

Introduction to Urban Geographic Information Systems

Urban Planning 945-791/591
Remote Learning – Fall 2023

Instructor

Michael Benedict

Email

benedicm@uwm.edu

Office Location

Online using Zoom or
Microsoft Teams appointment

Office Hours

By appointment scheduled
through Zoom or Microsoft
Teams or after lecture.

Course Overview

This online course is the first in a series of four Geographic Information System classes offered by the Department of Urban Planning. It is designed to give students a comprehensive understanding of modern GIS through real-world examples and theory. The course uses a combination of Microsoft Teams, Canvas, Collaborate Ultra, and ArcGIS Online for remote learning.

At the completion of the course, students will be able to:

- Have a basic, practical understanding of core GIS concepts, techniques, and real-world applications.
- Understand different GIS technologies and software.
- Know how GIS is used in real-world scenarios.
- Understand basic GIS data concepts.
- Perform basic spatial analysis tasks.
- Have practical experience using esri software.
- Understand how to find and search for geospatial information.

Required Text

- The ArcGIS Book, *Christian Harder and Clint Brown, Editors*
- The ArcGIS Imagery Book, *Christian Harder and Clint Brown, Editors*

Grading

- 5% Class and Lab Attendance and Participation
- 25% Lab Assignments
- 15% Mid Term Exam
- 15% Mid Term Lessons
- 40% Final Project Story Map

Expected Workload (hours)

- Lecture 15
- Lab 40
- Required Reading 25
- Homework 10
- Studying for Exam 5

Course Schedule

Week	Topic	Reading
------	-------	---------

9/11/2023	Introduction What is GIS?	
9/18/2023	What is GIS Continued? History and Industries	GIS for Planning and the Built Environment – Chapters 1,2
9/25/2023	How GIS Works	The ArcGIS Book - Chapter 1
10/2/2023	Mapping with GIS	GIS for Planning and the Built Environment - Chapters 5,6 The ArcGIS Book - Chapter 2
10/9/2023	Data Principles	GIS for Planning and the Built Environment - Chapters 3,4 The ArcGIS Book - Chapter 4
10/16/2023	GIS Analysis	GIS for Planning and the Built Environment - Chapter 7 The ArcGIS Book - Chapter 5
10/23/2023	GIS Apps	The ArcGIS Book - Chapter 7
10/30/2023	GIS Software GIS Data Formats	The ArcGIS Book - Chapter 8
11/6/2023	Planning Tools	The ArcGIS Book - Chapter 9
11/13/2023	Mapping the Internet of Things	GIS for Planning and the Built Environment - Chapter 8
11/20/2023	EXAM - NO LAB	
11/27/2023	Introduction to Code and Modeling, ArcGIS Pro	GIS for Planning and the Built Environment - Chapter 9
12/4/2023	GIS Community	
12/11/2023	Imagery	The ArcGIS Imagery Book - Chapter 1, 3, 5

Exam/Project Schedule

Week	Description
Week 3	Introduction to Final Project – esri Story Map https://storymaps.arcgis.com/en/
Week 6	Three-minute presentation on Final esri Story Map Project Topic
Week 10	Exam – <i>GIS for Planning and the Built Environment</i> and Lecture Mid-Term ArcGIS Lessons Due (3)

Mid-Term ArcGIS Lessons (3)

Complete three (3) esri Lessons from <https://learn.arcgis.com/en/>. Minimum 30-minute lesson for each of the three lessons. One of the three lessons can be completed using ArcGIS Pro for extra credit.

One-page summary for each Lesson is due at Week 8 class. Summary must include:

- What types of base maps were used?
- What industry was the lesson related to?
- What types of data were used?
- What questions could you ask of the data?
- Screen shot of completed lesson or map.

Final Story Map Project and Presentation

Written Report (3-5) pages

Introduction to your Project

Data sources

Target audience

Findings

Challenges working with Story Maps

Link to Story Map

One-page Map

Support U

Any student in need, or students that face challenges that are barriers to their education, are encouraged to contact the Dean of Students (dos@uwm.edu) for support. Support U offers wrap-around holistic support for students, including basic needs, accessing the food pantry, emergency funding, case management, and connecting to resources, etc. Support U is run by the Dean of Students Office. Chapman 215 PO Box 413 Milwaukee, WI 53201-0413, 414 229-4501 phone, 414 229-2481 fax, <http://uwm.edu/academicaffairs/> In addition, faculty and staff are encouraged to contact the Dean of Students Office if they have a student they are trying to support and want to consult with a professional staff member. The Dean of Students Office will provide faculty and staff with resources and information to assist the faculty or staff member in supporting the student. The Dean of Students Office is also interested in providing you with training, resources, and support as you help students this upcoming semester.

Other Important Links

<https://uwm.edu/secu/syllabus-links/>

<https://uwm.edu/cetl/covid-19-syllabus-statements/>