University of Oregon  
School of Planning, Public Policy and Management  

PPPM 434/534: Urban Geographic Information Systems  
Winter 2019  

Professor: Dr. Yizhao Yang, Associate Professor, PPPM  
Office: 115 Hendricks Hall  
Email: yizhao@uoregon.edu  
Office Hours: Tuesdays, 1:30pm to 2:50pm  

Course schedule  
• Online content – http://www.obaverse.net  
  Self-paced learning on a weekly schedule. We will be using an online teaching platform called Obaverse to deliver course materials and receive students’ assignment submissions. Each student is expected to create an account on the Obaverse website at https://www.obaverse.net/welcome/ to sign in. Once signing in, a student is expected to self-enroll to this class titled “Urban GIS 2019 (PPPM 434/534)”. You can easily find this class by searching its name.  

Please complete self-enrollment into the GIS course on the Obaverse website ASAP. You will need to access information and materials for Week 1 and complete Week 1 activities before Jan. 15.  

• Lab sessions – 442 MCK:  
  All lab sessions are taught in a face-to-face manner and lab attendance is mandatory throughout the entire term. There will be two lab sessions each week. A student signs up for one lab session and attends it on a regular basis.  

  Session 1 Instructors: Jay Mantonte, Yizhao Yang  
  Time: Tuesdays, 10:00am – 12:50am  
  Location: 442 McKenzie Hall  

  Session 2 Instructors: Jacob Callister  
  Time: Fridays, 2:00pm – 4:50pm  
  Location: 442 McKenzie Hall
COURSE OVERVIEW
The Urban GIS class (PPPM434/534) is designed for students who are newcomers to the field of GIS. It emphasizes students’ understanding and using of the Geographic Information Systems in the planning-relevant issues. Content of this course will be delivered through online lectures, course discussions, and lab exercises that exemplifies GIS applications in areas of demographic, environmental, and accessibility-related studies.

By completing this course, students will:
• Gain a practical understanding of basic cartographic principles, spatial data processing, and theories upon which application of GIS technology is based.
• Develop spatial and quantitative analysis skills of using ArcGIS to analyze planning-relevant issues, and
• Gain an understanding of the limitation of GIS and its social implications.

REQUIRED TEXTBOOKS AND COURSE MATERIALS


COURSE STRUCTURE
The learning content of this course consist primarily of three parts:
1. Online learning and assessment;
2. GIS tutorial book exercises;
3. Lab work and assignments.
All three parts are organized on a weekly basis on the ObaVerse course website for this class.

1. Online learning content and assessment
Each week students will be asked to complete a series of activities online which include:
• Reading assigned chapters from the required textbooks,
• Viewing weekly lecture power point slides and listening to a pre-recorded lecture presentation,
• Reviewing suggested learning materials that supplements each week’s content, and
• Completing a weekly assessment that may include 8 to 10 questions (mostly multiple choice questions). Please note that you only have one chance to take the weekly assessment each week. It is important that you complete all the required readings and exercises before starting the assessment. The weekly assessment must be completed by the deadline specified on the website, typically set at 11:59pm on Fridays. An assessment will be unavailable after the deadline.

Students can work on the readings and assessment activities at your own pace, and are expected to spend at least 3 to 4 hours each week on the online materials. All online activities are to be completed independently.
2. GIS tutorial book exercises
Each week students are expected to finish several chapters from the Getting to Know ArcGIS book (GTKArcGIS). These chapters are selected to supplement a weekly lab assignment. Completing these chapters prior to Tuesday’s or Friday’s lab is crucial for a student to use the lab time efficiently in order to complete a weekly lab assignment. Students can work on the tutorial chapters at their own pace and are expected to spend at least 2 to 3 hours each week on the tutorial. Students are expected to work on the tutorial chapters independently and outside the regular lab session time.

Evidence of completing a week’s assigned tutorial chapters (e.g., maps produced for each chapter) must be submitted to the ObaVerse course website before the deadline specified on the website, typically set at 11:55pm on Mondays for Tuesday lab session and 11:55pm on Thursdays for Friday lab session. Any submissions made after the due time will be considered late and receive penalties (note: the online submission website tracks submission time automatically).


