GEOGRAPHY FINALCOURSE OUTLINE: FALL 2017
GEOGRAPHY 339
H (3-2)

Analytical Methods in Geography I

Section	Days	Time	Location
LEC 01	MoWeFr	13:00 -13:50	SH 268
LAB 01	Fr	10:00 -11:50	SS 018

Instructor: John Yackel	Office: ES 444
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Please note: The emergency evacuation assembly point for classes taught in Scurfield Hall is Education Block Food Court and classes taught in Social Sciences is Professional Faculties building.

Official Course Description: The field of Geography is marked by diversity in subject matter, which includes physical (environmental), human (socio-economic), and integrated (human-physical) topics of inquiry. It is therefore not surprising to learn that there exists a variety of analytical methods which geographers employ. This course serves as an introduction to these analytical approaches, taking you from the collection and presentation of geographic data to analysis and interpretation. The course is targeted for undergraduate students in geography and related disciplines with limited backgrounds in statistical approaches to geographic problem solving. Analytical examples and problem solving will involve the use of statistical computer packages. Students will leave this course with knowledge and experience in 'stats' and an appreciation for how they are applied to geographic issues.

Course Objectives:
The primary objective of this course is to introduce and explain introductory concepts of quantitative methods for use in a wide range of geographic analyses.

Course Learning Outcomes:
The Department of Geography is committed to student knowledge and skill development. The table below lists the key learning outcomes for this course, the program-learning outcomes they facilitate and the expected level of achievement.

Course Learning Outcomes	PLO(s)	Level(s)
Distinguish and compare basic data characteristics, concepts, and strategies for preparation and display	3,6	1,2
Distinguish, compare and be able to apply basic descriptive statistics: central tendency, dispersion, etc	3,6	1,2
Explain the probabilistic underpinnings of inferential statistics: basic probability theory, probability distribution functions, problem-solving	3,5,6,7	1,2
Explain and be able to apply the framework for both classical and p-value hypothesis testing	3,6,7	1
Identify and interpret a variety of statistical tests wielded in an inferential, hypothesis-testing framework	3,5,6	1
Describe the basic concepts of simple bivariate regression, and set the stage for more advanced regression analyses in subsequent courses	3,6	1
Explain the particular challenges associated with quantitative analysis of spatial data: MAUP, autocorrelation, boundary issues, scale, etc	3,6,7	1,2

Apply a variety of descriptive statistics and graphics to Geographic data for the purpose of summarizing the salient ideas.	3,5,6,7	1,2
Explain and apply the concept of probability; list probability distribution types; explain components and utility of the normal distribution and central limit theorem	3,6,7	1,2
Explain basic concepts in estimation and apply towards confidence interval generation; probability sampling concepts, types and size selection	3,5,6,7	1
Explain and apply terms and concepts in hypothesis testing; one, two and three or more sample difference of means parametric (and non-) tests; p-value	3,5,6,7	1
List, explain and apply inferential categorical difference tests and spatial sampling techniques to geographic data	3,5,6	1
Explain and apply tests appropriate to evaluate the statistical relationship between variables (both parametric and non-parametric tests).	3,5,6,7	1
Explain the concept of multivariate regression, spatial autocorrelation; multicollinearity and residual analysis	3,5,6,7	1

PLOs = Program Learning Outcomes: 1 = reflect and communicate diverse human-environment perspectives, 2 = identify and explain human-environment processes, 3 = implement sampling, data collection, analyses and communication methods, 4 = analyze spatial and temporal aspects of human-environment systems, 5 = employ knowledge, arguments, and methodologies for solving human-environment problems, 6 = evaluate geospatial data and manipulate it to create cartographic products, 7 = communicate geographic concepts using oral, written, graphic, and cartographic modes, and 8 = demonstrate literacy skills. **Levels:** (1) Introductory, (2) Intermediate, (3) Advanced.

Prerequisites: Geography 231

Supplementary Fees: No supplementary fee has been assessed for this course.

Text(s)/Readings:
An Introduction to Statistical Problem Solving in Geography, 3rd edition by J. Chapman McGrew Jr., A.J. Lembo Jr., and Charles B. Monroe, published by Waveland Press Inc, 2014.

Grading (Weighting):

In-class Test (2 test, 15% each)	30%
Laboratory Assignments (5 assignments, 5% each)	25%
In-class Assignments/Class Participation	5%
Registrar-scheduled Final Exam	40%

There will be a Registrar scheduled final exam for this course.

