GEOGRAPHY 6304 **Spring Semester 2018**

Instructor:
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Classroom Assistant: Adane (Eddie) Bedada, adbe@gwu.edu

Course Duration: 01/16/18 – 05/15/18

COURSE DESCRIPTION:
This course is designed to introduce students to both the science and skills of cartography and geographic information systems (GIS), by examining topics such as visualization, map projections, map interpretation skills, thematic mapping, and most importantly, the fundamentals of map creation using computer-assisted techniques. The GIS portion of the course will focus on obtaining a good introductory competency with the GIS application ArcGIS 10. There are no prerequisites for this course, but GEOG 6304 is the first in a sequence of required core courses toward the fulfillment of the Graduate Certificate in GIS.

COURSE ROLE WITHIN THE GIS CERTIFICATE PROGRAM:
Beginning in the Fall 2014 the Department of Geography will begin offering a Graduate Certificate in Geographic Information Systems. GEOG 6304 (this course) is the first in a sequence of required core courses for the completion of the certificate. To obtain a GIS certificate, the student is required to complete 12 credits of geospatial coursework within the Geography Department, 3 core courses (9 credits) and 1 additional elective to complete the final 3-credit requirement. The choice of final course must be discussed with the program advisor.
If you are interested in this program, see your instructor for more information.

INSTRUCTOR BIO:

Andrew Wiseman works full time with Apple, Inc., on the Maps team. Previously he worked for seven years with the US Agency for International Development's

Office of Transition Initiatives as co-team lead for the Data Analysis Team. Mr. Wiseman has done GIS, mapping and tech field work in Haiti, Afghanistan, Pakistan and Honduras, making maps, training staff and leading projects such as mapping the informal bus system in Tegucigalpa and crime and gang territory in San Pedro Sula, as well as in Haiti after the 2010 earthquake. Mr. Wiseman has worked in geography and GIS for 16 years, previously for Westat, a research company, and the Government of the District of Columbia's GIS office before joining USAID in 2008. He also writes about maps and geography for various sites such as the Atlantic's City Lab blog, Curbed and DCist and is a co-organizer of MaptimeDC.

COURSE GOALS:

On successful course completion:

1. Students will be able to demonstrate an introductory proficiency with ArcGIS, the industry-standard desktop GIS software.
2. Students will be able to identify the most appropriate mapping techniques for a wide range of spatial data sources.
3. Students will be able to analyze and solve problems using spatial analysis techniques.
4. Students will be able to critique existing map products, and cartographic methods.

COURSE LEARNING OBJECTIVES:

1. Create a basic comprehensive map.
2. Apply appropriate map projections to GIS maps.
3. Choose and apply appropriate thematic mapping techniques .
4. Apply appropriate visualization techniques, such as color applications, color ramps, font, shading & insets.
5. Apply appropriate geoprocessing and spatial analysis tools from the ArcGIS suite to geospatial problems.
6. Prepare and integrate external databases into the GIS environment for mapping purposes.
7. Critique existing map products along the lines of visualization, projection choice, data choice, and data classification choice, aesthetics, layout.

COMMUNICATION POLICY

Please communicate with your Professor either in person during or after class, or via email.

If you have technical questions regarding the lab exercises while working in the lab, please email Prof. Andrew Wiseman. Prof. Richard Hinton may also be available for in-person assistance, he manages the GW Spatial Analysis Lab.

OVERVIEW OF COURSE MATERIALS & INSTRUCTIONAL AIDES

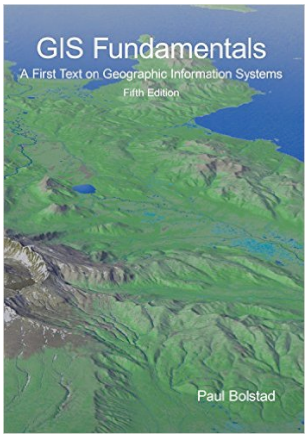
1. Lecture Materials
2. Reading Materials
3. ArcGIS Practical Labs
4. Video Library of Map Improvement Techniques

1. LECTURE MATERIALS

PowerPoint Lectures will be delivered in class, and will be made available on Blackboard as .pdf documents following the class itself. (Please see the course schedule calendar at the end of the syllabus for detailed description of topics). If we have to miss a class due to a campus emergency, such as inclement weather, a narrated version of that lecture will be made available to the students on Blackboard.

