HGP 470
GIS and Advanced Cartography for Social Science
Winter 2014

Instructor: Dr Sinisa Vukicevic
Office: Tory 3-115
Telephone: 780-248-5758
E-mail: vukicevi@ualberta.ca
Office hours: By appointment

LECTURES AND LABS
Lectures/Labs: Wednesday 13:00 – 15:50
Location: T1 - 104

COURSE DESCRIPTION
GIS in Social Science is an advanced GIS course aiming to explore the application of GIS in land use planning, health geography, environmental and landscape assessments.

PREREQUISITE
A prerequisite for this course is successful completion of EAS 221. Students who do not have the required prerequisite at the time of taking this course should not expect supplementary professorial tutoring.

COURSE OBJECTIVES
This course merges the theoretical background of GIS in Social Science with original student research.

By the end of the course students should:
• Understand the difference between GIS as a tool and GIS as a science
• Have an understanding of the application of GIS within different aspects of social science
• Learn to analyse critically main topics in GIS for Social Science literature
• Be familiar with ArcGIS 10 software
• Learn how to perform GIS spatial analysis
• Have basic understanding of the designing of geodatabases for social science

RECOMMENDING READINGS
LECTURE AND LAB STRUCTURE

This course contains four sessions. The first session is an introduction to GIS in social science. The second session is run in seminar format, in which major concepts in GIScience are considered. This session is presented by students. The third session consist of advanced GIS lectures, illustrated with many case studies. The last session is project based, where students perform the results of their own research.

Course Topics

The following is a basic breakdown of the course topics.

Session 1:

Part 1. Introduction to GIS and Social Science
Part 2. Application of GIS
Part 3. Representation of geography phenomena
Part 4. Designing of geo databases
Part 5. Spatial data analysis

Session 2 (students presentations):

The following are possible, weekly seminar topics:

- Geovisualisation
- Geodesign
- The GeoWeb
- Spatial Data Infrastructure
- Integration of Remote Sensing and GIS
- Spatial Statistics
- Public participation GIS/Participatory GIS
- Managing GIS
- Spatial Modeling with GIS
- Spatial multicriteria decision analysis (Only 592 Course)
- Spatial decision support systems (Only 592 Course)

Session 3:

Part 1. GIS and multicriteria analysis
Part 2. Spatial decision support systems

Session 4 (student presentations):

The research projects are as follows:

- GIS in population analysis
- GIS in health geography
- GIS in land use planning (Only 592 Course)
- GIS in environmental assessment
- GIS in landscape assessment
All labs are mandatory. There is no lab report. The project report will indicate the level of knowledge achieved from lab work.

The project will be based on the following main topics:

- GIS in population analysis
- GIS in health geography
- GIS in land use planning
- GIS in environmental assessment
- GIS in landscape assessment

**GRADING**

Student grades will be determined using the following breakdown:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Seminar presentation</td>
<td>10%</td>
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<tr>
<td>Seminar paper</td>
<td>20%</td>
</tr>
<tr>
<td>Project proposal</td>
<td>10%</td>
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<tr>
<td>Project presentation</td>
<td>20%</td>
</tr>
<tr>
<td>Written project report</td>
<td>40%</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
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There is no final examination.

**Seminar Presentation – 10%**

Each student is expected to lecture on one of the major themes of GIScience. Potential topics are as indicated in Session two of Course topics. Seminar presentations are 10 minutes in duration, followed by discussion and student questions. Presenters must use Power Point for their presentation.

**Seminar Paper - 20%**

The seminar paper should be written concisely, with a maximum length of 5 pages; it should contain an abstract, a definition of the topic, major strains of thought and a bibliography. The seminar paper should be submitted in week 5.
Project Proposal - 10%

The students will conduct original GIS research, where the first phase of research is the project proposal. Students are required to submit a research proposal in week 8, containing a synopsis of the research, methodology, data sources, data sets and expected results. The total page length of the proposal is 5-8 pages, including text, diagrams and figures.