Grading System:

96-100	A+	77-80	B	59-61	C-
90-95	A	71-76	B-	55-58	D+
86-89	A-	65-70	C+	50-54	D
81-85	B+	62-64	C	0-49	F

For additional detailed course information posted by the Instructor Desire2Learn at https://d2l.ucalgary.ca/d2l/home

Human subjects
Students are expected to participate as researchers for in-class assignments

USRI
At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Writing across the Curriculum
Writing skills are not exclusive to English courses and, in fact, should cross all disciplines. The University supports the belief that throughout their University careers, students should be taught how to write well so that when they graduate their writing abilities will be far above the minimal standards required at entrance. Consistent with this belief, students are expected to do a substantial amount of writing in their University courses and, where appropriate, members of faculty can and should use writing and the grading thereof as a factor in the evaluation of student work. The services provided by the Writing Support Services can be utilized by all undergraduate and graduate students who feel they require further assistance.

Principles of Conduct
The University of Calgary Calendar includes a statement on the Principles of conduct expected of all members of the University community (including students, faculty, administrators, any category of staff, practicum supervisors and volunteers) whether on or off the University's property. This statement applies in all situations where the members of the University community are acting in their University capacities. All Members of the University Community have a responsibility to familiarize themselves with this statement which is available at: http://www.ucalgary.ca/pubs/calendar/current/k.html

Internet and electronic communication device information:
No restriction on the use of laptops and tablets in class if they are used to take notes or find information relevant to the class, and if there is *no disturbance or distraction of other students or the instructor.* Phones must be turned off during class time unless you are a health care or law enforcement professional with appropriate ID.

Plagiarism
Academic dishonesty is not an acceptable activity at the University of Calgary and students are **strongly advised** to read the Student Misconduct section in the University Calendar. Quite often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are 1) presenting another student's work as your own 2) presenting an author's work or ideas as your own without proper referencing and 3) using work completed for another course. This activity will not be tolerated in this course and students conducting themselves in this manner will be dealt with according to the procedures outlined in the calendar: http://www.ucalgary.ca/pubs/calendar/current/k-5.html

Academic Accommodations:
Students needing an accommodation because of a Disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities. The procedure can be found at:
ucalgary.ca/policies/files/policies/student-accommodation-policy

Students needing an accommodation based in relation to their coursework or to fulfil requirements for a graduate degree, on a Protected Ground other than Disability, should communicate this need, preferably in writing to their instructor or the appropriate Associate Dean or Department Head.
ucalgary.ca/policies/files/policies/student-accommodation-policy

Students needing an Accommodation unrelated to their coursework or the requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Vice-Provost (Student Experience).

Freedom of Information and Protection of Privacy

FOIP: The Freedom of Information and Protection of Privacy (FOIP) legislation disallows the practice of having students retrieve assignments from a public place, e.g., outside instructor's office, the department office, etc. Term assignments will be returned to students individually, during class or during the instructor's office hours; if students are unable to pick up their assignments from the instructor, they provide the instructor with a stamped, self-addressed envelope to be used for the return of the assignment.

Re: Posting of Grades and Picking-up of Assignments

- All assignments will be handled through D2L or personally.
- Their own grades will be available to each student on D2L by password access. Grades will **not** be available at Geography's main office.

Contact Information for Student and Faculty Representation

- SU VP Academic Phone: 220-3911 and e-mail: suvpaca@ucalgary.ca
- SU Faculty Rep. Phone: 220-3913 and e-mail: arts1@ucalgary.ca

The students ombudsman office information can be found at:
http://www.su.ucalgary.ca/page/affordability-accessibility/su-structure/contact-info

Campus Safewalk

Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day, to any location on Campus including the LRT, parking lots, bus zones and University residences. Contact Campus Security at 220-5333 or use a help phone, and Safewalkers or a Campus Security officer will accompany you to your Campus destination.

Faculty of Arts Program Advising and Student Information Resources

- Have a question, but not sure where to start? The new Faculty of Arts Students Centre is your information resource for everything in Arts! Drop in at SS 102, call us at 403-220-3580 or email us at ascarts@ucalgary.ca you can also visit the Faculty of Arts website at http://arts.ucalgary.ca/undergraduate which has detailed information on common academic concerns.

- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at (403) 210 7625 or visit them at the MacKimmie Library Block.

Contact for Students Union Representatives for the Faculty of Arts:
arts1@su.ucalgary.ca, arts2@su.ucalgary.ca, arts3@su.ucalgary.ca, arts4@su.ucalgary.ca