Geospatial Systems Project

Course Description
This course allows students to employ knowledge attained in other courses to create a project to spatially analyze information of interest to you and your field of study. You must select a topic that includes spatial information, and then find or collect data that can be displayed and analyzed using GIS. A written report and oral presentation are required for each student.

Learning Objectives

1. Apply GIS principles and methods to design and solve geospatial problems.
2. Gain real world experience with GIS applications through completing a project.

Prerequisites

Texts: No text required

General Criteria
The project will be graded based on:

- Spatial analysis component
- Overall design of the project
- Originality
- Completeness of GIS dataset
- Complexity of GIS processes used

Class BlackBoard Website
https://iol.tamucc.edu/

Major Course Requirements and Assessment

We will not meet at each Lab time. Most of the time, students will work on their own projects. However, students are required to attend to class every Monday morning (9:00-9:50am) to report their progresses of the project to the instructor and other professors. In addition, students are required to write a bi-weekly progress report. Students are encouraged to meet the instructor and other professors to discuss their project. The students are also suggested to keep a real-time notebook of their project from the beginning to the end of the project’s lifecycle.
Assessment is based on project proposal, reports and presentations. You may examine the final exam within **four weeks** after the final grades are assigned. The final grade is computed as follow:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project proposal and oral presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Participant and progress report</td>
<td>10%</td>
</tr>
<tr>
<td>Final project results – oral presentation</td>
<td>30%</td>
</tr>
<tr>
<td>Final project results – written report</td>
<td>50%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

The following grading scale applies:

- **A** \( \geq 90 \)
- **B** \( \geq 80 \) and <90
- **C** \( \geq 70 \) and <80
- **D** \( \geq 60 \) and <70
- **F** <60

**Project proposal (due Monday, Feb. 4, 2013):**

Each student will explore and determine the project topic. The project will be worked on INDIVIDUALLY. Each student should submit a one-page double-spaced project proposal by **Monday, Feb. 4, 2013**. The project proposal should include: 1) problem(s)/objective(s) of the project; 2) data layers required with description of spatial/attribute components and the relevant data resource; 3) a list of GIS functions (e.g., buffering, overlay, spatial interpolation, shortest path analysis, etc) needed to complete the analysis to reach objectives.

**Note:** Make sure that the required data for the project is available when you complete your project proposal.

**Progress report – Data collection (due Monday, March 4, 2013):**

Data is important to the successful completeness of the project. Each student should collect dataset immediately after the proposal is approved. Each student is expected to collect all needed dataset for the project and submit a one-page double-spaced report by **Monday, March 4, 2013**.

**Progress report - Literature review (due Monday, March 25, 2013):**

Literature review is a component of your final project report. The review is a careful examination of a body of literature pointing toward the answer to the problem/objective(s) of your study. It is essential to discover what is already known about your topic. Each student is required to find and read at least three (3) peer-reviewed Journal or conference articles that are related to your project, and submit a 3-4 page double-spaced literature
review to summarize and synthesize of published information in the area of your project by **Monday, March 25, 2013.**

**Progress report – Methodology** (due Monday, April 15, 2013):

Each student should submit a 2-3 page report to describe the methodology that is to be used to analyze data by **Monday, April 15, 2013.**

**Progress report – Preliminary project products** (due Monday, May 6, 2013):

Each student should submit a 2-3 page report to describe the preliminary project products, such as maps, by **Friday, April 27, 2012.**

**Final project results – Oral Presentation** (Wednesday, May 15, 2012, 8:00-10:30am)

Each student is required to give a Power Point presentation of your final project at the end of the semester, on Wednesday, May 15, 2013. Slides can be maps, tables, graphs, photographs, and/or text.

Each student will have 15 minutes for presentation and 5 minutes for questions to prove that you have researched this project. The Power Point files should be submitted via BlackBoard by Wednesday, May 15, 2013.

**Final project results – Written Report** (Wednesday, May 15, 2012)

Each student is required to submit the final project report via BlackBoard by **Wednesday, May 15, 2012.** The length of the final report is 10-15 pages, 12pt Times New Roman font, double-spaced, 1” margins, and 8.5” by 11” paper space. The final report should follow the format of formal journal articles including at least, Title, Abstract, Keywords, Introduction, Methodology, Results/Discussion, Conclusions, and References.

**Recommended Data Source**

- Census Bureau Factfinder Free decennial census population and social characteristics data.  
- TNRIS: the most comprehensive set of geographic data for the State of Texas  
  [http://www.tnris.org/DataCatalog/Index.aspx](http://www.tnris.org/DataCatalog/Index.aspx)
- Centers for Disease Control and Prevention (CDC). Resources for creating public health maps and for GIS and spatial analysis.  
  [http://www.cdc.gov/epiinfo/maps.htm#Geostatistics](http://www.cdc.gov/epiinfo/maps.htm#Geostatistics)
- GeoDa Center Sample data for teaching and research with GeoDa from the GeoDa Center at Arizona State University.  
  [http://geodacenter.asu.edu/data2](http://geodacenter.asu.edu/data2)
- DataSF is a central clearinghouse of datasets published by the City & County San Francisco
http://datasf.org/page.php?page=about
  http://www.usgs.gov/ngpo/

