GEOGRAPHY 215, Summer 2018 (07/23 – 08/18)
Introduction to Geographic Information Science
Lectures: D2l online

Instructor: Zengwang Xu
Office: Bolton 410C
Telephone: 414-229-4874
E-Mail: xuz@uwm.edu

COURSE DESCRIPTION
This course introduces basic concepts and techniques of geographic information science (GIScience)/Geospatial Technology to students who have no prior background. The course 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 D2l. Each topic will be introduced as a module that includes lecture with transcript followed by an online quiz and an exercise. Discussion forums will be host in D2l. Students are expected to learn through these online materials, and to interact with each other through online D2l discussion forums, that is, students are expected to actively participate by not only asking questions but also answering others’ questions, sharing their learning experience via D2l online forums. With all the flexibility this online course offers, it has fast pace and requires better time management. Engaging more interaction online could 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.

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. There is an online quiz in each module.
3. ONLINE EXAMINATIONS. Two online examinations will be offered through D2l.
4. CLASS PARTICIPATION. This requires students actively participate by asking and answering questions on the online discussion forums in D2l. An initial introduction post will be required within the first week. All these D2l activities will be counted in calculating the class participation grade. I want to see a small online d2l “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 discussions online or in persons (8), time in laboratories (22), time taking exams (4), time in tutorials (44), time for completing assignments (22), and time for preparation and study (39).

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.
TENTATIVE SYLLABUS - GEOGRAPHY 215 online - UW-Milwaukee

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

4. Class participation (10%). An introduction post to the D2l introduction forum will be considered participation. Questions on exercises and quizzes are expected to post in D2l 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. Detail is on the forums in the course site in D2l. Again, it is all these D2l online activities that 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%

D2L

Announcements, lecture slides, lab instructions, and grades will be distributed through D2L. It is students’ responsibility to check your D2L account and UWM email account regularly. Especially, you should regularly check the “Course Schedule” under the “Content”, and pay attention to “Course Alerts” in the D2l course site. All dues can be found on the Course Schedule.

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 (http://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 (flash drive or online space, like OneDrive) 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 SoftwareShop.

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 more info from ESRI, http://www.esri.com/software/arcgis/arcgis-for-desktop/system-requirements

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 D2l. Lab syllabus has more details. All of them work on Windows operation system. Many of them do not have Mac version.

Again, 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 are just moved to somewhere else; a little more exploration will 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 D2l online forum when you cannot solve it yourself, or share your experience if you have.

GENERAL COMPUTING HELP

If you have a computer or computing problem, you can always consider the UWM Help Desk.


TENTATIVE SYLLABUS - GEOGRAPHY 215 online - UW-Milwaukee


Telephone: (414) 229-4040
Email: GetTechHelp@uwm.edu
Location: Bolton 225

This may include (but not limited to) the unusual problems in D2l, 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.

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, http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf.

If you need any special accommodations due to disability or illness, please first seek help from the Student Resource Center at UWM. 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 (07/23/2018-08/18/2018). The specific time for each topic, quiz, and assignment will be available in Course Schedule of the D2l course site. You should regularly check the Course Schedule under the Content of this course and Update Alerts in your D2l course site.

<table>
<thead>
<tr>
<th>TOPIC#</th>
<th>DATES</th>
<th>DESCRIPTION</th>
<th>CHP</th>
<th>QUIZ &amp;LAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jul.22-25</td>
<td><strong>Introduction</strong> to Geospatial Technologies, Geospatial Jobs, Geospatial Data, Volunteered Geographic Information, Geolocation, and Google Earth</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Jul.26-27</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>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Jul.30-Aug.1</td>
<td><strong>Georeferencing:</strong> Reprojecting, Georeferenceing, Control Points, and Transformations.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Aug.2-3</td>
<td><strong>GPS:</strong> GPS origins, Position Measurement, Errors, Accuracy, GNSS around the World, Applications, and Geocaching.</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Mid-term</td>
<td>Mid-term will be a 2 hour online exam.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Aug 7-8</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>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Aug 9-10</td>
<td><strong>Basic GIS Spatial Analysis:</strong> Database Query and Selection, Buffers, Overlay Operations, Geoprocessing Concepts, and Modeling with GIS.</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Aug.11-13</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>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>Aug.14-15</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>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>Aug.16-17</td>
<td><strong>Basic Remote Sensing:</strong> Electromagnetic Energy, the Remote Sensing Process, Spectral Reflectance, NDVI, Digital imagery, and Color Composites.</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Final exam</td>
<td>Aug.18</td>
<td>The final exam will be a 2 hour online exam.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>