

Geography 203

Introduction to Geographic Information Systems

Course Description

This course offers an introduction to basic concepts and techniques of geographic information systems (GIS) used for descriptive geostatistical analysis and visualization of spatial data. Operational training in GIS is included; students should be very comfortable with Windows. Students will apply their acquired skills in a final project.

Instructor Dr. Julia Siemer

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Office Hours Monday, Wednesday 11:00 am–12:00 noon or by appointment

Textbook JENSEN, John R and JENSEN, Ryan R (2013): *Introductory Geographic Information Systems*. Pearson. Boston ISBN 978-0-614776-3

Available at the University Bookstore

URCourses Selected course materials will be made available on URCourses. Check also on URCourses for up-dated class information. If you choose to use a third party e-mail account for communication, please forward your U of R e-mails to this account. Please specify meaningful subjects for all e-mails.

Lecture Time Monday, Wednesday, Friday at 9:30 am–10:20 am: CL 317
(Lab sessions on Wednesday and Friday at 19:30 am–10:20 am: CL 109)

Prerequisites Any 100-level GEOG course or permission of department head

Other materials USB memory stick for lab materials and assignments

Attendance policy Attendance at all times is recommended. Attendance at **ArcGIS demonstration and labs sessions is mandatory** and will be checked randomly.

Evaluation	ArcGIS-Exercises (6; each 5%; required)	30%
	Quiz (Sept 22, 2017; required)	5%
	Midterm Exam (Nov 01, 2017; required)	40%
	GIS project (Due date: Dec 04, 2017; required)	<u>25%</u>
		100%

Knowledge and Effort

This course requires computer file management skills and the ability to work within a Windows computer environment without assistance. Students are expected to spend considerable time developing thoughtful products, as well as conducting limited research to feed into their written assignments.

Students must demonstrate a mature, professional, and conscientious effort toward class work and participation.

In addition to class hours, students should expect an average weekly workload of 1.5 hour for readings and up to 2 hours of individual (computer) work (depending on previous experience with ArcGIS or similar products).

Late assignments and missed examinations

All assignments/labs, projects and exams are required. A missed or late assignment or exam results in a grade of NP for the course. Due dates for assignments/labs will be specified. **Assignments/labs or projects that are submitted late will be penalized 10% per day** (including weekends, starting with the due day). Assignments/labs or project components submitted **more than 3 days late are not accepted** and result in a grade of NP for the course. A missed exam can normally not be written at a later time.

(See also section Accommodations)

Accommodations

Any student with a disability who may need accommodations should discuss these with the course instructor after contacting the Coordinator of the Disability Resource Office at 585-4631.

If you are **unable to complete an assignment, midterm examination or the final project** for compassionate or health reasons, contact the instructor **as soon as possible**. A medical certificate from an attending physician must accompany the request if the reason is medical. For other reasons, such evidence as is appropriate should be provided.

Recording of lectures

Students must be aware of two issues regarding audio, image or video recording of lectures. First, a lecture/lab is considered the intellectual property of the instructor, and copyright guidelines and regulations apply to the recording of lectures. Second, there is a need to protect the privacy of students in the class from being recorded without their knowledge and permission. As such, students in this course may not create recordings of any kind in this class. Any student creating unauthorized recordings will be subject to disciplinary action under §5.13 of the Undergraduate Calendar.

Students requiring recordings as an accommodation for a disability, and who have documentation from the Centre for Student Accessibility, are exempted from this restriction. Students in this position must speak to the instructor prior to recording lectures, and any such recordings are solely authorized for the purposes of individual study. Permission to allow this type of recording is not a transfer of any copyrights in the recording, and the recording may not be reproduced or uploaded to publicly accessible web environments.

Tentative Schedule*

<i>Week</i>	<i>Date</i>	<i>Lecture Topic</i>	<i>Required Readings Chapter (Pages)/ Lab exercises</i>
1	Sept 06	Introduction to the course	--
	Sept 08	What is GIS? History and misconceptions	1 (1-23)
2	Sept 11	Types of geographic data	1 (4-8)
	Sept 13	Models of geographic reality	--
	Sept 15	Data quality and metadata	4 (107-123)
3	Sept 18	Geographic data models and databases	5 (125-146)
	Sept 20	GPS; Data collection and acquisition	3 (55-76)
	Sept 22	Quiz	--
4	Sept 25	Canadian Census; Standard Geographic Classification	Additional readings
	Sept 27	Group A: Importing data, creating and editing data I	Lab exercise 1
	Sept 29	Group B: Importing data, creating and editing data I	Lab exercise 1
5	Oct 02	Descriptive spatial statistics I	8 (233-244)
	Oct 04	Group A: Importing data, creating and editing data II	Lab exercise 2
	Oct 06	Group B: Importing data, creating and editing data II	Lab exercise 2
6	Oct 09	<i>No class – Thanksgiving</i>	
	Oct 11	Group A: Selecting features, getting information of features	Lab exercise 3
	Oct 13	Group B: Selecting features, getting information of features	Lab exercise 3
7	Oct 16	Descriptive spatial statistics II	8 (233-244)
	Oct 18	Locational Quotient	--
	Oct 20	Spatial analysis I – vector data analysis	6 (149-165)
8	Oct 23	Spatial analysis II – vector data analysis	6 (149-165)
	Oct 25	Group A: Analyzing feature relationships, buffering features	Lab exercise 4
	Oct 27	Group B: Analyzing feature relationships, buffering features	Lab exercise 4
9	Oct 30	Spatial analysis III – advanced spatial analysis	8 (244-255)
	Nov 01	Cartography and GIS	10 (285-296)
	Nov 03	Final project will be handed out – discussion	--
10	Nov 06	Midterm	--
	Nov 08	Group A: Advanced spatial analysis	Lab exercise 5
	Nov 10	Group B: Advanced spatial analysis	Lab exercise 5
11	Nov 13	<i>No class – Remembrance Day</i>	--
	Nov 15	Group A: Presenting your results, map layout	Lab exercise 6
	Nov 17	Group B: Presenting your results, map layout	Lab exercise 6
12	Nov 20	Group A: Work on individual GIS project	--
	Nov 22	Group B: Work on individual GIS project	--
	Nov 24	Group A: Work on individual GIS project	--
13	Nov 27	Group B: Work on individual GIS project	--
	Nov 29	Group A: Work on individual GIS project	--
	Dec 01	Group B: Work on individual GIS project	--
14	Dec 04	Due date Final Project (CL 329)	--

* subject to change, check URCourses calendar for up-dates