3. Lab attendance and assignments
The 3-hour lab sessions on Tuesdays (or Fridays) are for students to work on lab assignments. A weekly lab assignment with detailed instructions starts from week 2. There are six lab assignments and they are designed to help students reinforce GIS theories and skills learned from the online materials/activities and the tutorial book exercises. In addition to the lab assignments, there are two quizzes given out during Week 5 and Week 10 lab sessions. These lab quizzes aim to assess students’ proficiency level of using the ArcGIS program. Students are asked to complete a mini-GIS project without any given instructions during a lab quiz.

Lab Assignments
A lab assignment is given out at the beginning of a lab session, and is due at the beginning of the following week’s lab session (except for lab 3). Most lab assignments mimic a realistic planning-related issue that can be addressed using GIS analysis and publicly available data.

Lab Quizzes.
The quizzes are open-book and open-source, meaning students can bring in any materials that they consider helpful. Students are expected to work on a quiz independently and within the regular lab-session time window.

GRADING - 100%
Undergraduate students:
- 40% Online activities.
- 10% completing all readings, lecture presentations, etc
Note: The ObaVerse website tracks how much time you spend on and how frequently you visit a particular activity site. I will be using this ObaVerse function to evaluate whether you complete the assigned online activities in time.

30% weekly online assessment
Note: Each online assessment, or a quiz, consists of 8 to 10 questions, and are typically of 10 points. There are ten online assessments or quizzes and each of them accounts for 3%.

- 10% Tutorial book exercises (maps).
  Note: All maps should be submitted in a pdf format (not a .mxd file) in order to be counted. The tutorial book submissions will not be graded.

- 40% Lab assignments – 5% each for labs 1,2,4,5 & 6, 10% for lab 3.
  Note: Each lab assignment includes a detailed description about the deliverables that include maps, answers to questions, or evidence of work performed for each assignment. Please make sure you read the deliverable description carefully.

- 10% Lab quizzes – 5% each

Graduate students:

- 40% Online activities.
  10% completing all readings, lecture presentations, etc
  Note: The ObaVerse website tracks how much time you spend on and how frequently you visit a particular activity site. I will be using this ObaVerse function to evaluate whether you complete the assigned online activities in time.

30% weekly online assessment
Note: Each online assessment, or a quiz, consists of 8 to 10 questions, and are typically of 10 points. There are ten online assessments or quizzes and each of them accounts for 3%.

- 10% Tutorial book exercise submissions (maps and answers as required)
  Note: All maps should be submitted in a pdf format (not a .mxd file) in order to be counted. The tutorial book submissions will not be graded.

- 40% Lab assignments – 5% each for labs 1,2,4,5 & 6, 10% for lab 3.
  Graduate students’ lab assignments will include delivering a technique memorandum that discusses each assignment’s methodology, summarizes analytical findings and answer specific questions, in addition to maps produced.

- 10% Lab quizzes – 5% each
DOCUMENTED DISABILITIES
Students who have a documented disability and anticipate needing accommodations in this course should make arrangements to see the instructor as soon as possible. They should also request that the Counselor for Students with Disabilities send a letter verifying the disability.

THINGS TO KEEP IN MIND
• Over the term you will be working with materials pertaining to different activities – online contents, lab assignments, and tutorial book chapters. It is a good idea to create a course binder to organize these materials you are likely cumulate throughout the term.
• Start your weekly online activities as soon as you can – do not wait until the day when tutorial book exercises are due and the online assessment is to be closed. The ObaVerse course website provides a “track progress” function that allows you to see how much work you have completed and how much you still need to work on.
• You will be working with spatial data sets. The spatial data that ArcGIS works with, unlike the word file or excel file, consist of multiple documents. Copying and transferring spatial data requires the use of ArcGIS' ArcCatalogue program. You should be careful at handling spatial data when working on multiple computers for your lab assignments.
• You need to complete online activities, tutorial book chapters, and lab assignments on time. Late assignment or submission will be assessed 5% per day late penalty unless there is a qualified, documented excuse (according to UO rules).
## WEEKLY SCHEDULE AT A GLANCE

