TENTATIVE SYLLABUS - GEOGRAPHY 215 online - UW-Milwaukee

GEOGRAPHY 215, Summer 2019 (07/22 – 08/17)
Introduction to Geographic Information Science
Lectures: Canvas online (https://uwm.edu/canvas)

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COURSE DESCRIPTION
This course introduces basic concepts and techniques of Geographic Information Science (GIScience)/Geospatial Technology to students who have no prior GIS background. It emphasizes a wide variety of concepts and terms of GIScience as well as basic skills in using GIS software. All class materials (lectures, exercises, and quizzes) are available online through Canvas (https://uwm.edu/canvas). Each topic will be introduced as a module that includes video lecture with transcript followed by an online quiz and an exercise. Discussion forums will be host in course site. Students are expected to learn through the online materials, and to interact with each other through the online forums, that is, students are expected to actively participate by not only asking questions but also answering others’ questions, sharing their learning experience via the online forums. With all the flexibility this online course offers, it has fast pace that requires students to manage their time judiciously. Engaging more online interaction would make the learning more efficient. Please note that it is assumed that all software programs used in this class are based on Windows operation system.

PREREQUISITES
NONE

LEARNING OUTCOMES
1. Understanding a couple of major GIScience concepts, including projection, GPS, cartography, and remote sensing etc;
2. Practicing basic GIS techniques in data processing and analysis;
3. Knowing how to make basic cartographic maps.

REQUIRED TEXT (RESERVED IN UWM LIBRARY)

COURSE REQUIREMENTS
1. EXERCISES. Each module has a lab exercise that will be required to complete as homework.
2. ONLINE QUIZZES. Each module includes an online quiz.
3. ONLINE EXAMINATIONS. Two online examinations will be offered through Canvas.
4. CLASS PARTICIPATION. This requires students actively participate by asking and answering questions on the online discussion forums. An initial introduction post will be required within the first week. All online activities will be counted in calculating the class participation grade. I hope this online course can be a small online “ecosystem” in which students interact and help each other.

WORKLOAD/TIME COMMITMENT, on average, a student is expected to spend the following amount of time (hrs) in this class: time in classroom (40), time spent online reading lecture and other materials (13), time in
GRADING AND EVALUATION

1. **Quizzes (30%)** The online quizzes account for 30% of the final grade. Students will be asked to complete them by their respective due dates.

2. **Exercises (40%)**. Each module includes lab/exercise. The lab assignments will be graded, and they totally account for 40% of the final grade. Late penalty will apply.

3. **Examinations (20%)**. There will be a mid-term and a final examination (10% for midterm and 10% for final). Both will be offered online.

4. **Class participation (10%)**. An introduction post to the introduction forum will be considered as part of the participation. Questions on exercises and quizzes are expected to post to the online forums. Asking and answering questions and reading others’ posts are the major components of the class participation. Sharing how you learn and material you feel helpful would also be considered as class participation. Anything else that would help you and others’ learning will be considered. All these online activities will be counted for online class participation grade.

5. **Grading Scale:**
   - A = 90-100%, A- = 87-89.99%
   - B+ = 83-86.99%, B = 80-82.99%, B- = 77-79.99%
   - C+ = 73-76.99%, C = 70-72.99%, C- = 67-69.99%
   - D+ = 63-66.99%, D = 60-62.99%, D- = 57-59.99%
   - F = 0-56.99%

**SOFTWARE**

Many on-campus computers have installed ArcGIS software (pay attention the opening hours in the specific labs or library). Refer to the following link (https://uwm.edu/technology/ccls/) to see where these computers are located. You can work on your exercises and homework using these campus computers. You might need a thumb drive (either flash drive or online space, like OneDrive, google drive) to store what you have completed, so that you don’t have to start over next time. There might be some minor inconsistency between your exercise book and the ArcGIS installed on the computers you use. These inconsistencies should be very easy to figure out. ArcGIS is rapidly changing software, and dealing with these inconsistency is a part of ArcGIS experience.

In addition, if you want to do the assignments using ArcGIS in your own computer, a free (0 $) one-year version of the ArcGIS can be purchased from the UWM Software Shop. You have to purchase it at least 48 hours before when you want to use it.

**ArcGIS was made for Windows.** We cannot help if you want to use ArcGIS in other operating systems. If you have an Apple Computer but running Windows, you can install ArcGIS for Desktop using VMWare, Bootcamp, or Parallels. ArcGIS is not supported on the Mac operating system. See the following link for supported operating system info from ESRI, https://desktop.arcgis.com/en/system-requirements/latest/arcgis-desktop-system-requirements.htm

A few other free software will also be used. The textbook provides instructions on where and how to download them. They will also be available on Canvas modules. All of them work on Windows operation system. Many of them do not have Mac version.

