Geography and Geoinformation Science 110-DL1
Introduction to Geoinformation Technologies

Spring 2020
Credits: 3
Online Course - Async Instructional Method – GMU
Blackboard

INSTRUCTOR INFORMATION

Chengbi Liu
Email: cliu19@masonlive.gmu.edu (Emails will typically be answered within 24-36 hours Monday to Friday; emails sent during the weekend will be answered on the following Monday)
Office Address: Research Hall 290/Exploratory Hall 2202
On-Campus Office hours: By appointment.
Online Office hours: Friday 3:00PM - 5:00PM (via Blackboard Collaborate Ultra).

WHEN

A learning module will be released each week on Monday and should be completed by the following Sunday (11:59pm Eastern time). Due dates and points will be specified separately in the instructions of each assignment/activity.

WHERE

Online via Blackboard (https://mymasonportal.gmu.edu)

Teaching Assistant

TBA

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

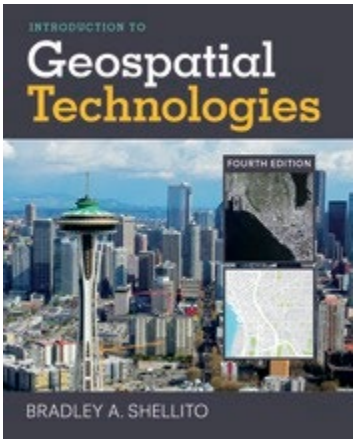
- learn to distinguish between personal beliefs and scientific evidence,

- 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
Introduction to Geospatial Technologies (2018, 4th edition), Bradley A. Shellito, Macmillan, ISBN-10: 1-319-06045-5; ISBN-13: 978-1-319-06045-9; Format: Paper Text, 560 pages



Recommended References
Additional recommended reading materials will be made available on Blackboard.

Other Materials
Students will also require a 16GB USB Drive (local storage or cloud platform storage) for storage of their lab and 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. Mason requires instructors to communicate with students only via their GMU emails.

General Class Policies
This class consists primarily of:
- Online lectures and readings
- Lab assignments,
- Written assignments,
- A project assignment, and
- Exams

Course Format
The course will be delivered as a distance-learning course that combines individual review and study of course materials, as well as online asynchronous discussions and other interactions.

The key building blocks of this course are learning modules, which are built around a specific topic in the course. Throughout the semester course activities will be following this schedule:

- Each week a learning module will be released on Monday. Each module should be completed within one week (unless stated otherwise).
- If a learning module includes an assignment it will be released with the module. Typically, one week will be given to complete the assignment, depending on its scope. The exact due date of each assignment will be indicated in the assignment instructions.
- The course discussion board will be monitored every day during regular business hours (except for weekends and university holidays).

Technology Requirements

Please note: for your convenience, the GGS computer lab that is in Exploratory Hall 2202 is available to you for your work in this course. This lab is equipped with high-end PCs and have the software components you will need to participate in this course.

Hardware

In order to participate in the course, you must have access to:

- A Windows or Macintosh computer with at least 4 GB of RAM (8 GB of ram is highly recommended) and a dual core (or better) processor is highly recommended.
- A reliable broadband Internet connection.
- A computer headset with a microphone (a headset with a separate microphone can also be used).
- A microphone. Please note that if you wish to use your computer "built-in" microphone you must use a headset.
- A web camera is highly recommended but not required.

Instructional Software

To deliver the course and support its activities the following software tools are required:

- A supported web browser (See Blackboard Support for supported web browsers)
- Access to the course's Blackboard website (Log into http://mymason.gmu.edu, select the Courses Tab)
- QGIS (free download)
- Adobe Acrobat Reader (free download)
- PDF Creator (optional) - An open source PDF printer (free download)
- Microsoft Office (freely available to Mason students)

Late Work (Lab Assignments)

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

Netiquette

In our online learning community, we must be respectful of one another. Please be aware that innocent remarks can be easily misconstrued. Sarcasm and humor can be easily taken out of context. When communicating, please be positive and diplomatic. I encourage you to learn more about Netiquette.

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: University ADA Statement and Policy

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: Academic Integrity

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 MasonLive/Email (GMU Email) for more information.

University Policies

Students must follow the university policies. See: University Policies.

Responsible Use of Computing

Students must follow the university policy for Responsible Use of Computing. See: 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." See: Diversity

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

Grades will be based on the following table:

Activity	Percent
Lab/Assignment Grade (This grade represents all submitted assignments)	60
Short Presentation "My Geoinformation Technologies"	20
Exam 1 (A written exam – date see below)	10
Exam 2 (A written exam – date see below)	10

Grade Breakdown:

Grade	Grade Breakdown
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.

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.

