



SYLLABUS – GEOG 585: GIS APPLICATIONS Winter 2011

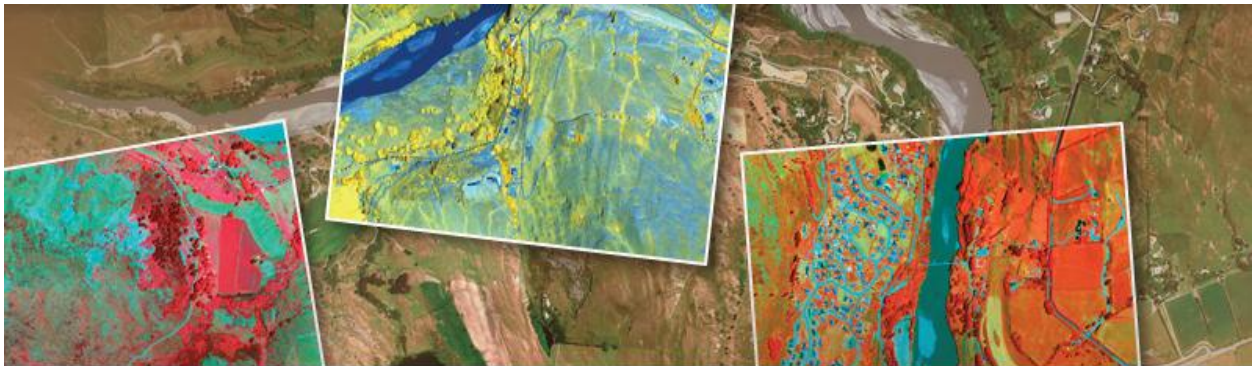
Class Meeting Time (Lecture and Lab: Thursdays 5:30 – 8:10 p.m.)

Lab: 226& 237 Strong Hall

Instructor: Kumkum Bhattacharyya

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**Do not let technology to pass by
Learn it-----**

COURSE DESCRIPTION:

This class is based on case studies that have been redesigned or extracted from actual applied research projects and GIS applications used in federal, state and local governments, as well as in private companies. Particular topics were selected with the aim of helping students achieve comprehensive mastery of GIS concepts and techniques used in real-world applications.

Five applications, GIS for natural Resources Management, Land Suitability Analysis, GIS-based Wetland Modeling, Land-Use and -Cover Change (LUCC) Analysis, and GIS in Transportation and Census Applications will be examined and exercises based on these applications will be assigned.

The primary objectives of GEOG 585 are to:

- bring GIS technologies, used in applied research and analysis by governments, businesses, and organizations, into the classroom as tools to reinforce the learning process and provide practice in problem-solving
- prepare students with broad and applicable knowledge in GIS applications with skills that meet changing demands in the market

DELIVERY METHOD:

Hybrid: Face-to-face and online. The primary delivery method will consist of face-to-face lectures. A few modules are designed for online delivery (**see Course Contents and Time Table in the last section of the syllabus for details**).

READINGS:

Lecture notes and reading materials will be distributed by the instructor and placed on EMU Online. References for some reading materials are provided by the authors of these articles and papers, or collected from GIS-related Websites. These materials are provided to you only for reading and learning in this class and should not be used for commercial purposes. If you cite these materials in your term papers or research publications make sure the sources are credited.

OFFICIAL GRADING SCALE:

Grading will be scaled into a normal distribution curve, but a minimum total score of 70% is required to pass the course.

Grading points will be assigned as follows:

Class participation 10%

Midterm exam 20%

Lab exercises 40%

The final term paper writing 15%

The final term paper presentation 15%

Grading is on a 500-point scale, allocated as follows:

Class participation: 50 pts

Midterm Exam: 100 pts

Lab exercises: 200 pts

Term paper writing: 75 pts

Term paper presentation: 75 pts

Students should keep a record of all returned assignments. Grade information will be provided frequently to keep students informed of their progress in the class.

REQUIREMENTS:

1. Weekly exercises will be assigned on the five GIS applications listed in the course description. Students are expected to obtain the GIS knowledge and skills contained in the applications that will be needed to complete these exercises. Each weekly assignment must be completed before the next class meeting. If students encounter difficulties in finishing an assignment, they should inform the instructor of the reasons for their difficulties in writing. It is the instructor's decision to grant permission for additional time to complete the assignment. Unapproved delay in finishing an assignment may lead to a reduction of points allocated to the exercise.
2. One mid-term exam covering the materials presented in class and in exercises will be given. A final term paper and a classroom presentation analyzing or extending one GIS application used in this class will be organized in the final two weeks. It is the student's responsibility to make sure that s/he can use the devices and software packages in 237 (or 226) Strong Computer Lab for the final presentation. If a student needs additional or a newer version of software, s/he should bring in his or her own computer for the final presentation. An unsuccessful presentation in class will lead to a failing grade for that assignment.
3. Class discussions and the final term-paper presentation are required in this class and count in the final grade.
4. Current university policy recognizes the right of students to observe religious holidays without penalty to the student. Students are to provide advance notice to the instructor in order to make up course work, including examinations that they miss as a result of their absence from class due to observance of religious holidays. If satisfactory arrangements cannot be made, the student may appeal to the head(s) of the department(s) in which the course(s) is/are offered.