Past Projects

- Development of Survey Control Web Map Service and Web Mapping Application
- Corpus Christi Trash Trail
- Predicting Oyster Distributions Based On Their Ecological Niche
- A Tour of Mustang Island
- Cloudy With a Chance of Crime: Crime Forecasting
- Assessing the Reliability of Coordinates provided for a Cell Phone During a 911 Call
- Mapping Residual Errors in Geoid Heights for NGS Monuments: Comparing GPS Observations and Published Data
- A Tutorial for Performing a GIS Analysis of Texas Fossil Exposures
- A Study Into the Effects of Elementary Schools on Surrounding Real Estate Values
- A Study on How Environmental Factors Affect Adult Southern House Mosquito Habitats in Nueces County, TX between 2008 - 2010
- Creating an Open-source Data Collector
- The Attractive Side of Corpus Christi - A Study of the City’s Economic Growth
- Using GIS to Analyze and forecast High risk Wildfire areas in Texas from 2009-Present
- Inundation Analysis Using GIS and Hydrodynamic Modeling

Course Policies

Due date and late policy

We have SEVEN tasks as shown in Project Section. Each of the tasks will have a due date clearly as shown in the syllabus. All submittals must be completed on time. Any submittal that is turned in after the due date is considered late. Late submission is accepted, but with a penalty of 10% of the grade per day (including weekends). Late submittals will only be accepted up to ONE WEEK after they are due. Exceptions are possible only with prior permission and for exceptional cause (with written documentation). Please work well ahead of the deadlines!
Academic Advising
The College of Science and Technology requires that graduate students meet with their Graduate Advisor for assistance with initial course selection as soon as the students are accepted to a graduate program. By the end of the first year of graduate studies graduate students should meet with their Graduate Committees to set up a degree plan. Graduate students are also encouraged to contact the appropriate College Academic Advisor regarding any questions or problems with their program of study. The College of Science and Technology Academic Advising Center is located in Center for Instruction, Room 350, and can be reached at 825-6094.

Academic Integrity/Plagiarism
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or exam will result in zero (0) points for the assignment or exam.

Dropping a Class
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. April 12, Friday, 2013 is the last day to drop a class with an automatic grade of “W” this term.

Grade Appeals
As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.
Disabilities Accommodations
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Driftwood 101.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.
Course schedule (subject to change)

We will only meet at each Monday morning’s Lab session (9:00-9:50am) except the first week, which we will meet on Wednesday, Jan. 23. Most of the time, students will work on their own projects.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan. 23</td>
<td>Course Introduction</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jan. 28</td>
<td>Project proposal</td>
<td>Resume Web Site</td>
</tr>
<tr>
<td>3</td>
<td>Feb. 4</td>
<td>Project proposal</td>
<td>Progress report 1 - Project proposal</td>
</tr>
<tr>
<td>4</td>
<td>Feb. 11</td>
<td>Project proposal presentation</td>
<td></td>
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<tr>
<td>5</td>
<td>Feb. 18</td>
<td>Data collection</td>
<td>Progress report 2 - Project proposal (revised version)</td>
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<tr>
<td>6</td>
<td>Feb. 25</td>
<td>Data collection</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>March 4</td>
<td>Data collection presentation</td>
<td>Progress report 3 - Data collection</td>
</tr>
<tr>
<td>8</td>
<td>March 11</td>
<td>Literature review</td>
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<tr>
<td>9</td>
<td>March 25</td>
<td>Literature review</td>
<td>Progress report 4 - literature review</td>
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<tr>
<td>10</td>
<td>April 1</td>
<td>Literature review presentation</td>
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</tr>
<tr>
<td>11</td>
<td>April 8</td>
<td>Methodology</td>
<td>Progress report 5 - literature review (revised version)</td>
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<tr>
<td>12</td>
<td>April 15</td>
<td>Methodology</td>
<td>Progress report 6 - methodology</td>
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<tr>
<td>13</td>
<td>April 22</td>
<td>Methodology</td>
<td>Methodology presentation</td>
</tr>
<tr>
<td>14</td>
<td>April 29</td>
<td>Project results</td>
<td>Progress report 7 - methodology (revised version)</td>
</tr>
<tr>
<td>15</td>
<td>May 6</td>
<td>Project results</td>
<td>Progress report 8 - preliminary results</td>
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<tr>
<td></td>
<td>May 15</td>
<td>Project presentation</td>
<td>Final report due</td>
</tr>
</tbody>
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Note: Students will be suggested to drop from the class or receive an “F” grade if: 1) more than three Monday classes are missing; 2) more than three progress reports are missing, and/or 3) no any progress within two weeks.
GENERAL GUIDELINES FOR COURSES AND LABS IN THE GISC PROGRAM
CULTURE, REGULATIONS, MODES OF OPERATION AND PROCEDURES

These guidelines are designed to inform scholars of their responsibilities and of the course requirements in order to make this course a positive experience. The instructor is always available for consultation and discussion with students on any aspect of a course and of these general guidelines.