Being a Distance Learning Student

Being a distance-learning student is different in some ways from being a face-to-face student. In online learning self-discipline, time management, and organization is even more important since the learning tasks are not set for specific class hours – instead the material is formed as a set of learning modules, which students may complete at their own pace. While each one of us may have a different learning style, there are several key activities that you should consider and incorporate as you develop your approach to taking a distance-learning course. Such activities include, for example:

- Review this syllabus as well as the course website and make sure you have a good understanding of the course expectations.
- Ensure uninterrupted access to the required hardware and software before the semester begins (see the Technical Requirements section). Not having the necessary hardware and software tools will impact your ability to participate in the course.
- Build a schedule for your learning activities and follow it. Note that while distance-learning course often do not include extensive face-to-face time, you are required to spend time reading materials, completing assignments, and taking exams.
- Take the time to review all the assigned course materials (videos, written instructions, book chapters, etc.), and keep notes and comments on what you reviewed. Try to identify key themes and strive to develop a thorough understanding of them.
- Complete assignments on time and submit all assignments. While this is true for both face-to-face and online courses, in a distance learning course it is sometimes more difficult to notice that you are missing work. Keeping in touch with the course instructor and your peers can help with this.
- Keep track of all the important dates of the course (assignment due dates, exam dates, etc.), as well as the completion time of each learning module.
- Participate in face-to-face or synchronous online sessions as much as possible and attend face-to-face office hours as necessary. While the course is offered online, you should seek opportunity to interact with the teaching team and other students as much as possible. Such interactions could make a big difference in your learning experience.

A key factor in your success as a distance-learning student is being proactive and self-aware. Like any other learning experience, distance learning requires you to be responsible for your own learning experience. As most of the learning is done individually, it is often easy to overlook important details or even miss key ideas in the material. Therefore, it is essential that you keep in touch with the class and with the instructor and seek feedback on your progress and work. Throughout the course you will have several ways accomplish this:

- The Discussion Board: the course discussion board on blackboard contains several discussion themes. Post any questions or feedback on the board.
- Face-to-face office Hours: I hold weekly office hours. You are welcome to drop in during these office hours. If these times are not convenient for you, please contact me to schedule an individual appointment.

The benefit you will gain from any of these options, however, depends on how proactive you are with respect to seeking interaction, feedback, or help. Your success in the course, especially if this is your first distance learning experience, depends on how proactive you are in identifying any issues you have and seeking feedback.

In addition, the course instructor will send students announcements and updates via the Blackboard announcements tool. Often you will receive these messages as emails to your Mason email account. Please do not ignore these messages – it is your responsibility to check your Mason email account and the course website several times during the week. Another important resource that could contribute significantly to your success is the class community. If you have questions about a course topic, it's likely that some students in your class could help, and sometimes simply discussing the topic with a fellow student will help you understand it better. Therefore, it is important that you establish from early on some connections with other students, participate in discussions in one of the class forums, and form study groups.

When communicating with your peers (and your instructor) it is important to be respectful of one another. Please be aware that innocent remarks can be easily misconstrued, and that sarcasm and humor can be easily taken out of context. When communicating, please try to be positive and offer constructive feedback.

TENTATIVE COURSE OUTLINE – GENERAL DESCRIPTION OF SUBJECT MATTER
NOTE: This outline is subject to modification. Students will be notified of any changes.

Week	Topic	Readings	Labs / Assignments
1/21-1/26	Introduction to Geoinformation Technologies	Ch. 1	
1/27 – 2/2	Geographic Data	Ch. 2	**LAB1:** Geographic Data
2/3 - 2/9	Volunteered Geographic Information, Data Quality		**LAB2:** OpenStreetMap
2/10 – 2/16	Global Positioning Systems	Ch. 4	**LAB3:** Geocaching
2/17 – 2/23	Geographic Data Models	Ch. 5	**LAB4:** QGIS I
2/24 – 3/1	Spatial Analysis I	Ch. 6	**LAB5:** QGIS II
3/2 - 3/8	Spatial Analysis II **Exam 1**	Ch. 6, 7	**LAB6:** QGIS III
3/9 – 3/15	Spring Break		
3/16 – 3/22	Geo-referencing and Networks	Ch. 3, 8	**LAB7:** ArcGIS Online I
3/23 – 3/29	Photo Interpretation / Remote Sensing Basics	Ch. 9	**LAB8:** ArcGIS Online II
3/30-4/5	Remote Sensing and Satellite Systems	Ch. 10	**LAB9:** ArcGIS Online III
4/6– 4/12	Cartography	Ch. 7	**LAB10:** ArcGIS Online IV
4/13 – 4/19	**Exam 2**		Work on Final Presentation
4/20 – 4/26	Web Mapping & Future of Geoinformation Technologies	Ch. 13, 14, 15	Work on Final Presentation, Final Presentation Draft due 4/26
4/27 – 5/7	Work on Final Presentation		**Short Presentation:** "My Geoinformation Technologies", Final Presentation due on 5/7