

URP 6278: Web Mapping and Visualization

URP 6278 (3 CREDITS)

SUMMER 2025 *Class is available online through e-Learning @ UF*****

Instructor:

Erik Finlay

131 Jonathan and Melanie Antevy Hall

erikfinlay@ufl.edu

Office Hours: Zoom (Thursdays 12:00 pm-1:00 pm) and by appointment.

If this time slot doesn't work for you and you need assistance, please email me so that we can set up a different time to meet. To access office hours there is a zoom button on the main canvas page.

Course Website: <https://elearning.ufl.edu/>.

Course Communication: Communication with course faculty will take place primarily within Canvas, through the [Inbox](#). The instructor is also available for phone calls or live chat during office hours or by appointment. Please contact the instructor through the [Inbox](#) to arrange a call or chat.

Optional Textbook: *Getting To Know Web GIS, Fifth Edition* by Pinde Fu

Course Description

Web Mapping and Visualization is intended to introduce graduate students in Urban and Regional Planning to the realities of sharing and displaying geographic information on the web. The course presents the concepts and principles of what makes communication on the web possible, the function and importance of web services, and provides practical experience creating web maps using a variety of web mapping solutions. Free and Open Source web mapping technologies are discussed and contrasted with proprietary options, however because this course is geared towards non-programmers mainly commercial web mapping applications will be used for hands on experience. By the end of the course a student should be able to identify the components necessary to create a web application for various use case scenarios dependent on real world constraints such as budget, audience, and scalability. They should also be able to create attractive, feature rich, web maps and applications that work on any device including desktops, mobile phones or tablets.

Prerequisite Knowledge or Skills

Completion of URP 6270, Introduction to Planning Information Systems.

Purpose of Course

The purpose of this course is to introduce students to the concepts, software, and skills needed to share and display geographic information on the web.

Course Objectives

Upon successful completion of the course, students will be able to:

- Name and describe the hardware, software, and protocols that make web communication possible.
- Distinguish the differences between open and proprietary web services and describe their functions and capabilities.
- Identify the basic elements of a web map.
- Create a web map design plan based on mapping objectives, design best practices, and available technology.
- Prepare GIS data and map services for web map optimization.
- Symbolize and share geographic data on the web.
- Design and create web maps using a variety of web mapping solutions.
- Design web map sharing plans that account for the characteristics and needs of unique audiences.
- Create mobile GIS applications for field data collection and editing.
- Create dashboard applications and data visualization tools.

Instructional Methods

Students will learn the concepts, software, and skills needed to share and display geographic information on the web. Concepts and techniques will be covered in lectures, readings, and hands-on class assignments and a final project.

Course Policies

ATTENDANCE POLICY

While face-to-face attendance is not required, students are responsible for satisfying all academic objectives as defined by the instructor. In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, and professional conferences), military obligation, severe weather conditions, religious holidays, and participation in official university activities such as music performances, athletic competition or debate. Absence from or failure to participate in class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved.

Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence.

Students cannot participate in classes unless they are registered officially or approved to audit with evidence of having paid audit fees. The Office of the University Registrar provides official class rolls to instructors.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

QUIZ POLICIES

Quizzes will be given to test student knowledge on course material.

HOMEWORK ASSIGNMENT POLICY

Homework assignments, exercises, discussions, and quizzes are due at the start of the next module (by 11:55pm) unless otherwise stated in the course schedule.

DISCUSSION POLICY

While face-to-face attendance is not required, students need to make use of the various tools in Canvas to develop a learning community. The discussion board is an area where students can communicate with the instructor and classmates regarding a variety of topics. Participation will be evaluated by discussion board postings. For each assigned discussion topic, students should submit one post in response to the initial prompt, then at least two posts in response to classmates.

Additionally, students have the opportunity to communicate with the instructor and classmates regarding a variety of course-related topics in an optional course chat group on Microsoft Teams.

MAKE-UP POLICY

Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence, if the absence is due to the one of accepted reasons listed in the Attendance Policy.

If you are unable to turn in an assignment on time, please contact me before the due date to discuss your options. A grade reduction of 5% per day will occur unless there is an acceptable excuse for the late submittal.

Computer problems that arise during submission will not be accepted as an excuse for late work. In the event that you have technical difficulties with e-Learning, please contact the UF Help Desk. If technical difficulties cause you to miss a due date, you **MUST** report the problem to Help Desk. Include the ticket number and an explanation of the issue based on consult with Help Desk in an e-mail to the instructor to explain the late assignment/exam. The course faculty reserves the right to accept or decline tickets from the UF Help Desk based on individual circumstances.

