GEOG-212 – Advanced Studies in Geographic Information Systems

University Arts and Science

Effective Term & Year: Fall 2022
Course Outline Review Date: 2022-09-01

Program Area: Math and Sciences

Description:

The prerequisite course (GEOG 211) provided a foundational introduction to the field of Geographic Information Systems (GIS); this course covers advanced applications of GIS. Lecture topics covered include cost-benefit analysis, application of fuzzy logic modeling, uncovering spatial trends and patterns, professional map design and GIS project management. Lab sessions will apply lecture topics through hands-on experience with industry standard GIS software.

Program Information:

This course can be used as either a required course or an elective in several University Studies 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: Sciences

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	30
Seminar/Tutorials	
Laboratory/Studio	60

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

Course Requisites:

- Completed the following:
  - GEOG211 – Introduction to Geographic Information Systems (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 other BC institutions, please see http://www.bctransferguide.ca. All requests for course transfer credit from institutions in BC or elsewhere should go to the College of the Rockies Enrollment 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:

Heywood, I., Cornelius, S. & Carver, S. (2011). *An Introduction to Geographical Information Systems, 4/E,* Pearson

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:

- Locate spatial data sources and access data quality
- Develop new data sets
- Design spatial databases
- Build GIS workflow models
- Process and interpret remotely sensed imagery
- Apply cost-benefit analysis
- Investigate spatial trends and patterns
- Apply geoprocessing tools to solve problems
- Design professional paper and digital map outputs
- Apply GIS project management principles and tools

Course Topics:

- Spatial Data Editing
- Cartography and Digital Mapping
- Remove Sensing
- GIS Model Building
- Database Management and Query
- Trends and Pattern Analysis
- Fuzzy Logic Modeling
- Web and Mobile GIS
- Modifiable Areal Unit Problem
- GIS Project Planning

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	50%
Midterms	20%
Final Exam	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

No pass requirements available.

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 2.4.8 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.