2. READING MATERIALS:

The textbook for this course is:



GIS FUNDAMENTALS: A First Text on Geographic Information Systems
Author: Paul Bolstad
Publisher: XanEdu Publishing Inc; 5th edition edition
Language: English
ISBN-10: 1506695876

The fifth edition of the book may be purchased online at: http://www.paulbolstad.net/gisbook.html or at the GWU Bookstore
It is available in either digital or hard copy; both are acceptable.
Additional reading materials will be assigned and made available on Blackboard.

3. ArcGIS Homework Assignments

The ArcGIS homework assignments are designed to enhance your understanding of the lecture & reading materials and provide hands-on experience with commonly used techniques in GIS. There are 4 homework assignments in total. The assignment will be conducted using the desktop software ArcGIS 10.1

Students will be provided with illustrated step-by-step lab materials to guide them through the assignments. Lab instructions will be made available on blackboard and the GIS data will be made available on the departmental server (Instructions on software and data access will follow). Deliverables must be saved digitally in your folder. The instructor will not be available for help after 5pm on the due date.

4. Short Videos on ArcGIS Navigation & Simple Map Improvement Techniques

ArcGIS is a powerful analytic and cartographic software, with many different tools and functions available to the mapmaker. The creation of an aesthetically pleasing map is a skill that takes time to master – and is a skill best demonstrated, rather than described. Although the practical labs and homework assignments deal with both the analytical and cartographic elements of the GIS software, the videos will augment the cartographic/design element.

STUDENT ASSESSMENT STRATEGY

GEOG 6304 will be assessed using the following methods:

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1. Practicums (3 Practical Labs – during scheduled class time)
2. Homework Assignments (4 Assignments – Homework)
3. Testing (2 Tests, Week 3 & Week 6)
4. Map Critique (Homework)
5. OSM Assignment (Begin in Class – finish as Homework)
6. GIS Proposal (Homework)

1. Practicums:

Practical sessions are designed to give the student hands on experience working with ArcGIS, with the instructor present, to field any questions, and offer assistance. Each of the 3 practical sessions will deal with new processes/skillsets. Students have an additional two days to complete the practical deliverables.

2. *ArcGIS Homework Assignments:*

The homework exercises are designed to enhance your understanding of the class materials and provide hands-on experience with commonly used techniques in GIS. The 4 assignments are ArcGIS 10.1 based. Access to the data and the ArcGIS software will be made available through the Citrix desktop virtualization environment.

3. *Testing:*

Tests will be a combination of multiple choice and short answer questions, that cover information from both the lectures AND the readings. The tests are NON-CUMULATIVE. If you miss a test, there is no make-up without official documentation!

4. *Map Critique:*

For this assignment students critique a map found in the public domain (magazines, newspapers, journals, but available online), ideally a map related to a current event. Critiques will be posted to the Map Critique discussion forum.

5. *Open Source Mapping Assignment with OpenStreetMap:*

OpenStreetMap (OSM) is an open source, public collaboration to create a free editable map of the entire world. Many people consider OSM to be the map version of Wikipedia. Data is collected both in the field (typically using GPS device), and in the lab (digitization from sponsored imagery providers). The OSM map layer was used extensively by emergency response and relief workers in Haiti following the earthquake in 2010 and in the recent Ebola epidemic.

6. *GIS Proposal:*

Students will undertake a GIS proposal assignment that uses spatial analysis to investigate and/or remedy a specific issue. Guidelines for appropriate topic choice will be provided; final topic choice MUST be cleared through the instructor. Specific guidelines for assignment structure will be provided on blackboard.

SPATIAL ANALYSIS LAB

The Geography Department's Spatial Analysis Lab is open and available 9-5pm, Monday-Friday when there is not a class taking place. You may use computers there instead of using Citrix. The class schedule is on the Department's website: http://geography.columbian.gwu.edu/

GRADING FOR STUDENT ASSESSMENT

There are **NO EXTRA CREDIT** assignments, so please **DO NOT** ask.

IMPORTANT NOTE: Assignment publication dates, and assignment due dates are stated clearly on your Course Schedule and Outline document – **it is your responsibility to be familiar with these dates.**

Assignment	Point Value Per Assignment	Number of Assignments	Total Percent of Final Grade
Homework	100	4	36 (9% each)
Testing	100	2	24 (12% each)
Practicum	100	3	15 (5% each)
OSM assignment	100	1	10
GIS Proposal	100	1	10
Map Critique	100	1	5
Total Percent			100

GRADING SCALE

A	92+	C+	72-75	D-	52-55
A-	88-91	C	68-71	F	<52
B+	84-87	C-	64-67		
B	80-83	D+	60-63		
B-	76-79	D	56-59		

CLASS POLICIES:

Late assignments

Late Assignments will not be tolerated. All late materials will be penalized at a rate of 5% per day.

