GEOSPATIAL TECHNOLOGIES. COURSE SYLLABUS & OUTLINE. GEOGRAPHY 2364. Fall 2017 (CRN 81077)

GENERAL INFORMATION:

<u>COURSE DESCRIPTION</u>: A wide-ranging examination of the evolving technologies that are revolutionizing how people interact with each other and their environment and that involve using various digital technologies for communication and understanding the spatial distribution and provide for the mapping and analysis of earth features and human activities. These technologies include geographic information systems (GIS), the capture and use of remotely sensed and aerial and ground level imagery, global positioning system (GPS), the Internet, cellular telephones, tracking devices and other mobile technologies. Topics also include how GST are applied to key areas including earth and environmental sciences, recreation, travel, and criminal justice and security. Prospects and problems will be a major focus. Meets: Lecture: Tu.-Th. 11:00-12:20 in Lee Drain Building (LDB) room 327. Instructor: Dr. Mark Leipnik. Office Hours: Tu 9:30-10:30 in LDB 323. Phone: Ex. 3698, email <u>GEO_MRL@SHSU.EDU.</u>

Homepage: www:\\http\shsu.edu\~geo_mrl. Lectures will be emailed in PDF format to all registered students several weeks prior to each exam. Lectures are being revised to add new topics and may be updated periodically during the semester.

POLICIES:

<u>GENERAL</u>: Attendance at class is mandatory and will be taken at the beginning of each class; a roster will be used to facilitate this.

EXAMS & GRADING: There will be two midterms and an in-class power-point presentation on the TEAM PROJECT and a comprehensive final together worth a total of 1,000 points. The exams will have matching, true/false, multiple choice and/or short answer questions. The only Midterm will cover materials related to the nature of the technologies it will be worth 300 points; it will be on Thursday, October 19. The Final will emphasize material presented in the second half of the class and will be worth 400 points. Students will be divided into 2-3 member teams (alphabetically), each team will be given a Tom Tom 1-130 or EASE vehicle navigation system for their use over the later part of the semester. Each team of students will make a brief 10-20 minute in class oral power-point Presentation on the week of Nov. 28- Dec. 2, on their use of a Tom Tom to find vehicle navigation system and the errors in the geospatial data they have encountered using the system in their travels throughout the semester a copy of the power point will be submitted to the instructor, this assignment will be worth a total of 200 points. Be sure that if you or your partner do not have access to an automobile that you let me know and I will be sure not to pair two persons that are mobility limited or I will make other adjustments. Although the project can be done in several days it might involve 20-50 miles of driving, plan to take advantage of a trip and travel to an area that you or partner(s) are familiar with if it is possible. The Final will be on Wednesday, Dec. 7 from 2:30-4:30 pm. and will be comprehensive and worth 300 points. There will be a review session for the final on Wednesday, December 2 at which time the topic of the essay will be revealed and will be worth 300 points. Each exam will have a web based bonus question which will be provided

a week in advance.in class will be on based two midterm exams and a final with a total of 1,000 points available.

GRADING SUMMARY:

<u>900-1,000 points = A</u>	750-900 points = B	600-750 points = C
500-600 points = D	less than 500 points = F (a	and being eaten alive by rabid
Peruvian hamsters)		

ADDITIONAL INFORMATION:

<u>ACADEMIC DISHONESTY:</u> All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of academic dishonesty including, but not limited to, cheating on examinations or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. Penalties may include but are not limited to receiving no points on the assignment with which the academic dishonesty was associated, reduction of one or more levels in the ultimate course grade (say from a B to a C or D), or in serious cases receiving a failing grade in the course

<u>CHEATING/PLAGARISM POLICY</u>: Incidents of cheating will receive a sanction that is appropriate, typically the exam in which cheating was committed in reference to will provide zero point credit toward the final grade. Substitution of appropriate make-up assignment may be allowed at the discretion of instructor. <u>MAKE-UPS</u>: If a midterm exam is missed for a valid reason it can be replaced by an extra credit research paper of at least 20 pages. The final cannot be made-up. Missed classes can be made up by doing an extra credit report of five pages. All extra credit/make-up work will be approved by permission of the instructor and on a topic assigned by the instructor related to natural resources.