Project Presentation - 20%

Each student must give a 20 minute final presentation on his/her research. Presentations must be of conference quality and on Power Point. Project presentations begin in week 9.

Written Project Report - 40%

The report should be in the format of a scientific journal paper. The final project report must be submitted on April 2nd.

Penalties

Late penalties apply for the following:

- Seminar paper
- Project proposal

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<tr>
<th>Time period</th>
<th>Penalty</th>
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<tr>
<td>On or before designated date</td>
<td>No penalty</td>
</tr>
<tr>
<td>One week of late</td>
<td>50% reduction of the original grade</td>
</tr>
<tr>
<td>More than one week late</td>
<td>Paper/report no longer accepted</td>
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Important note: The project report has to be submitted on or before December 4th. Late reports will not be accepted.

Final grades

All assignments and examinations in this course will be given a numerical score. A cumulative course mark will be calculated from those scores, weighted as tabulated above. A final letter grade will be assigned based upon your cumulative mark and my analysis of the class’ cumulative mark distribution.

Final grades will be assigned using a combination of absolute achievement and relative standing in the course, and will remain unofficial until approved by the Faculty Council or its designate (i.e. the department chair).

REPRESENTATIVE EVALUATIVE MATERIAL

Sample materials that are representative of the types of questions that will be used on the final will be available on the course website at least three weeks prior to each exam.

COURSE POLICIES

A Note on Attendance: Learning in this course will take place largely in the lecture sessions. It is highly unlikely that you will do well in this class without attending. Some class notes may be made available on-line to students, but these will not contain the full material covered or presented in class.

Please try to arrive in class on time, so as not to disrupt your colleagues. If you are running late, however, it is better to come to class late than to miss it entirely. Please keep the talking during class down to a minimum; even low voices can be quite disruptive to the students around you.
If students have an issue or question regarding the grading of a seminar, assignment or exam, please provide me with the concern/complaint in writing with the seminar/assignment/exam. I will review the grading and return it to the student with any adjustments deemed necessary.

**PROFESSIONAL PLANNING ACCREDITATION REQUIREMENTS**

The Canadian Institute of Planners, CIP, stipulates specific criteria required for an accredited Planning degree in Canada. The Alberta Professional Planners Institute (APPI) is a professional regulated organization of private and public sector planners practicing in Alberta, the Northwest Territories and Nunavut. Together, the CIP and the APPI mandate specific academic and professional requirements for both an accredited Planning degree and for provisional and professional membership in the provincial and national Planning organizations.

The curriculum plan for this course satisfies the following professional planning degree accreditation requirements as set out by the CIP and which are therefore requirements towards obtaining the accredited Planning degrees offered by the Planning Program at the University of Alberta:

**Written, Oral and Graphic Communication Skills**

- Demonstrated ability to communicate effectively in written, spoken and visual forms
- Drafting of technical, advisory and regulatory reports and other documents used as a basis for decision making
- Capacity for the production of visual communication forms including graphics, plans, drawings and other graphics

**STUDENTS WITH SPECIAL NEEDS**

Specialized Support and Disability Services (SSDS) provides assistance to University students whose disabilities involve any number of conditions affecting mobility, vision, hearing, learning or mental or physical health. Students who require accommodations in this course due to a disability affecting mobility, vision, hearing, learning, or mental or physical health are encouraged to discuss their needs with Specialized Support and Disability Services. Please feel free to talk to me about any matter related to Special Needs.

**RECORDING OF LECTURES**

Audio or video recording of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Recorded material is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the instructor.

**CELL PHONES**

Please turn off cell phones during lectures and labs.

**ACADEMIC HONESTY**

“The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at [www.governance.ualberta.ca](http://www.governance.ualberta.ca)) and avoid any behaviour which could potentially result in suspicion of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.”

“Policy about course outlines can be found in section 23.4(2) of the University Calendar.” [Calendar 23.4(2)a.xi]