Advanced Problems in Geographic Information Systems (GIS)
GISC2131-23301

Study **Independent-study, self-paced course**
Location: As needed - EMGI H105 or as agreed

Professor: J. Scott Sires
Office: EMGI H115
Office phone: 972-860-4362
Office hours: Monday None
Tuesday 12:20 p.m. – 3:20 p.m.
Wednesday 4:30 p.m. – 6:30 p.m.
Thursday None
Friday None
Email: ssires@dcccd.edu

Textbooks: No required text.

COURSE INFORMATION

Number: 2131  Section: 23301  Credit Hours: 1

Description: Seminar course designed for the final semester of a degree or certificate in Geographic Information Systems (GIS). Projects will include individual and group studies of GIS applications using the skills acquired in previous courses. The student will produce a professional project and present the results to a panel consisting of peers, instructors, or practicing GIS professionals.

Prerequisites: None

Objectives: Utilize problem solving techniques in a structured manner in the completion of a major project or application in Geographic Information Systems; use appropriate software in a major project; produce a quality final report/drawing using standard tools and techniques; present findings or projects to a group made up of peers, instructors, and industry professionals.

To Begin: Keep in mind this is a 1 credit course where you are required to produce a project worthy of 32 contact hours. Think of this as being a paid professional who has 32 hours, over the next few short weeks, to produce and present a professional applied geospatial technology project. FIRST QUESTION: What is your project? If you do not have one of your own I can help you identify a project.

FIRST TASK: Email me your project for approval. Identify the project, identify the five elements of GIS as they relate to this project. This task should take no more than 1 hour of your time. Due by Friday, January 24th 05:00 PM.

SECOND TASK: Upon project approval you should complete a 9-cell trigger document (I will provide the template via eCampus in the “Content” section). To complete this document think through the effort you will take to complete the project. Remember 32 hours is our total contact. You will be expected to demonstrate attention to detail. Also write an executive summary using generalized technical content. Please make the summary in the form of a business letter, addresses to me (J. Scott Sires) at my address on campus (Brookhaven College, Geotechnology Institute, 3939 Valley View Lane, Farmers Branch, TX, 75244). In three paragraphs explain first the project need/concern/problem and what you will do about it. In the second paragraph you will identify three technical processes or technical tasks you will accomplish to execute the...
stated project. In the third paragraph you will discuss the results of the project and the expected benefit of the project. Complete thoughts and professionalism of the letter will be evaluated in your assessment. Again attention to detail will also count. Due (9-cell and executive summary) via email by Friday, January 31st, 05:00 PM.

THIRD TASK: Document, acquire and assemble data as you identified in the 9-cell grid in order to develop a project that includes an ArcMap 10.2 “.mxd” file and matching data set, to be turned in as a cascade (of folders) from a single parent data folder. The data set must be logically named and explained in a data dictionary (Microsoft Word document) that identifies each database, data set, data class and all fields. For each field state what acceptable values and ranges. Within the .mxd apply logical symbology for needed datasets. Do not leave unneeded data sets in the project (the .mxd). You can leave them in the data folder and can acknowledge in the data dictionary why they were not used (ie: “How the data was improved to a new version?”). Include in the single parent project folder all that you have produced – even that which has been turned in to date. Due (single parent project folder containing an .mxd file project, parent data-folder, data, documents including dictionary, 9-cell, executive summary) by the last day of class, Thursday, May 08th, 2014 by (meaning before) 10:00 AM.

FOURTH TASK: Create and export 3 layouts showing the most substantial data and or views that you think address the initial need and approach you identified. These layouts will be presented to your panel of peers and should contain the minimum required map elements. ArcGIS desktop does not permit a single project (.mxd format) to have more than one layout and thus you must create each layout and export each to a single map (as a 200 dpi, tabloid sized (11” X 17”) adobe pdf or tiff format file). Due as softcopy by the last day of class Thursday, May 08th, 2014 by 10:00 AM., as well as included in your final project presentation to the panel of peers. These softcopy layout files will be included in your single parent folder.

FIFTH TASK: Participate in the Thursday, May 08th, 2014 at 10:00 AM final project presentation. Each student will need to provide, on their storage device, their single parent folder which will be copied to the instructor station before 10:00 AM; watch for a line of other students and do NOT WAIT until 10:00 AM to make your initial request. Each student will have a maximum of 15 minutes to use the instructor station and ArcGIS desktop to open their .mxd and explain the project. Presentation to be delivered between 10:00 AM and 2:00 PM that same day. NO DATA OR PROJECT DELIVERABLES WILL BE ACCEPTED AFTER 10:00 AM. Each student is expected to attend the full four hours in order to participate in the full Spring GIS Presentation ‘event’. There will be students from other classes also presenting. This is required! Make plans now for time off work.

OPTIONAL TASK: Request meetings and or attend campus labs for instructional support.

