ANT 324L Digital Data Systems in Archaeology
Unique No. 31233
Spring 2013

Wed 3:00 – 6:00 pm
TAR 5D (Texas Archeological Research Laboratory, Pickle Research Campus, Bldg. 5D)

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Office hours: Tues. 1:00 – 4:00 pm or by appointment (in this case "by appointment" means: feel free to stop by anytime but call or email first to be sure I'll be there)
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Teaching Assistant: Jannie Scott
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Course Description
This course provides the basic knowledge and skills needed to operate digital equipment (e.g., GPS and Total Data Stations) commonly used for collecting location data on archaeological sites. Classroom instruction on mapping and grid systems will be translated into "hands-on" instrument operation in simulated archaeological field conditions. An introduction to GIS software and its applications in archaeology will be provided. Data collected during simulated field operations will be processed and mapped using GIS software. An overview of near-surface sensing techniques, including a field demonstration with a magnetometer, will be included.

Prerequisites
There are no specific prerequisites for this course; however, students are expected to have some basic familiarity with desktop computers (PC's) and should be comfortable working with technology.

Textbook / Readings
The text (citation below) will be provided on the classroom computers as a PDF; it is also available as a free download from: http://www.esri.com/industries/ebooks/index.html. Note that although there will be a few questions on the first (and only) test drawn from the readings, most of this course will rely on lectures and hands-on exercises. The text is simply intended to provide a sample of some GIS applications in archaeology.

Environmental Systems Research Institute [ESRI]
2009 *GIS for Archaeology*. GIS Best Practices Series. ESRI. Redlands, CA. (e-book)

Grading Criteria
There will be a test early in the semester to assess knowledge of site mapping and digital data collection methods acquired during classroom lectures and readings (20% of semester grade). The remainder of the semester grade will be based field performance with the digital collection systems (20%) and maps produced using GIS software (3 maps accounting for 15%, 15% and 30% of semester grade; a grading rubric will be provided for each mapping assignment). The last mapping assignment will incorporate all of the knowledge gained in the course and function as a *de facto* final exam for the course; there will not be a traditional test on the final exam day scheduled by the University for this course.

The plus/minus grading system (100-93=A; 92-90=A-; 89-87=B+; 86-83=B; 82-80=B-, etc.) will be used in this course. Grades will not be curved. There will be a few opportunities for extra credit available as the semester progresses.

Attendance & Participation
Attendance is important in all of your classes. It is particularly important for this class. This is a techniques class that provides hands-on experience with hardware and software during every class meeting; as such attendance and participation are required. A class absence (for a valid reason, of course) must be made up one-on-one with the instructor or TA. Please contact your instructor as soon as possible (within 1-2 days) if you miss a class to arrange for a make-up. **More than one class absence without a make-up session will result in a letter grade drop in your final grade for the course**. Participation is a critical component of this course; "field performance with digital collections systems" (20% of your grade) cannot be accomplished without active participation.

University Policies
The usual University policies found on every syllabus are included at the end of this document. Please take a moment to review these policies. The "acceptable use" policy applies to the classroom computers and the TARL network.

Classroom Policies & Important Reminders
- You are encouraged to work together and help one another; however, the graded assignments (maps and test) MUST be completed on your own.

- If you are having problems with any of the course material or if any aspect of the course is unclear, please let your instructor know as soon as possible.

- Do not hesitate to make use of your instructor's office hours.

- Please remember to turn your phone's ringer off during class

- Have I mentioned that attendance and participation are important?

Assignment Deadlines & Test Date
(Refer also to the schedule below; other important dates from the University's academic calendar can be found near the end of this syllabus)
20 FEB – Test
27 MAR – Mapping Assignment 1 Due
17 APR – Mapping Assignment 2 Due
01 MAY – Mapping Assignment 3 Due

Tentative Schedule
Topics and activities are subject to change. Lectures often include live software demonstrations that students will follow along with on their computers. Many "activities" will take place outdoors on the grounds of the Pickle Research Campus. In the event of uncooperative weather, the week's outdoors activity will be postponed and replaced with classroom instruction and/or classroom activities as appropriate.