CLASSROOM RULES OF CONDUCT: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones and pagers must be turned off before class begins. Students are prohibited from eating or drinking in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive may be reported to the Dean of Students for disciplinary action in accordance with policy. STUDENTS WITH DISABILITIES POLICY: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired. SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf

<u>VISITORS IN THE CLASSROOM</u>: Unannounced visitors to the classroom must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom. This policy is not intended to discourage occasional visiting of classes by responsible persons.

<u>RELIGIOUS HOLIDAYS</u>: Students that are absent from class for the observance of a religious holy day are allowed to take an examination or complete an assignment scheduled for that day within reasonable time after the absence. The period of time during which assignments and exams will be excused includes travel time associated with the observance of the religious holy day. A student who wishes to be excused for a religious holy day must present the instructor of each scheduled class that he/she will be absent from class for religious reasons with a written statement concerning the holy day(s) and the travel involved. The instructor should provide the student with a written description of the deadline for the completion of missed exams or assignments. In such cases, the student will be required to take the test or submit the assignment early, unless there are good reasons for not being able to do so and the instructor has agreed to those reasons.

NOTE: There may be additional rules and requirements that are posted on the SHSU, College or Departmental web pages...

COURSE OUTLINE & READING ASSIGNMENTS:

In order to be well prepared for class students should read the chapters in the text book (Chiras, et al) in advance.

LECTURE 1: OVERVIEW.

Week 1. Lec. 1. Th. Aug. 25. First Class Meeting. (Handout syllabus, go over class Policies & Instructor Background).

PART I. LECTURES 3-: .

- Week 2. Lec. 2. Tu. Aug 29. Digital Technology. Lec. 3. Th. Aug 31. Computer Graphics & CGI.
- Week 3. Lec. 4. Tu. Sept. 5. What is special about spatial. Lec. 5. Th. Sept 7. Geographic Information Systems. Team membership.
- Week 4. Lec. 6. Tu. Sept. 12. The Internet & IP Addresses. Lec. 7. Th. Sept. 14. Interactive and Other Web-Maps
- Week 5. Lec. 8. Tu. Sept. 19. Aerial Photography & Remote Sensing. Lec. 9. Th. Sept. 21. Drones.

Week 6.

- Lec. 10. Tu. Sept. 26. LIDAR & Laser Scanning. Lec. 11. Th. Sept 28. GPS.
- Week 7. Lec. 12. Tu. Oct. 3. Vehicle Navigation Systems.Lec. 13. Th. Oct. 5. Sign out Tom Tom Units and describe team project.
- Week 8. Lec. 14. Tu. Oct. 10. Trackers and RFID (Radio Frequency ID). Lec. 15. Th. Oct. 12. Cellular Phones and Mobile Devices.
- Week 9. Lec. 18. Tu. Oct. 17. Mash-ups & Integration (Review for Midterm I) Lec. 19. Th. Oct. 19 MIDTERM
- Week 10. Lec. 20. Tu. Oct 24. Augmented Reality (Pokemon Go, etc.) (Return Midterm) Lec. 21 Th. Oct. 26. Transportation, trucking, logistics & self-driving cars.
- Week 11. Lec. 22. Tu. Oct. 31. Law Enforcement. Lec. 23. Th. Nov. 2. Defense.

Week 12. Lec. 24. Tu. Nov 7. Sports and Recreation. (W. Nov. 9). Lec. 25. Th. Nov. 9. Accuracy of Geospatial Data. (F. Nov. 11).

Week 13. Lec. 35. Tu. Nov. 14. Cost & Ownership. Lec. 36. Th. Nov 16. Privacy and Confidentiality (Is Big Brother Watching?).

Week 14. Thanksgiving Week. Nov. 20-Nov. 24. No Class meetings... A good opportunity to wrap up your TEAM PROJECT. Remember that if you go out of the area for the break that SATNAV data errors for that area can be used for your project...

WEEK 15. Lec. 28. Tu. Nov. 28. Presentations by teams Lec. 29. Th. Nov. 30. Presentations by teams.

WEEK 16.

FINAL EXAM: Tuesday, December 7. (12:00-2:00 pm).

(The exam is comprehensive but stresses material after 2nd midterm to greater extent).