University of Wisconsin-Milwaukee  
Department of Anthropology

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<th>Course #</th>
<th>Title</th>
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<td>380</td>
<td>Anthropology Applications in Geospatial Information Science (GIS) (U/G)</td>
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Prereq: Anthropology class; Junior standing; Instr cons. A basic understanding of geographic information systems will be useful but not necessary.

Instructor
Brian D. Nicholls
Office: Sabin Hall 300  
Phone: (414) 229-2391  
Email: nicholls@uwm.edu  
Office Hours: TBA

Lecture Time and Location
Thursdays 5:30-8:10 pm  
Sabin Hall 240

Course Description
This course is designed to expose students to applications of Geographic Information Systems (GIS) in anthropology using anthropological datasets. The course is not intended to teach students how to use GIS software. Rather, students will be exposed to the range of ways GIS can be used to conduct research in anthropology. The course will focus on reviewing the development and implementation of GIS through case studies in cultural anthropology, bio/physical anthropology and archaeology. Students wishing to gain additional mastery of Geographic Information Science can select from one of several courses offered on the UWM campus in other departments and programs such as Geography or the School of Architecture and Urban Planning (SARUP).

Course Objectives
Students taking this course will evaluate geographic information systems (GIS) and how GIS has been used in anthropology. Class participants will 1) learn how GIS has been used in anthropological research, 2) identify and apply GIS concepts to address anthropological issues, and 3) create a presentation of their applications. Data sets will be derived from research conducted by faculty and graduate students in the Department of Anthropology, and students will learn how such data can be enhanced and interpreted using GIS. Information learned in this class can be used and expanded upon in an introduction to GIS classes in the Department of Geography or SARUP.
Required Readings Required readings will be selected from the list provided below and need to be completed before the beginning of each class. Additional readings may be provided on e-Reserve by the course instructor as needed.

Aldenderfer, Mark and Herbert D. G. Maschner (eds)

Cromley, Ellen K. and Sara L. McLafferty

Goodchild, Michael F. and Donald G. Janelle (eds)

Heywood, Ian, Sarah Cornelius, and Steve Carver
2006 An Introduction to Geographic information Systems (Pearson Education Limited).

Steinberg, Steven J and Sheila L. Steinberg

Assignments and Grading
The course will follow the outline, readings and syllabus provided. Additional topics and readings may be added as deemed appropriate by the instructor based on class interest and need. Several in-class labs will be developed to familiarize participants with GIS software, datasets, and concepts. Grades will be determined based on a combination of lab assignments, class participation, a midterm exam, and completion of a class project. Class participants should be able to complete most of the lab assignments during the allotted class and lab periods.

Class Project: The final class project will require class participants to identify a project they wish to work on for the class. Students will meet with the instructor to discuss their projects, identify resources and components, and determine the feasibility of the project. Each project will include a proposal, several datasets, and a poster. The posters should summarize the project, its concepts, data, and findings. Graduate students will also be required to present their posters during final few weeks of class.

Grades for the course will be determined based on the following:

Undergraduate Students
1. Exam (30% of grade) – There will be one midterm exam for this course.
2. Class participation (10% of grade) – Participation in class discussions provides another means for the instructor to assess an undergraduate student’s understanding of the readings and the lecture material.
3. Lab assignments (40% of grade) – Lab assignments will be given relating to class topics. Lab assignments will assigned during “hands-on” portions of the class and
will require use of ArcGIS to complete. In most cases, lab assignments can be completed during the designated class periods.

4. Final class project (20% of grade) – Every undergraduate student is expected to identify and complete a class project to be completed by the end of the semester. Undergraduate students will need to meet with the instructor to discuss individual class projects and present a formal proposal as outlined in the syllabus. Final projects will be in the form of a poster.

Graduate Students

1. Exam (20% of grade) – There will be one midterm exam for this course.

2. Lab assignments (30% of grade) – Lab assignments will be given relating to class topics. Lab assignments will assigned during “hands-on” portions of the class and will require use of ArcGIS to complete. In most cases, lab assignments can be completed during the designated class periods.

3. Final class project (30% of grade) – Every graduate student is expected to identify and complete a class project to be completed by the end of the semester. Graduate students will also be required to submit a 5-10 page paper covering the research conducted for the class project. Final projects will be in the form of a poster and a paper.

4. Class poster presentation (20% of grade) – In addition to completing the poster project, graduate students are also required to provide a presentation of their poster and project.

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**Course Outline, Reading Assignments, Exams, and Lab Assignments**

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<th>Week</th>
<th>Topics</th>
<th>Reading Assignment</th>
<th>Lab Assignment</th>
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<tr>
<td>Week 1</td>
<td>• Course Overview  &lt;br&gt; • What is GIS?  &lt;br&gt; • GIS in Anthropology Overview  &lt;br&gt; • Examples of GIS in Anthropology</td>
<td>• Aldenderfer Ch. 1</td>
<td>None</td>
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<td>Week 2</td>
<td>• Components of a GIS (hardware vs. software)  &lt;br&gt; • GIS concepts  &lt;br&gt; • ArcGIS review/introduction</td>
<td>• Heywood Ch. 1</td>
<td>None</td>
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<tr>
<td>Week 3</td>
<td>• GIS in Archaeology Overview  &lt;br&gt; • Examples of how GIS is used in Archaeology  &lt;br&gt; • Datasets in Archaeology</td>
<td>• Aldenderfer Ch. 10, 11</td>
<td>Lab 1</td>
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<tr>
<td>Week 4</td>
<td>• GIS in Physical/Biological Overview</td>
<td>• Cromley Ch. 8</td>
<td>• Lab 1 Due  &lt;br&gt; • Lab 2</td>
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### Additional Class Information

- See [http://www.uwm.edu/Dept/SecU/facdocs/1895A.pdf](http://www.uwm.edu/Dept/SecU/facdocs/1895A.pdf) for information UW-Milwaukee course syllabus policy.
- Students are expected to conform to ethical guidelines for all course work. This includes all in-class work as well as written and take home materials. Additional information about the University of Wisconsin-Milwaukee policies and procedures regarding student misconduct may be found at [http://www4.uwm.edu/Dept/Acad_Aff/policy/academicmisconduct.cfm](http://www4.uwm.edu/Dept/Acad_Aff/policy/academicmisconduct.cfm)
- Attendance is required.
- Although some student collaboration is expected, students are expected to attend each class and are responsible for taking their own notes, and are responsible for all partner and group based projects.
Anthropological Applications in Geographic Information Systems (GIS)

- No make-ups will be given without an accepted excuse.