Course Technology

This course will be using ArcGIS Online and ArcGIS Pro software.

We advise that you download and run ArcGIS Software on your personal computer. Alternatively, you can choose to run ArcGIS via UFApps, however, performance has been noted to be very slow.

Acquiring a personal computer software license for ArcGIS

Students can acquire the latest version of ArcGIS software and a student license from the GeoPlan Center. Please note: it may take up to 24 hours to receive your software license. It is recommended that students install ArcGIS software prior to beginning the class: <https://www.geoplan.ufl.edu/software>

Accessing ArcGIS via UFApps

The ArcGIS software is available on UFApps (<http://info.apps.ufl.edu/>). UFApps provides access to software applications from any computing device--laptops, tablets, desktops, and smartphones--from any location, at any time.

In order to access UFApps and ArcGIS you will need to install software which is available from the UFApps website.

- Open your browser and navigate to <http://info.apps.ufl.edu/>.
- Scroll down to the First Time Use Questions section and
 - click on Access UFApps from a PC if you are using a PC,
 - click on Access UFApps from a Mac if using a Mac.
- The instructions will guide you through installing the required software and logging in to UFApps.

COMPUTER REQUIREMENTS

For software specific recommendations please see the ESRI links listed below:

[Click Here to see ESRI's ArcGIS Pro 3.x system requirements](#)

Course Outline

Week	Module	Topics Covered	Assignments
1	1. Welcome to Web Mapping and Visualization	Lesson 1: History of Web GIS Lesson 2: Web Communication Lesson 3: OGC Web Services Lesson 4: ArcGIS Web Services Lesson 5: A Framework for Web Map Design	Assignment 1.1: Set Up Accounts and Download Software Assignment 1.2: Create and Share a Web Map Discussion 1: Introductions Quiz 1
2	2. Define Your Web Map Objectives	Lesson 1: Defining the Objectives of a Web Map Lesson 2: Basic Elements of a Web Map Lesson 3: Web Mapping in ArcGIS Online Lesson 4: Troubleshooting Software Issues	Assignment 2.1: The What, Why, and Who of Web Mapping Assignment 2.2: Add Data to ArcGIS Online Assignment 2.3: Create a Web Map in ArcGIS Online Quiz 2
3	3. Create a Web Map Design Plan	Lesson 1: Create a Web Map Design Plan	Assignment 3.1: Create an Education Policy Map

		<p>Lesson 2: Acquiring Data for Mapping</p> <p>Lesson 3: Creating Meaningful Maps</p> <p>Lesson 4: Adding Interactive Elements</p> <p>Lesson 5: Layers, Maps, and Apps in ArcGIS Online</p>	<p>with Custom Symbology and Pop-ups</p> <p>Assignment 3.2: Design a Layout in ArcGIS Experience Builder</p> <p>Assignment 3.3: Create a Web Map Design Plan</p> <p>Discussion 2: Share Your Approach for Symbolizing Data</p> <p>Quiz 3</p>
4	4. Choose a Web Map Technology Solution	<p>Lesson 1: Choosing Technology for Web Mapping</p> <p>Lesson 2: The Web Mapping Technology Stack</p> <p>Lesson 3: Commercial Software for Web Mapping</p> <p>Lesson 4: Choosing a Web Mapping Solution</p> <p>Lesson 5: ArcGIS Online Hosted Feature Layers</p>	<p>Assignment 4.1: Choose a Web Mapping Solution for Your Project</p> <p>Assignment 4.2: Create a Custom Basemap in Mapbox</p> <p>Assignment 4.3: Create a Web App using ArcGIS Dashboards</p> <p>Quiz 4</p>
5&6	5. Sharing and Collaboration	<p>Lesson 1: Sharing and Collaboration</p> <p>Lesson 2: ArcGIS Online Sharing Options</p> <p>Lesson 3: ArcGIS Online Hosted Feature Layer Views</p>	<p>Assignment 5.1: Create an App Design Plan for a Library Locator Map</p> <p>Assignment 5.2: Create a Sharing Plan</p> <p>Assignment 5.3: Build a Web App to Help Citizens Find the Nearest Library</p> <p>Quiz 5</p>
7&8	6. Field Mobility and Monitoring	<p>Lesson 1: Mobile GIS</p> <p>Lesson 2: Monitoring and Real-Time GIS</p>	<p>Assignment 6.1: Create a Form for a Damage Assessment Using ArcGIS Field Maps</p>