CLASS CULTURE

1. Consider yourself as a scholar rather than a student. The term “student” may imply some passivity, whereas the term “scholar” implies active participation, understanding and searching. We will use these terms interchangeably with the meaning of “scholar” implied. Osmosis does not work in a learning environment! 
   **A good scholar takes NOTES at every class meeting.**
2. Further, define yourself as a “thinking explorer”. You are responsible for your education; an instructor can only be a guide and a facilitator. An instructor cannot learn for you. If you come across something that really interests you, explore it further.
3. Your experience at this University should not consist of passing a series of courses to earn a degree. Your experience should rather be a series of activities that will give you an education.
4. Concentrate on “learning to learn”. You will have to be a life-long learner to survive in your chosen career.
5. There is no such thing as a stupid question; there is such a thing as a stupid answer. So ask questions, the instructor is taking all the risks! Ask questions of your instructor and of your fellow scholars. Many times questions are more important than answers.
6. Keep copious notes of all that is going on in all the meetings related to your course. Make a note of what the instructor is stressing. At the end of each lecture you should be able to answer two questions: **What did I learn from this lecture? and What was not clear to me?** At the beginning of each lecture, if the instructor does not ask for questions, you need to ask if there is something you did not understand from the last lecture. Review, consolidate, annotate and organize your lecture/lab notes on a regular basis, at least once a week. The Internet is a tremendous resource and also a great danger. When you find information on the Internet, you have no idea if it is correct. View such information with caution. But, use the Internet to explore topics that interest you. Do not only prepare for the exam in a course – learn as much as you can on the topics introduced to you by the course material. You are responsible for the extent of your education!
   **READ MINDFULLY !!!!!**
7. In addition to details of the syllabus given in class, the syllabus for the course includes all the chapters of the required textbook/s unless indicated otherwise by the instructor. The student is responsible for all materials/topics covered in class, in handouts, in assignments, in labs, and in outings or field trips. The instructor is NOT responsible for informing absent students exactly what was covered in previous classes, meetings, etc.

PROCEDURES & REGULATIONS

8. The final letter grade for the class will be based on the raw composite numerical score
obtained from the weighted average of the tests, quizzes, exams, labs, etc. as indicated by
the instructor. The raw composite numerical score may be adjusted (curved) based on the
highest score, the statistical profile of the scores and other academic standards or other
considerations. Generally the letter grade of A is 90% and over of the adjusted score, a B
is between 80% and 89% (inclusive) of the adjusted score, a C is between 70% and 79%
(inclusive) of the adjusted score, a D is below 70% of the adjusted score and an F is
below 60% of the adjusted score. An incomplete (I) will only be given in very unusual
circumstances. The University regulations on incomplete grades state: “An incomplete
notation may be given to a student who is passing but has not completed a term paper,
examination, or other required work for reasons beyond the student’s control other than
the lack of time”. Students are expected to take ALL tests, quizzes, exams, etc., and to
complete and hand in all labs and other assignments. There is no provision for “extra
credit”. No final grades will be given via the telephone, e-mail, etc.

9. All University rules, regulations and expected student conduct apply to this course.
Students are held responsible for the information given in the current Catalog and Student
Handbook. Make yourself aware of the University security regulations.

10. All labs, assignments, etc. must be handed in on the assigned due date. Scholars having
problems must notify the instructor well before the due date. Marks will be deducted
for poor and sloppily presented work.

11. Labs, etc. handed in after the due date may be subject to a penalty of loss of marks. Labs,
etc. handed in after the graded labs, etc. have been returned to students will get zero
marks but must be handed in to the instructor. Labs will be returned to students, after they
have been graded, at a class meeting. Students who miss this meeting will be able to
collect graded work in the marked box outside the instructor’s office.

12. Scholars are asked to take special note of the penalties, which the University attaches to
Academic Dishonesty. Consult the Student Handbook.

13. All work handed in to the instructor must be the student’s own work. Extracts, excerpts,
etc. from the work of others must be suitably noted, acknowledged and properly
referenced. Any Group Work will be judged in the same way. That is, it is the work of
the group and the extracts, excerpts, etc. of others must be acknowledged.

14. All written and graphical work handed in must be presented neatly printed and bound
(staples are adequate). Students’ written work will be judged on written communication
skills, critical thinking and problem solving ability.

15. Students are expected to be present at all meetings (lectures, labs, etc.) of the class.
Students are expected to be present at the date and time assigned for all tests, exams,
quizzes, etc. There are NO provisions for making up missed exams except in cases where
prior arrangements have been made and agreed to by the instructor. During the
assigned lab session, ONLY assigned labs are to be done. All other work must be done in
other rooms.

16. All cellular phones and other similar devices MUST BE TURNED OFF during lectures,
labs and other class meetings.

17. All students must keep their university e-mail addresses (firstname.lastname@islander.tamucc.edu). This will be the means of communication
between the instructor and the class.

18. The instructor reserves the right to make changes to the above with due notice to the
students. These changes will be announced in class and each student is responsible for
keeping herself/himself informed of such changes.