CanvaS(https://uwm.edu/canvas)

Announcements, lecture slides, lab instructions, and grades will be distributed through Canvas. It is students’ responsibility to check your Canvas account and UWM email account regularly.

course site.
Some software is upgraded faster than the tutorials in our labs. It could happen that you might not be able to find the button or menu directly from where the tutorials told you. Mostly, the functions are still supported by the software; they might be just moved to somewhere else; a little more exploration would help. While this for sure will frustrate some of you, but it is a part of reality in the rapid changing IT field. Remember to use the online forum when you cannot solve it yourself, or share your experience if you have.

GENERAL COMPUTING HELP
If you have general computer or computing problems, you can always consider the UWM Help Desk (https://uwm.edu/technology/help/) for potential help.

- Telephone: (414) 229-4040
- Toll Free Number: 877-381-3459
- Walk-in help desk location: Bolton 225
- And “Get Tech Help web portal:”
  https://uwm.cherwellondemand.com/CherwellPortal/CampusTechnology

These problems may include (but not limited to) managing folders and files using Windows Explorer, transferring files using an FTP server, Compress or Unzip files, or installing software on your own personal computer, and etc.

POLICIES
Please be advised that Geography 215 abides by all the University of Wisconsin – Milwaukee’s official policies on disabilities, religious observances, active military duty, incompletes, discriminatory conduct, academic misconduct, complaint procedures, and grade appeal procedures. For more information, please see the following link, https://uwm.edu/secu/syllabus-links/

If you need any special accommodations due to disability or illness, please first seek help from the Accessibility Resource Center at UWM (https://uwm.edu/accessibility/). They will provide professional help and then inform me for any accommodations I should provide. I will do my best to accommodate. You can always contact me for any help you need to facilitate your learning.

Please be advised that UWM expects all students to be honest in academic performance. Failure to do so may result in discipline under rules published by the Board of Regents (UWS 14). The following link has some examples of the most common forms of academic dishonesty,

http://www4.uwm.edu/dos/conduct/academic-misconduct.cfm
The following are the tentative topics to be covered (07/22/2019-08/17/2019). The specific schedule for each topic, quiz, and assignment will also be available in calendar or to-do list on Canvas. The course is designed as self-paced, that is, you don’t have to follow the schedule. As soon as you complete one module, you can start the next module.

<table>
<thead>
<tr>
<th>TOPIC #</th>
<th>DATES</th>
<th>DESCRIPTION</th>
<th>CHP</th>
<th>QUIZ &amp; LAB</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Jul.22-24</td>
<td><strong>Introduction</strong> to Geospatial Technologies, Geospatial Jobs, Geospatial Data, Volunteered Geographic Information, Geolocation, and Google Earth</td>
<td>1</td>
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<td>2</td>
<td>Jul.25-26</td>
<td><strong>Coordinate System &amp; Projection:</strong> Locations in a Digital World, Position Measurements, Datums, Coordinate Systems, GCS, Map Projections, UTM, and SPCS</td>
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<tr>
<td>3</td>
<td>Jul.29-31</td>
<td><strong>Georeferencing:</strong> Reprojecting, Georeferencing, Control Points, and Transformations.</td>
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<td>4</td>
<td>Aug.1-4</td>
<td><strong>GPS:</strong> GPS origins, Position Measurement, Errors, Accuracy, GNSS around the World, Applications, and Geocaching.</td>
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<td>Mid-term</td>
<td>Aug.5</td>
<td>Mid-term will be a 2 hour online exam.</td>
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<td>5</td>
<td>Aug.6-7</td>
<td><strong>Basic GIS:</strong> Geographic Information Systems, Modeling the Read World, Vector Data and Raster Data, Attribute Data, Joining Tables, Metadata, ESRI, ArcGIS and QGIS.</td>
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<td>6</td>
<td>Aug.8-9</td>
<td><strong>Basic GIS Spatial Analysis:</strong> Database Query and Selection, Buffers, Overlay Operations, Geoprocessing Concepts, and Modeling with GIS.</td>
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<td>7</td>
<td>Aug.10-12</td>
<td><strong>Basic Cartography:</strong> Scale, Map Elements, Map Layouts, Type, Thematic Maps, Data Classification Methods, Color Choices, and Digital Map Distribution Formats.</td>
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<td>8</td>
<td>Aug.13-14</td>
<td><strong>Geospatial Networks:</strong> Satellite Navigation systems, road maps in a digital world, creating a street network, geocoding, shortest paths, and street networks online</td>
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<tr>
<td>Final exam</td>
<td>Aug.17</td>
<td>The final exam will be a 2 hour online exam.</td>
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