Geography and Geoinformation Science 110-001
Introduction to Geoinformation Technologies

Fall 2017
Credits: 3
Tuesdays & Thursdays 12:00 PM – 1:15 PM, Exploratory Hall 2103

INSTRUCTOR INFORMATION

Dr. Sven Fuhrmann
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Exploratory Hall 2204
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Office hours: TU 1:30PM-2:30PM, TH 11:00AM-12:00PM and by appointment.

Teaching Assistant

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CLASSMATE CONTACT INFORMATION

Name	E-mail	Phone

CATALOG DESCRIPTION

This course introduces students to basic geoinformation technology concepts and applications. Students learn about and apply spatial data collection analytic tools and methods, including geographic information systems, and web-based map developments. Lectures examine social trends, ethical issues including privacy state of the art technological research and developments of geoinformation technologies in industry, government, education, and everyday life.

DISCOVERY OF SCHOLARSHIP COURSE

This class is identified as a Students as Scholars Discovery of Scholarship course, designed to introduce students to scholarship, and thus includes inquiry-based learning. A discovery of scholarship course means that you will be learning about how knowledge is generated and disseminated in geography and geoinformation science. This course focuses on the following topics: modelling the Earth with geospatial technologies, modern spatial data processing, functions of geographic information systems, cartographic representations, and applications of geospatial technologies to a variety of human and environmental applications. We will discuss the importance of scholarship in geoinformation science to the body of knowledge, information dissemination, and society. In GGS110, students will

- learn to distinguish between personal beliefs and scientific evidence,
- articulate how scholarship influences society,

- understand historical developments in cartography and geoinformation science,
- evaluate the credibility of source information, and
- understand how knowledge is visualized and disseminated to the public.

To learn more about Students as Scholars, visit oscar.gmu.edu.

MATERIALS

Required Text

None

Recommended References

Recommended reading material will be made available on Blackboard or handed out during lecture. Some sources are listed below; others may be added during the semester.

Arc News (ESRI). Subscribe for free newsletter at
http://www.esri.com/news/arcnews/subscran.html

Other Materials

Students will also require a 16GB USB Drive (or larger) for storage of their lab project materials.

George Mason Online account

It is essential that you activate your George Mason computer account, since we will be using Blackboard for communication and assignment purposes.

General Class Policies

This seminar will consist primarily of:

- Lab assignments,
- Self-initiated study and knowledge development,
- Written assignments: Written communication is an essential skill. All written assignments are expected to be completed with no grammatical or spelling errors. The assignments should be professionally acceptable,
- A project assignment, and
- Exams

Knowledge and Effort

This course requires significant computer file management skills and the ability to work within a Windows computer environment without assistance. You are **expected to spend considerable time developing thoughtful products**, conducting limited research to feed into your written assignments, as well as participate with others in the class and lab. Students must demonstrate a mature, professional, and conscientious effort toward class work and participation.

Attendance

Students are expected to attend class. This course introduces considerable material and requires many hours of work. Please do not fall behind your reading or assignments. Poor attendance will result in a poor final grade. Additionally, students are expected to arrive on time. Because of the size of this class, students entering the classroom late disturb the class activities. **Be present and be punctual.**

Late Work (Lab Assignments)

Late work will only be graded if it is **submitted within 5 working days of the due date**. Please note that late assignments will be subject to a 10% reduction in the final assignment grade.

If Blackboard is not working the day that assignments or labs are due, the due date is extended until Blackboard becomes available. To be certain, please contact your instructor or teaching assistant for further guidance.

Cell Phones
All cell phones need to be turned off during class and during examination periods.

Video and/or Audio Recording
Video and/or audio recording and distribution of lecture content is not permitted and require consent of the lecturer.

UNIVERSITY POLICIES

University ADA Statement and Policy
Students with special needs (as documented by the Office of Disability Services) that will require compensatory arrangements must contact the instructor no later than the fourth class period to discuss specific arrangements and logistics. Students who have not already done so will be required to contact the Office of Student Disability Services located at SUB I, Room 4205 (703.993.2474). George Mason University is dedicated to providing these students with necessary academic adjustments and auxiliary aids to facilitate their participation and performance in the classroom. The full ADA-compliant policy is available online at: http://ods.gmu.edu/

Academic Testing for Students with Disabilities

Students who are approved for testing accommodations have the option of using the Office of Disability Services exam lab to take in-class tests or quizzes with their accommodations. Any student who schedules a test with ODS must schedule tests during the in-class scheduled test time (or seek an exception from the instructor) and are expected to take the test at ODS. If a student schedules to take a test with ODS but decides that they will take the test in the classroom, the student will be responsible for notifying ODS and the instructor prior to the class start time.

