be worth more than 35%

**NOTE: A passing grade (50% or more) is required on both the lab and lecture portions of the course for the student to obtain a passing grade for the entire course.**

### Exams

Exams will test material covered in the textbook, online videos, and the lecture portion of the course.

### GRADING PROFILE

A+ = 90-100	B+ = 77-79	C+ = 67-69	D = 50-59
A = 85-89	B = 73-76	C = 63-66	F = 0-49
A- = 80-84	B- = 70-72	C- = 60-62	

### Incomplete Grades

Grades of Incomplete "I" are assigned only in exceptional circumstances when a student requests extra time to complete their coursework. Such agreements are made only at the request of the student, who is responsible to determine from the instructor the outstanding requirements of the course.

**Late Assignments**

This course includes lab activities, lab tests, and assignments related to both lecture and lab components. Students are expected to complete all labs and assignments by the stated deadlines. Late submissions may be penalized unless prior approval has been granted.

Lab tests will assess your understanding of lab material. These tests are open book, and you are encouraged to keep your lab notes organized and accessible during the assessments.

**NOTE: Some lab assignments may require the use of campus-only equipment or facilities (e.g. GIS lab computers). Details about when and where to access these resources will be shared in advance of the required in-person session.**

**Missed Exams/Quizzes/Labs etc.**

Except in unusual circumstances, missed exams, quizzes, labs or assignments cannot be repeated or made-up. If permission is granted, a make-up exam or lab quiz must be completed within one week of returning to class.

**Attendance**

Students are expected to attend online and campus classes and are responsible for all assigned materials and activities during the class.

**English Usage**

Students are expected to proofread all written work for any grammatical, spelling and stylistic errors. Faculty may deduct marks for incorrect grammar and spelling in written assignments and, if they are excessive, may result in a refusal to grade the assignment.

**Electronic Devices**

Students may not use electronic devices during quizzes or exams unless permitted by the instructor.

**On-line Communication**

Outside of the classroom, instructors will communicate with students using either their official Capilano University email or eLearn; please check both regularly. Official communication between Capilano University and students is delivered to students' Capilano University email addresses only.

**UNIVERSITY OPERATIONAL DETAILS****Tools for Success**

Many services are available to support student success for Capilano University students. A central navigation point for all services can be found at: <https://www.capilanou.ca/student-services/>

**Capilano University Security: download the [CapU Safe Alert App](#)**

**Policy Statement (S2009-06)**

Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Academic Integrity, Academic Probation and other educational issues. These and other policies are available on the University website.

**Academic Integrity (S2017-05)**

Any instance of academic dishonesty or breach of the standards of academic integrity is serious and students will be held accountable for their actions, whether acting alone or in a group. See policy and procedures S2017-05 Academic Integrity for more information:

<https://www.capilanou.ca/about-capu/governance/policies/>

Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances, are prohibited and will be handled in accordance with the Student Academic Integrity Procedures.

**Academic dishonesty** is any act that breaches one or more of the principles of academic integrity. Acts of academic dishonesty may include but are not limited to the following types:

**Cheating:** Using or providing unauthorized aids, assistance or materials while preparing or completing assessments, or when completing practical work (in clinical, practicum, or lab settings), including but not limited to the following:

- Copying or attempting to copy the work of another during an assessment;
- Communicating work to another student during an examination;
- Using unauthorized aids, notes, or electronic devices or means during an examination;
- Unauthorized possession of an assessment or answer key; and/or,
- Submitting of a substantially similar assessment by two or more students, except in the case where such submission is specifically authorized by the instructor.

**Fraud:** Creation or use of falsified documents.

**Misuse or misrepresentation of sources:** Presenting source material in such a way as to distort its original purpose or implication(s); misattributing words, ideas, etc. to someone other than the original source; misrepresenting or manipulating research findings or data; and/or suppressing aspects of findings or data in order to present conclusions in a light other than the research, taken as a whole, would support.

**Plagiarism:** Presenting or submitting, as one's own work, the research, words, ideas, artistic imagery, arguments, calculations, illustrations, or diagrams of another person or persons without explicit or accurate citation or credit.

**Self-Plagiarism:** Submitting one's own work for credit in more than one course without the permission of the instructors, or re-submitting work, in whole or in part, for which credit has already been granted without permission of the instructors.

**Prohibited Conduct:** The following are examples of other conduct specifically prohibited:

- Taking unauthorized possession of the work of another student (for example, intercepting and removing such work from a photocopier or printer, or collecting the graded work of another student from a stack of papers);
- Falsifying one's own and/or other students' attendance in a course;
- Impersonating or allowing the impersonation of an individual;
- Modifying a graded assessment then submitting it for re-grading; or,
- Assisting or attempting to assist another person to commit any breach of academic integrity.

### **Sexual Violence and Misconduct**

All Members of the University Community have the right to work, teach and study in an environment that is free from all forms of sexual violence and misconduct. Policy B401 defines sexual assault as follows:

Sexual assault is any form of sexual contact that occurs without ongoing and freely given consent, including the threat of sexual contact without consent. Sexual assault can be committed by a stranger, someone known to the survivor or an intimate partner.

Safety and security at the University are a priority and any form of sexual violence and misconduct will not be tolerated or condoned. The University expects all Students and Members of the University Community to abide by all laws and University policies, including B.401 Sexual Violence Policy and B.401.1 Sexual Violence Procedure (found on Policy page <https://www.capilanou.ca/about-capu/governance/policies/>)

**Emergencies:** Students are expected to familiarise themselves with the emergency policies where appropriate and the emergency procedures posted on the wall of the classroom.

### **DEPARTMENT OR PROGRAM OPERATIONAL DETAILS**

#### **Study Time**

Because this course has a lab component, the amount of required study time will be greater than a regular three-credit course. Additional study time may also be required if a student's background in math and science needs to be reviewed or upgraded.