Jan 16

Course Introduction
Presentation: Maps in Archaeology – Past, Present & Future

Jan 23

Lecture: datum, grid systems, projections and maps; review of land navigation w/ map and compass

Jan 30

Lecture: GIS; getting started with ArcGIS
Activity: Locate our project area on a map with ArcGIS; identify and convert coordinates

Feb 6

Lecture: GPS technology; using GPS with maps
Activity: Navigate to our project area with consumer-grade GPS; establish datum with sub-meter GPS

Feb 13

TEST REVIEW
Activity: TDS set-up and basic operation; RTK set-up and basic operation

Feb 20

TEST
Activity: Establish backsight with RTK; TDS operation- COGO, topographic mapping, etc.

Feb 27

Lecture: GIS – layout view and map design
Assign MAP 1 (project location map)

Mar 6

Activity: Work on MAP 1
Activity: Practice equipment operation (Team A)

SPRING BREAK

Mar 20

Lecture: Geophysical survey [possible guest lecture]
Activity: Work on MAP 1
Activity: Practice equipment operation (Team B)

Mar 27

MAP PROJECT 1 DUE
Activity: Establish magnetometer collection unit with TDS
Activity: Operate magnetometer

Apr 03

Lecture: GIS – shapefiles, geodatabases, rasters
Assign MAP 2
Activity: Work on MAP 2
Activity: Practice operating field equipment (Team C)

Apr 10

Lecture: Downloading and working with field data; surfaces and basic analysis in ArcGIS
Assign MAP 3
Activity: Work on MAP 2
Activity: Practice operating field equipment (Team D)

Apr 17

MAP PROJECT 2 DUE
Lecture: Advanced GIS topics
Activity: Work on MAP 3
Activity: Students individually set-up TDS and operate GPS equipment (one at a time while everyone else works on mapping assignment; TDS set-up and GPS operation will be graded)

Apr 24

Lecture: Digital data in Texas archaeology; other types of digital data
Activity: Work on MAP 3
Activity: Continue individual TDS set-ups / GPS operation (graded)

May 01

MAP PROJECT 3 DUE
Course debriefing

Important Dates

(Please see the Registrar's academic calendar for official, definitive dates and deadlines)
17 JAN – Last day of the official add/drop period.
30 JAN – 12th class day (date the official enrollment count is taken)
1 APR – Last day an undergraduate may change registration to or from pass/fail

University Policies

Acceptable Use

This course utilizes University computers and network resources. The "Acceptable Use Policy" applies. This policy can be found at: http://www.utexas.edu/cio/policies/.

University of Texas Honor Code

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Scholastic Dishonesty & Plagiarism

Plagiarism is a serious violation of academic integrity. In simplest terms, this occurs if you represent *as your own work* any material that was obtained from another source, regardless how or where you acquired it. It is the student's responsibility to read and abide by the requirements for presentation, referencing and avoidance of plagiarism to be found at: http://deanofstudents.utexas.edu/sjs/acadint_plag_collab.php.

Documented Disability Statement

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact Services for Students with Disabilities at (512) 471-6259 (voice) or 1-866-329-3986 (video phone) or http://www.utexas.edu/diversity/ddce/ssd.

Use of E-Mail for Official Correspondence to Students

E-mail is recognized as an official mode of university correspondence; therefore, you are responsible for reading your e-mail for university and course-related information and announcements. University policy suggests that students should check email at a minimum of twice per week (your instructor recommends checking email daily). The University's policies and instructions for updating your e-mail address can be found at: http://www.utexas.edu/its/policies/emailnotify.php

Religious Holy Days

A student who misses classes or other required activities, including examinations, for the observance of a religious holy day should inform the instructor as far in advance of the absence as possible, so that arrangements can be made to complete an assignment within a reasonable time after the absence.

Behavior Concerns Advice Line (BCAL)

If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit http://www.utexas.edu/safety/bcal/.