TENTATIVE SYLLABUS - GEOGRAPHY 525- UW-Milwaukee

GEOGRAPHY 525, Spring 2018 (01/22 – 05/10)

Geographic Information Science
Lectures: TR 9:30-10:45AM @ LAP252

Instructor: Zengwang Xu
Office: Bolton 410C
Office Hours: TR 2-4 PM or by appoint.
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E-Mail: xuz@uwm.edu

Teaching Assistant: Gainbi Park
Office: Bol 435
Office Hours: TBA
E-Mail: parkg@uwm.edu

COURSE DESCRIPTION

This course is an advanced undergraduate class, and an introductory graduate class on geographic information science (GIS). It covers the fundamental concepts, theories, and the state-of-the-art techniques of GIS. It introduces the map projections and coordinate systems, vector and raster data models, geodatabase management and query, and generic spatial data analyses. The GIS technique will be practiced in the computer laboratory using ArcGIS™ software. Students will be expected to attend and participate the lectures and labs, and assessed by weekly lab assignments, in-class and online quizzes, class project (for graduate students only) and examinations.

REQUIRED TEXTS (RESERVED IN LIBRARY)

Textbook:

Lab/Exercise book:

Both textbooks are reserved in library.

COURSE REQUIREMENTS

1. ATTENDANCE: Class attendance and participation are required except verified emergency.
2. LABS/ASSIGNMENTS: See lab syllabus for details. The laboratory exercises will require the use of ArcGIS software.
3. FINAL PROJECT FOR GRADUATE STUDENT: A final project is required for graduate students. Detailed project requirement will be announced through D2l. A final report (20-40 pages double space), Geodatabase compiled, and progress reports (online or in class) will be required.
4. TIME APPROXIMATION, for this semester, an average 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

Undergraduate:
1. Examinations (50% of class grade) There will be a mid-term and a final examination for this course (20% for midterm and 30% for final).
### TENTATIVE SYLLABUS - GEOGRAPHY 525 - UW-Milwaukee

**2. Laboratory exercises (30% of class grade)**
Weekly lab assignments will be given and collected. Late penalty may apply.

**3. Class & Online participation (5% & 5%)**
Attendance and participation in class discussion are expected to all students. Quizzes and other assignments may be given in class as a component of class participation. Participation to the online Q&A forum will be counted as online participation.

**4. Online quizzes (10%)** will be given via D2l during the semester.

### Graduate:

1. **Examinations (35% of class grade)** There will be a mid-term and a final examination for this course (15% for midterm, 20% for final).

2. **Laboratory exercises (30% of class grade)** Weekly lab assignments will be given and collected. Late penalty may apply.

3. **Class project (15% of class grade)** A project that focuses on review of ArcGIS online and OpenGIS tools, and a GIS application is required for graduate students only. Detailed requirements will be announced in class and through D2l.

4. **Class & Online participation (5% & 5%)** - Attendance and participation in class discussion are expected for all students. Quizzes and other assignments may be given in classes as a component of class participation. Participation to the online Q&A forum will be counted as online participation.

5. **Online quizzes (10%)** through D2l will be given during the semester.

### 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

The exercise book is based on ArcGIS 10.2 or higher. The book comes with DVD disks for ArcGIS software with activation code and the tutorial data. If you purchase a new book, the software and code should be usable. If you purchase a used book, there is great chance that the software has been activated and code is no longer usable.

The campus computers that have ArcGIS installed has updated to ArcGIS 10.4.1. Refer to the following links ([http://uwm.edu/software/arcgis-online/](http://uwm.edu/software/arcgis-online/) & [http://uwm.edu/technology/ccls/](http://uwm.edu/technology/ccls/)) to see where the computers on campus have ArcGIS installed. You can work on your exercises and homework using campus computers. You might need a thumb drive (flash drive) to copy what you have completed, so that you don’t have to start over next time. Online storage space, like, OneDrive, Dropbox, box, etc, can be another option to stop your work.

There might be some minor inconsistency between your exercise book and the specific ArcGIS software you use, which are very hard to figure out. ArcGIS is rapidly changing software, and dealing with these inconsistency is a part of ArcGIS experience. If you do find or even solve these inconsistency, please post it to d2l online, so that others can learn from it.

Please note a free($0) one-year student version of ArcGIS is available to UWM students through UWM SoftwareShop.

### Computing Help

If you have a general computer or computing problem, you can always consider the UWM Help
TENTATIVE SYLLABUS - GEOGRAPHY 525- 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, or installing software on your own personal computer.

POLICIES

Please be advised that Geography 525 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. Some of them are specified as follows,

Students with disabilities. If you need special accommodations due to disability reason, please submit your VISA from the Student Accessibility Center(or Student Resource Center) within the first two weeks of the semester, and inform me your specific accommodation requirement with the VISA. I’ll be happy to make due arrangements. For more information, see the following link, http://www4.uwm.edu/sac/SACltr.pdf

Religious observances. If you require accommodations for absences due to religious observance, I’ll be happy to make due arrangements. Please note you’re required to notify me within the first three weeks of the beginning of classes (within the first week of summer session and short courses), of the specific days or dates on which you will request relief from an examination or other academic requirements. I will try my best to schedule accommodations before or after the regular schedule. For more information, please see the following, http://www4.uwm.edu/secu/docs/other/S1.5.htm

Students called to active military duty. I will try my best to accommodate the absences due to call-up of reserves to active military duty. Please see the following links for details, Students: http://www4.uwm.edu/current_students/military_call_up.cfm
Employees: http://www4.uwm.edu/secu/docs/other/S40.htm
TENTATIVE SYLLABUS - GEOGRAPHY 525- UW-Milwaukee

Tentative Schedule and Topics (GEOG525), Spring 2018 (01/22-05/10)
This schedule is subject to change as the class proceeds.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan.22-28</td>
<td>Introduction</td>
<td>1</td>
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<td>2</td>
<td>Jan.29-Feb.4</td>
<td>Map projections and coordinate systems</td>
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<td>3</td>
<td>Feb.5-11</td>
<td>Map projections and coordinate systems, Cont.</td>
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<td>4</td>
<td>Feb.12-18</td>
<td>Vector data model (Project proposals due at 11:30PM on Sunday)</td>
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<td>5</td>
<td>Feb.19-25</td>
<td>Raster data model</td>
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<td>6</td>
<td>Feb.26-Mar.4</td>
<td>GIS data acquisition Proposal presentations in Thursday class(5 mins each, graduates only)</td>
<td>5 &amp;16</td>
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<td>7</td>
<td>Mar.5-11</td>
<td>Geometric transformation</td>
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<td>8</td>
<td>Mar.12-17</td>
<td>Midterm exam on Thursday,</td>
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<td>Mar 18-25</td>
<td>Spring break</td>
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<td>9</td>
<td>Mar.26-Apr.1</td>
<td>Spatial data editing (Progress reports for final projects, graduates only)</td>
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<td>10</td>
<td>Apr.2-8</td>
<td>Attribute data management</td>
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<td>11</td>
<td>Apr.9-15</td>
<td>Data exploration</td>
<td>10</td>
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<td>12</td>
<td>Apr.16-22</td>
<td>Vector data analysis</td>
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<td>13</td>
<td>Apr.23-29</td>
<td>Raster data analysis</td>
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<td>14</td>
<td>Apr.30-May 6</td>
<td>Data display and Cartography</td>
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<td>15</td>
<td>May 7-10</td>
<td>Project presentations</td>
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<td>Final Exam</td>
<td>May 15</td>
<td>12:30-2:30PM, in the same classroom (final project due will be announced later this semester)</td>
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