COURSE NAME: DIS: Bases of Geographic Information Systems - 3 sem. hrs.

INSTRUCTOR: Mr. Richard Smith  
Office: CBI 113, Phone: (361) 825-2750  
Email: Richard.Smith@tamucc.edu

CONSULTATION: 1:00 PM – 4:00 PM Monday and Wednesday or by appointment.  
Available during these times on Skype as richardsmith-gsen  
Available during these times on Saba Centra (link on course website)  
Available any time at Virtual Office Hours: http://vyou.com/RickSmith

LECTURE TIMES: As needed

LECTURE LOCATION: TBA and on the Island Online (IOL) using Blackboard 8  
http://iol.tamucc.edu

COURSE WEBSITE: The Island Online (IOL) at: http://iol.tamucc.edu

COURSE DESCRIPTION:
Basic principles and concepts of GIS via fundamental geographic and cartographic concepts. Understanding and use of GIS software to analyze data and produce maps. May not apply for credit toward the GSEN-MS degree.

LEARNING OBJECTIVES:
1. Understand the principle concepts of geographic information systems and science  
2. Be familiar with the concepts of geography  
3. Be familiar with the software used to execute geospatial reasoning and analysis  
4. Be familiar with basic cartographic principles  
5. Be familiar with areas of application of geographic information systems

REQUIRED TEXTS:
COURSE REQUIREMENTS:
Course requirements include the following:
1. Attend/watch lectures and participation in class discussions.
2. Completion of assignments by scheduled due dates.
3. Completion of application papers by scheduled due dates.
4. Completion of exams by scheduled due dates.

EVALUATION:
1. Exam 1: 15%
2. Exam 2: 18%
3. Exam 3: 22%
4. GIS Application Papers: 10%
5. Assignments: 35%
   TOTAL: 100%

GRADE COMPUTATION:
A  \geq 90
B  \geq 80 \text{ and } <90
C  \geq 70 \text{ and } <80
D  \geq 65 \text{ and } <70
F  <65

DUE DATES:
All assignments must be completed on time. Submission of an assignment after the due date is accepted, but with a penalty of 30% of the grade for the first 24 hours late, and 10% each additional 24 hours.
COURSE OUTLINE:

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<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>1-2</td>
<td>Introduction to GIS</td>
<td>Chapters 1 &amp; 15</td>
<td>Internet Mapping</td>
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<tr>
<td>3</td>
<td>Data Models</td>
<td>Chapter 2</td>
<td>GIS Data &amp; Metadata</td>
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<td>4</td>
<td>Map Projections and Coordinate Systems</td>
<td>Chapter 3</td>
<td>Projections &amp; Transformations</td>
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<td>5</td>
<td>Maps, Data Entry, Editing and Output</td>
<td>Chapter 4</td>
<td>Digitizing</td>
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<td>6</td>
<td>GPS</td>
<td>Chapter 5</td>
<td>GPS</td>
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<td><strong>Exam 1 - Covers Week 1-5</strong></td>
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<td>7</td>
<td>Aerial and Satellite Images</td>
<td>Chapter 6</td>
<td>Aerial Photography</td>
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<td>8</td>
<td>Digital Data</td>
<td>Chapter 7</td>
<td>GIS Data Clearinghouse</td>
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<td>9</td>
<td>Attribute Data and Tables</td>
<td>Chapter 8</td>
<td>Data creation/editing</td>
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<td>10</td>
<td>Basic Spatial Analysis</td>
<td>Chapter 9</td>
<td>Spatial Analysis</td>
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<tr>
<td>11</td>
<td>Basic Spatial Analysis</td>
<td>Chapter 9</td>
<td>Spatial Analysis</td>
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<td><strong>Exam 2 - Covers Week 6-10</strong></td>
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<td>12</td>
<td>Terrain Analysis</td>
<td>Chapter 11</td>
<td>3D Terrains</td>
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<td>13</td>
<td>Spatial Estimation</td>
<td>Chapter 12</td>
<td>Surface Interpolation</td>
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<td>14</td>
<td>Spatial Modeling</td>
<td>Chapter 13</td>
<td>Suitable Site Determination</td>
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<td>15</td>
<td>Data Standards/Quality and Legal Aspects</td>
<td>Chapter 14</td>
<td>TBA</td>
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<td><strong>Final Exam</strong></td>
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<td><strong>Exam 3 - Covers Entire Course</strong></td>
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<td>50% - Weeks 11-15, 50% - Entire Course</td>
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**Note:** This course outline is a general plan for the course; deviations announced to the class by the Instructor may be necessary. The assignments that are given are related to Student Learning Outcomes stated above.
GIS APPLICATION PAPERS:
All students must review five application areas of GIS. The application reviews can be prepared from published literature, WWW, and other media. At least three of the reviews must come from peer-reviewed journals or trade publications. Each application review will consist of a one-page summary and critique of the published article and must adhere to the following requirements:

Format:
1. 1” margins, double-spaced, Times New Roman font, 12pt.
2. Title
3. Name, course, assignment type and number in the upper margin.

Title:
Provide a descriptive title explaining the content of the application you are reviewing.
(centered, top of page)

Paragraph One:
Introductory paragraph describing the problem being addressed (1/3 page maximum)

Paragraph Two:
Central paragraph describing the GIS solution to the problem; including description of software, hardware, data, data models, algorithms, models as appropriate. “What did they do to solve the problem?”

Paragraph Three:
Conclusion paragraph documenting your evaluation of GIS as the tool to solve the problem; is the correct data, software, hardware, data model...correct. Why or why not?

Reference:
Source of information in lower margin.

Potential sources for articles:
Cartography and Geographic Information Science
GeoInformatica
International Journal of Geographical Information Science
International Journal of Spatial Data Infrastructures Research
Transactions in GIS
Computers and Geosciences
Auto-Carto
Computers, Environment, and Urban Systems
Journal of Geographic Information and Decision Analysis
Journal of Geographical Systems

You can access these journals by clicking the “Find Articles” button on the library website: http://rattler.tamucc.edu or by visiting the library on campus.
ADDITIONAL POLICIES AND INFORMATION:

Notice to Students with Disabilities: Texas A&M University-Corpus Christi complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. If you suspect that you may have a disability (physical impairment, learning disability, psychiatric disability, etc.), please contact the Services for Students with Disabilities Office, located in Driftwood 101, at 825-5816. If you need disability accommodations in this class, please see me as soon as possible.

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 Faculty Center 178, and can be reached at 825-6094.

Academic Honesty
Cheating and plagiarism will automatically earn zero (0) points for the assignment or exam. All academic work must meet the standards contained in the 2009-2010 Graduate Catalog, pages 28-29, sections titled "Academic Integrity" and "Academic Honesty" available at http://catalog.tamucc.edu/catalog10/graduate/policies.pdf and Undergraduate Catalog, pages 40-41, sections titled "Academic Integrity" and "Academic Honesty" available at http://catalog.tamucc.edu/catalog10/undergraduate/policies.pdf

Each student is responsible to inform themselves about those standards before performing academic work.

Grade Appeal Process. 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.