5. If you have a **critical** professional need (such as, new job interview, presenting at a national professional conference, etc.), you are required to provide advance notice with supporting evidence to the instructor for permission to make up course work, including examination or presentation that will be missed. If permission is not given, the student may receive a failing grade for a particular assignment missed.
6. Students with disabilities who seek accommodations must make their request by contacting the Office of Disability Services (Students With Disabilities SWD) located in 240 Student Center, or call (734) 487-2470. All accommodations must be approved by the Students With Disabilities Office. EMU Board of Regents Policy #8.3 requires that you first register with the SWD. Student with disabilities are encouraged to register with SWD promptly as you will only be accommodated from the date you register with them forward. **No retroactive accommodations are possible.**
7. Academic dishonesty, including all forms of cheating, falsification, and/or plagiarism are absolutely forbidden. If you are caught cheating, you will obtain a failing grade and be subject to EMU penalties. Cheating on exams or plagiarism in written assignments will result in a zero score for the assignment. The **Student Conduct Code** contains detailed definitions of what constitutes academic dishonesty but if you are not sure about whether something you are doing would be considered academic dishonesty, consult with the course instructor. You may access the **Code** online at www.emich.edu/sjs.
8. Students are expected to abide by the **Student Conduct Code** and assist in creating an environment that is conducive to learning and protects the rights of all members of the university community. Incivility and disruptive behavior will not be tolerated and may result in a request to leave class and referral to the Office of Student Judicial Services (SJS) for discipline. Examples of inappropriate classroom conduct include repeatedly arriving late to class, using a mobile/cellular phone while in the class session, or talking while others are speaking. You may access the **Code** online at: www.emich.edu/sjs.

COURSE CONTENT AND TIME TABLE (Subject to Modification)

Week	Topics
<p>1 (Jan 6)</p>	<p>Course Overview, Introduction and discussion of students background and interests; GIS Analytical Functions; GIS Extensions for Specific Applications <i>* This unit is called “Week 01” on www.emuonline.edu (GEOG 585</i> Geographic Info System Appls – 22914)</p>
<p>2 (Jan 13)</p>	<p>Creating and integrating data for natural resources management I (Jan 13-19 online) <i>* This unit is called “Week 02” on www.emuonline.edu (GEOG 585</i> Geographic Info System Appls – 22914)</p>
<p>3 (Jan 20)</p>	<p>Creating and integrating data for natural resources management II (Jan 20-26 online) <i>* This unit is called “Week 03” on www.emuonline.edu (GEOG 585</i> Geographic Info System Appls – 22914)</p>
<p>4 (Jan 27)</p>	<p>GIS for natural resources management & working with Raster data to perform countless GIS tasks <i>* This unit is called “Week 04”</i> (GEOG 585 Geographic Info System Appls – 22914)</p>
<p>5 (Feb 3)</p>	<p>Land suitability analysis and land infill analysis <i>* This unit is called “Week 05” on www.emuonline.edu (GEOG 585</i> Geographic Info System Appls – 22914)</p>
<p>6 (Feb 10)</p>	<p>GIS Modeling & for Wetland Eco-system Changes I <i>* This unit is called “Week 06” on www.emuonline.edu (GEOG 585</i> Geographic Info System Appls – 22914)</p>

<p>7 (Feb 17)</p>	<p>Transportation & Networking Application I: Address Matching and Census Data Analysis <i>* This unit is called "Week 7" on www.emuonline.edu (GEOG 585 Geographic Info System Appls – 22914)</i></p>
<p>8 (Feb 24)</p>	<p>How to write a research (scholarly and applied) paper and prepare for the term paper; Comparative Tempo-Spatial Pattern Analysis; Fragstat –Landscape Fragmentation Metrics) <i>* This unit is called "Week 08" on www.emuonline.edu (GEOG 585 Geographic Info System Appls – 22914)</i></p>
<p>9 (Mar 3)</p>	<p>Spring Break No Class</p>
<p>10 (Mar 10)</p>	<p>Mid-term Exam</p>
<p>11 (Mar 17)</p>	<p>Land Use – Cover Change Detection Analysis Exercises II <i>* This unit is called "Week 11" on www.emuonline.edu (GEOG 585 Geographic Info System Appls – 22914)</i></p>
<p>12 (Mar 24)</p>	<p>Land Use –Cover Change Detection Analysis I <i>* This unit is called "Week 12" on www.emuonline.edu (GEOG 585 Geographic Info System Appls – 22914)</i></p>
<p>13 (Mar 31)</p>	<p>Transportation & Networking Application II: Location & Allocation Exercises <i>* This unit is called "Week 13" on www.emuonline.edu (GEOG 585 Geographic Info System Appls – 22914)</i> Presentation of term paper and class critique I</p>
<p>14 (Apr 7)</p>	<p>Presentation of term paper and class critique II Submission of Term Paper</p>
<p>15 (Apr 14)</p>	<p>Attending AAG meeting at Seattle, WA</p>