Academic Integrity
Learning and teaching take place best in an atmosphere of intellectual fair-minded openness. All members of the academic community are responsible for supporting freedom and openness through rigorous personal standards of honesty and fairness. Plagiarism and other forms of academic dishonesty undermine the very purpose of the university and diminish the value of an education. Specific sanctions for academic dishonesty are outlined in George Mason Student Handbook. More information: http://oai.gmu.edu

MasonLive/Email (GMU Email)
Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program (including

messages related to this class) will be sent to students solely through their Mason email account. See http://masonlive.gmu.edu for more information.

University Policies
Students must follow the university policies. See: http://universitypolicy.gmu.edu.

Responsible Use of Computing
Students must follow the university policy for Responsible Use of Computing. See: http://universitypolicy.gmu.edu/policies/responsible-use-of-computing.

Diversity
"George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.
An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected." http://ctfe.gmu.edu/professional-development/mason-diversity-statement/

GRADING AND EXAMS (INCL. BRIEF DESCRIPTION OF MAJOR COURSE REQUIRMENTS)

Grades will be based on the following table:

Activity	Percent
Lab Grade (The lab grade represents the submitted lab assignments)	50
Exam 1 (A written exam – date see below)	15
Exam 2 (A written exam – date see below)	15
Exam 3 (A written exam – date see below)	20

A+	100%
A	93-99%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D	60-69%
F	<60%

NOTE: Your final percentage will round to the nearest whole number, e.g., 89.2=89 but 89.6=90.

Exam #1 (in class exam)
Thursday, October 5, 2017 (during normal class time)

Exam #2 (in class exam)
Thursday, November 2, 2017 (during normal class time)

Exam #3 (take home exam)
Exam given out: Thursday, December 7, 2017 (students can start working on exam during normal class time)
Exam Due (on Blackboard): Thursday, December 14, 2017, 1:15PM

Exams policies
Exams are one form of student assessment. This course utilizes multiple methods for assessing student progress and performance to include exams, projects, and written assignments. There will be no make-ups or early assessments, with the exception of extreme personal hardship, which must be discussed with the instructor prior to the assessment date and agreed upon. In these limited, documented cases, the following policies apply: 1) the make-up exam is different from the original exam but no more difficult, and 2) the format of the exam may be changed.

Important Dates

August 28: First day of classes

September 4: Labor Day (University closed)

September 25 - October 20: Midterm progress reporting period (100-200 level classes)

September 29: Last day to drop class

October 5: Exam #1

October 9: Columbus Day (Recess)

October 10: Monday classes meet instead of Tuesday classes

October 27: Selective Withdrawal deadline.

November 2: Exam #2

November 22 - 26: Thanksgiving Break

December 7: Exam #3 (Take Home Exam, Due date: December 14, 1:15PM, EST (Blackboard))

December 9: Last day of classes

TENTATIVE COURSE OUTLINE – GENERAL DESCRIPTION OF SUBJECT MATTER

NOTE: This outline is subject to modification. Students will be notified of any changes. Students are encouraged to download the lecture slides from Blackboard.

Day	Date	Topic	Labs / Notes
T	8/29	Syllabus, Introduction	
R	8/31	Cognitive Maps/History of Cartography/Exploring Earth	
T	9/5	The Earth and Earth Coordinates/GPS	
R	9/7	The Earth and Earth Coordinates/GPS	Geocaching **LAB1**
T	9/12	Map Projections	Geocaching **LAB1**
R	9/14	Map Projections / Coordinate Systems	
T	9/19	Coordinate Systems	Topo Maps **LAB2**
R	9/21	Map Scale and Measurements	Topo Maps **LAB2**
T	9/26	Topographic Profiles	Topo Maps **LAB3**
R	9/28	Geospatial Data (Vector/Raster)	Topo Maps **LAB3**
T	10/3	Geospatial Data / Exam Review	
R	10/5	Exam #1	
T	10/10	No class, Columbus Day Recess	
R	10/12	Geospatial Data / Data Quality / GMU Library	
T	10/17	Thematic Maps	Thematic Map **LAB4**
R	10/29	Thematic Maps	Thematic Map **LAB4**
T	10/24	Thematic Maps II	Thematic Map **LAB5**
R	10/26	Thematic Maps II	Thematic Map **LAB5**
T	10/31	Maps and Society / Exam Review	
R	11/2	Exam #2	
T	11/7	Volunteered Geographic Information	OSM **LAB6**
R	11/9	Volunteered Geographic Information	OSM **LAB6**
T	11/14	Web-based Mapping	Geography awareness week / OSM Mapping Assignment **LAB7**
R	11/16	Web-based Mapping	Geography awareness week / OSM Mapping Assignment **LAB7**
T	11/21	Web-based Mapping	
R	11/23	Thanksgiving Recess	
T	11/28	Mobile Maps / Privacy Issues	Visualization Challenge **LAB8**
R	11/30	Credibility of Maps	Visualization Challenge **LAB8**
T	12/5	Geovisualization / Research Frontier	Visualization Challenge **LAB8**
R	12/7	Exam #3 (Take Home Exam)	Given out during class time
R	12/14	Due Date for Exam #3	Due on Blackboard at 1:15PM EST