Recommendations: Industry periodicals and web-sites as mentioned throughout the program. 50 GB, or larger, storage device to be used to transfer data to and from class. Ask for help before due dates and before test dates.

Assessments:

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary &amp; 9-cell project overview</td>
<td>10%</td>
</tr>
<tr>
<td>Final Presentation</td>
<td>10%</td>
</tr>
<tr>
<td>3 Layouts</td>
<td>15%</td>
</tr>
<tr>
<td>Data Deliverables, Data Dictionary &amp; Mxd package</td>
<td>65%</td>
</tr>
</tbody>
</table>

Attendance: This is an independent study course and is self paced. Thus there are no required class lectures nor scheduled on campus meetings. You are expected to request and attend meetings and labs as needed. It is your responsibility to withdraw from this course if necessary. If you stop attending class your final grade will be determined as shown in the above “Assessments” with zeros for all grades missed.
ADA Statement: If you are a student with a disability and/or special needs who requires accommodations, please contact the college Disability Services Office.

Religious Holidays: Absences for observance of a religious holy day are excused. A student whose absence is excused to observe a religious holy day is allowed to take a make-up examination or complete an assignment within a reasonable time after the absence.

Academic Dishonesty: Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the Dallas County Community Colleges Code of Student Conduct published in the Dallas County Community Colleges Catalog. https://www1.dcccd.edu/cat0506/ss/code.cfm

Pay specific attention to Pages 3 of 5 and 4 of 5 of the STUDENT RIGHTS AND RESPONSIBILITIES, STUDENT CONDUCT, item number 11 defines how we define cheating.

Withdrawal Policy: If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar’s Office by Thursday, April 17, 2014. Failure to do so will result in your receiving a performance grade, usually an “F”. If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a “W” (Withdraw) in each class dropped.

Six Drop Issue: STOP BEFORE YOU DROP
For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: https://www1.dcccd.edu/coursedrops

Repeating this course: Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and Continuing Education/Workforce Training courses will result in additional tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any Dallas County Community Colleges since the Fall 2002 Semester.

Geo Lab Policies: Food IS allowed in the Geo lab but you take responsibility for any property damage that results from your food or drink; regardless of how the damage occurred. Drinks ARE allowed in the classroom, WITH TIGHT FITTING LIDS ONLY, but you take responsibility for any property damage that results from your food or drink; regardless of how the damage occurred. With respect to any food you consume in lab, the cleanliness of our lab is also your responsibility. Your PC and desk are your responsibility; please keep them clean so we all benefit from the best environment.
Cell Phones are to be silent at all times within the lab. Cell phones are not to be used during class lecture nor can they be used during labs. **Cell phones and pagers are no longer allowed in the Testing Center.**

Etiquette will be observed at all times in the classroom. We will not tolerate students talking over the instructor, other students or guests. At no time may a student touch the keyboard or other input devices on any PC except their own UNLESS prior approval of a PC user; **ASK FIRST!**

At no time will a student remove, delete or erase any files from any PC other than files they have created on the PC they are using at that class time. Each lab PC is **WIPED OUT EACH NIGHT!** Only the content of our Geo Lab Server is maintained.

At no time will a student write-over an existing file on any PC other than on the PC they are using at that class time.

At all times all students will respect shared devices and data. Students will prepare for class as needed and directed. **BEING UNPREPARED or late results in a disruption to the lesson and content delivery and will result in reductions in participation and or lab grade for the student causing the delay.** Students will participate in class discussions and will NOT perform non-geospatial technology program work, will not email beyond that needed for support of our classes, will not surf the internet nor perform other activities during class **EXCEPT related to the course of study.**

Behavior unacceptable to the instructor will result in removal of the student from class.

**If you are receiving Financial Aid grants or loans, you must begin attendance in all classes. Do not drop or stop attending any class without consulting the Financial Aid Office. Changes in your enrollment level and failing grades may require that you repay financial aid funds.**

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**COURSE EDUCATIONAL OBJECTIVES**

1. Understand and apply methods and appropriate technology to the study of the geospatial technologies.
2. Recognize geographic and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
3. Identify and recognize the differences among competing geographic theories.
4. Demonstrate knowledge of the major issues and problems facing geospatial technologies, including issues that touch upon ethics, values, and public policies.
5. Demonstrate knowledge of the interdependence of geospatial technology and their influence on, and contribution to modern culture.

**COURSE INTELLECTUAL COMPETENCIES**

1. Reading – The ability to analyze and interpret a variety of printed materials – books, documents, and articles.
2. Writing – The ability to produce clear, correct and coherent prose adapted to purpose, occasion and audience.
3. Speaking – The ability to communicate orally in clear, coherent and persuasive language appropriate to purpose, occasion, and audience.
4. Listening – Analyze and interpret various forms of spoken communication, possess sufficient literacy skills of writing, and reading.
5. Critical Thinking – Think and analyze at a critical level.

Right to Change syllabus: The instructor reserves the right to amend this syllabus as necessary.