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Lecture content (online)</th>
<th>Tutorial book chapters</th>
<th>Lab activities</th>
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<tbody>
<tr>
<td></td>
<td>Overview of Geographic Information systems</td>
<td>GTKArcGIS Chapters 1, 2, 3, 4</td>
<td>Lab policies and procedures</td>
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<td></td>
<td>E-GIS, Chapter 1</td>
<td>Exercise submission: 1 map after completing chapter 4</td>
<td>Demonstration of ArcGIS program and mapping exercise</td>
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<td><strong>Week 2</strong></td>
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<td>No lab assignment</td>
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<td></td>
<td>Type of Maps</td>
<td>GTKArcGIS Chapters 7(a,b,c), 8,9(a.b,c),10 (optional)</td>
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<td></td>
<td>Map Design</td>
<td>Exercise submission: 1 map (chapter 7), 1 map showing natural classification with 7 classes (chapter 8a), 1 map showing dot density (chapter 8b), 1 map showing chart symbols (chapter 8c).</td>
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<tr>
<td></td>
<td>Data classification</td>
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<td>Lab Assignment 1: Visualizing population density distribution in Oregon Counties</td>
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<td>Making choropleth maps</td>
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<td>E-GIS, Chapter 2, Chapter 6, Chapter 9. Review information at: <a href="http://libweb.uoregon.edu/map/">http://libweb.uoregon.edu/map/</a> Visit UO MAP library</td>
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<td>Data models</td>
<td>GTKArcGIS Chapters 6 (a,b,c)</td>
<td>Lab 1 Due</td>
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<td>Spatial referencing system</td>
<td>Exercise submission: 1 map (Chapter 6a,b), 1 map (Chapter 6c)</td>
<td>Lab Assignment 2: mapping public schools in Lane County</td>
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<td>Handling projections in ArcGIS</td>
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<td>E-GIS, Chapter 2, Chapter 4 Campbell, J. Map use &amp; analysis, Chapter 4 (pp. 53-63) (available on Obaverse).</td>
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<td><strong>Week 4</strong></td>
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<td>Lab 2 Due</td>
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<td>Geospatial data – data structure</td>
<td>GTKArcGIS Chapters 15,16(a,b),17(a,b)</td>
<td>Lab Assignment 3-1: Mapping service accessibility for elderly population in Eugene (Part 1)</td>
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<td>Attribute data management</td>
<td>Exercise submission: 1 map (chapter 16), answer questions at the end of chapter 17 a,b.</td>
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<td>E-GIS, Chapters 5,6.</td>
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<td><strong>Week 5</strong></td>
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<td>Lab quiz 1</td>
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<td>Mid-term review</td>
<td>Catchup with all GTKArcGIS assignments Prepare for lab quiz 1</td>
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<td><strong>Week 6</strong></td>
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<td>Quiz 1 review</td>
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<td>GIS Data acquisition</td>
<td>No GTKArcGIS chapters</td>
<td>Lab Assignment 3-2: Mapping service accessibility for elderly population in Eugene (Part 2)</td>
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<td>Geospatial data management</td>
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<td>E-GIS, Chapters 3,5. GIS for the Urban Environment, Chapter</td>
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<td>Week 7</td>
<td>6 (available on Obaverse). Census TIGER files: <a href="http://www.census.gov/geo/www/tiger/overview.html">Http://www.census.gov/geo/www/tiger/overview.html</a> Local GIS resources: explore data links through University of Oregon library websites.</td>
<td>GTKArcGIS Chapters 18(a,b,c), optional (Chapter 18 d) Exercise submission: one map (18,a); one map (18,b); one map (18,c).</td>
<td>Lab 3 Due Lab Assignment 4: Geoprocessing exercises</td>
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<td>Week 8</td>
<td>• Geospatial Analysis I E-GIS, Chapter 7.</td>
<td>GTKArcGIS Chapters 19 (a,b,c,d) Exercise submission: one map (19,a); one map (19,b); one map (19,c); one map (19,d).</td>
<td>Lab 4 Due Lab Assignment 5: Geoprocessing exercises</td>
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