GEOG-251 – Quantitative Geography

University Arts and Science

Effective Term & Year: Fall 2022
Course Outline Review Date: 2025-03-01

Program Area: Math and Sciences

Description:

This course will introduce methods for collecting, analyzing, and reporting geographic data. Course topics include gathering samples, describing data and theoretical distributions, testing significance, and exploring spatial relationships. Real-world examples from both physical and human geography as well as other related subject areas will provide a foundation for more advanced courses and applications. All lab activities are computer based using statistical software.

Program Information:

This course can be used as either a required course or an elective in several University Arts and Sciences Programs. Refer to the College Program Guide for additional information.

Delivery Methods: On-campus (Face-to-Face)

Credit Type: College of the Rockies Credits

Credits: 3

Course type/s: Social Sciences, Sciences

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	45
Seminar/Tutorials	
Laboratory/Studio	45

Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	90

Course Requisites:

- Completed the following:
    - GEOG101 – Introduction to Physical Geography 1 (3)

Flexible Assessment: Yes

In some cases students may be able to apply for recognition of prior learning outside the classroom. This flexible assessment process provides equivalent course credit. It is a rigorous process that may include external evaluation, worksite assessment, demonstration, standardized test, self-assessment, interview, products/portfolio, and challenge exam, or other measures as appropriate. Tuition fees apply. Contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see https://www.bctransferguide.ca/ or https://transferalberta.alberta.ca . For more transfer credit information, please visit https://www.cotr.bc.ca/Transfer

All requests for course transfer credit from institutions in British Columba or elsewhere should go to the College of the Rockies Enrolment Services office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

McGrew, J., Lembo, A., Monroe, C. (2014). *An Introduction to Statistical Problem Solving in Geography*, 3rd Edition. Waveland Press. ISBN-13: 978-1-4786-1119-6

Please see the instructor's syllabus or check COTR's online text calculator https://textbook.cotr.bc.ca/ for a complete list of the currently required textbooks.

Learning Outcomes:

Upon the successful completion of this course, students will be able to:

- explain the role of quantitative information in geographic research and applications;
- demonstrate understanding of basic descriptive statistics and regression methods as they apply to problem solving;
- evaluate the roles of probability theory and sample distributions in drawing inferences about populations based on samples;
- identify when and where statistical procedures are appropriate for real-word applications;
- produce figures, tables, and maps to display data results;
- design and implement quantitative analysis projects for problem solving; and
- demonstrate competence in using statistical software tools for data analysis (e.g. Excel, R, SPSS).

Course Topics:

- Defining quantitative geography
- Scientific research
- Types of data
- Descriptive statistics
- Distributions
- Probability
- Elements of sampling
- Inferential problem solving
- Inferential spatial statistics
- Non-parametric statistics
- Correlation and regression
- Basic figures, tables, and maps

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Lab Assignments	40%
Term Project	10%
Midterm(s)	20%
Final	30%

Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Pass requirements: A passing average (50% or higher) in both the theory and practical components.

Evaluation Notes: A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a "0" on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at https://cotr.bc.ca/about-us/college-policies/ and include the following:

- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.5.8 Academic Performance
- Policy 2.5.3 Grade Appeal
- Policy 2.4.9 Student Concerns Re Faculty

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.