Tests

It is YOUR responsibility to be available at the appointed examination time. If you miss a scheduled examination there will be no reschedule UNLESS Official Documentation is provided.

Absences

If you are going to miss class, it must be for a good reason, and please email your professor ahead of time. We may require proof of the absence such as a doctor's note.

Reading Materials

The student is expected to obtain the required textbook by the third week of class. The instructor will make readings for the first three weeks available online, as these are a combination of textbook (scanned chapters) and additional resources. You will use the text more heavily in the latter (GIS) section of the

course. It is possible to get a digital copy of this text book, so there is no excuse to be without it by the second week.

TECHNOLOGY

Software Requirements

As this is an online course a significant portion of your work will require access to a computer with an internet connection, and the following software:

- Microsoft Word
- Microsoft Excel
- Mozilla Firefox Web Browser, or Safari Web Browser

- ArcGIS 10.3
  ArcGIS 10.3 will be made available to all students through the Citrix desktop virtualization environment. Each student will be given an account and password, and will be expected to login, download the Citrix plug-in, and test connectivity by the end of the first week of class. The Citrix desktop virtualization environment will run on any platform (PC or MAC).

- Jing
  The student is required to obtain, install, and be familiar with the open source software Jing. This software can be used to create and mark-up screen captures, and short-videos. Should the student experience difficulties with the lab material this is a more efficient way to illustrate the problem; rather than a detailed email, or discussion board submission

Student Technology Services

If you have any problems with software in this course, be sure to reference the Help tab in your left-hand navigation for more information.

UNIVERSITY POLICIES

Netiquette

Please observe the following rules of Netiquette when submitting material online:

- Remain professional, respectful and courteous at all times
- If you have a strong opinion on a topic, it is acceptable to express your opinion as long as it is not phrased as an attack. This is an environment for learning and understanding; therefore please be gracious with differing opinions
- Proof read and spell check all posts.

The instructor reserves the right to remove any post that is deemed inappropriate for the forum without prior notification to the student. This will include any post containing language that is offensive, rude, profane, racist or hateful. Posts that are seriously off topic or serve no purpose other to vent frustration will also be removed.

ACADEMIC HONESTY

All graded work must be completed in accordance with The George Washington University Code of Academic Integrity.
Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. Common examples of academically dishonest behavior include, but are not limited to, the following: cheating, fabrication, plagiarism, falsification and forgery of University academic documents, and facilitating academic dishonesty.
Please familiarize yourself with the University Code of Academic Integrity (http://www.gwu.edu/~ntegrity/code.html)

STUDENTS WITH DISABILITIES

If you feel you may need an accommodation based on the impact of a disability, please contact me privately to discuss specific needs. Please contact the Disability Support Services Office at (202) 994-8250, Suite 242 Marvin Center, http://gwired.gwu.edu/dss, to establish eligibility and to coordinate reasonable accommodations.

UNIVERSITY COUNSELING CENTER (UCC)

The University Counseling Center (UCC) offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations, confidential assessment, counseling services (individual and small group), and referrals. They can be reached at (202) 994-5300.

ALERT DC

Alert DC provides free notification by e-mail or text message during an emergency. Visit GW Campus Advisories for a link and instructions on how to sign up for alerts pertaining to GW. If you receive an Alert DC notification during class, you are encouraged to share the information immediately.

GW ALERT

GW Alert provides a popup notification to desktop and laptop computers during an emergency. In the event that we receive an alert to the computer in our classroom, we will follow the instructions given. You are also encouraged to download this application to your personal computer. Visit GW Campus Advisories to learn how.

ADDITIONAL INFORMATION

Additional information about emergency preparedness and response at GW or the University's operating status can be found on GW Campus Advisories or by calling the GW Information Line at (202) 994-5050.

STUDENT EXPECTATIONS

PLEASE DO…

- **DO** Treat this syllabus as a contract and discuss confusing items immediately with the instructor.
- **DO** Make appropriate use of your instructor's time. Approach him/her immediately when difficulty arises.
- **DO** Check your email regularly.
- **DO** Know the University Regulations (http://www2.gwu.edu/~bulletin/ugrad/unrg.html)

DO NOT…

- **DO NOT** Wait until the day something is due to begin assignments - These are challenging assignments that take thought and effort – allow ample time to ask questions of the instructor and work through technical difficulties and/or the discussion forum.
- **DO NOT** Email the Professor on the day an assignment is due, and expect email turn around in time for assignment submission