			<p>Assignment 6.2: Create a Survey for a Noise Assessment Using ArcGIS Survey123</p> <p>Assignment 6.3: Create a Public Facing Noise Survey Application Using ArcGIS QuickCapture</p> <p>Discussion 3: You Are Now the Expert</p> <p>Quiz 6</p>
9&10	7. Going Beyond the Map	<p>Lesson 1: Web Mapping for Decision Support</p> <p>Lesson 2: Data Visualization and Interpretation</p>	<p>Assignment 7.1: Create a Map to Show Housing Costs by County in Florida</p> <p>Assignment 7.2: Create an Infographic Template Using Business Analyst</p> <p>Assignment 7.3: Create a Decision Support Application Using ArcGIS Experience Builder</p> <p>Quiz 7</p>
11&12	8. Final Project and Web Mapping Resources	<p>Lesson 1: A Recipe for a Successful Web Mapping Project</p>	<p>Discussion 4: Open Discussion on Course Materials</p> <p>Final Project Part 1: Highlight Your Skills and Experience Using ArcGIS Story Maps</p> <p>Final Project Part 2: Write a Scope of Work for a Web Mapping Project</p> <p>Final Project Part 3: Create a Series of Web Mapping Products</p>

Course Grading Summary

Component	Percent of Grade
Homework	50%
Discussions	15%
Quizzes	15%
Final Project	20%
Total	100%

Course Grade

Letter Grade	Percentage	Grade Points
A	93-100%	4.00
A-	90-92%	3.67
B+	88-89%	3.33
B	83-87%	3.00
B-	80-82%	2.67
C+	78-79%	2.33
C	73-77%	2.00
C-	70-72%	1.67
D+	68-69%	1.33
D	58-67%	1.00
D-	55-57%	0.67
E	Below 55%	0.00

For greater detail, see the Grades section of the [Graduate Catalog for the University of Florida](#). It also contains the policies and procedures, course descriptions, colleges, departments, and program information for UF.

Communication Guidelines

Course communication should be civilized and respectful to everyone. All members of the class are expected to follow rules of common courtesy in all e-mail messages, threaded discussions and chats. The means of communication provided to you through e-Learning (e-mail, discussion posts, course questions, and chats) are at your full disposal to use in a respectful manner. Abuse of this system and its tools through disruptive conduct, harassment, or overall disruption of course activity will not be tolerated. Conduct that is deemed to be in violation with University rules and regulations or the Code of Student Conduct will result in a report to the Dean of Students.

Student Support Services

As a student in a distance learning course or program, you have access to the same student support services that on campus students have. For course content questions contact your instructor.

For any technical issues you encounter with your course please contact the UF computing Help Desk at 352-392-HELP (4357). For Help Desk hours visit: <http://helpdesk.ufl.edu>. For a list of additional student support services links and information please visit: <http://www.distance.ufl.edu/student-services>.

Getting Help

CAMPUS RESOURCES:

Health and Wellness

- U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
- University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608.
- GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

Academic Resources:

- E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring. Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.
- On-Line Students Complaints: View the Distance Learning Student Complaint Process.

University Policies

University policies on such matters as add/drop, incomplete, academic probation, termination of enrollment, reinstatement, and other expectations or procedures can be found in the [graduate student handbook](#), and at the [Dean of Students website](#).

Student Honor Code

In adopting this Honor Code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the University community. Students who enroll at the University commit to holding themselves and their peers to the high standard of honor required by the Honor Code. Any individual who becomes aware of a violation of the Honor Code is bound by honor to take corrective action.

Student and faculty support are crucial to the success of the Honor Code. The quality of a University of Florida education is dependent upon the community acceptance and enforcement of the [Honor Code \(..\)](#).

***The Honor Pledge:** We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code.*

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

Special Accommodations

Students requesting disability-related academic accommodations must first register with the Disability Resource Center: <http://www.dso.ufl.edu/drc>.

The Disability Resource Center will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Complaints

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

Copyright

Course materials may be protected by copyright and are for the exclusive use of enrolled students. Course materials may not be further disseminated.

Changes to the Syllabus

The faculty reserves the right to make changes to the course syllabus and course schedule. In the event that changes become necessary, students will be notified through Canvas email.