

**Fond du Lac Tribal and Community College
COURSE OUTLINE FORM**

01/23/18

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: _____

2. Date submitted: _____

3. Date approved: 11/30/17 Date revised _____

4. Department/discipline: Geography & Computer Science

5. Department(s) endorsement(s): _____
(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Web Mapping

Abbreviated course title (25 characters or less): _____

7. Course Designator: CSCI/GEOG 8. Course Level: 2051

9. Number of Credits: Lecture 1 Lab 3

10. Control Number (on site) 30 Control Number (online) _____

11. Catalog/Course description:

This course covers the creation of both static and interactive online maps. Course topics include the basics of internet architecture, web data formats, web services, web cartography, UI/UX (user interface/user interaction) design, and publishing on the web using HTML, CSS, and JavaScript. Students will create shareable web maps on real-world topics using both graphical mapping platforms and JavaScript code-based APIs. No prior coding experience is necessary. (Prerequisite: GEOG 2001, GEOG 2005 or instructor consent)

12. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s): GEOG 2001 Introduction to GIS or GEOG 2005 Cartography & Visualization or instructor consent

Co-requisite:

13. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

Textbook: none

Additional Resources:

- GIS Lab (Room 208) with latest versions of ArcGIS Pro, Geoserver, Python, and GitHub for Windows installed on PCs
- ArcGIS Online institutional account with access given to students
- One-year student licenses for ArcGIS Pro
- Codecademy online coding tutorials
- GitHub or other free web publishing platform

- Supplemental articles, videos, and case studies

14. Course Content (Provide an outline of major topics covered in course)

1. Definition and types of web maps
2. Client-server architecture
3. Localhost server setup
4. Basics of HTML and CSS
5. Web spatial data formats
6. Geospatial web services
7. Symbolization using stylesheets
8. Raster and vector map tiles
9. SVG maps
10. Processing and embedding static map images
11. Adding thematic data layers to an interactive map
12. User interface and interaction (UI/UX) design
13. Introduction to JavaScript
14. Basics of JavaScript APIs
15. Slippy map creation with an open-source API
16. Publishing and sharing web maps

15. Learning Goals, Outcomes, and Assessment

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Course Learning Outcomes will fulfill the identified competencies

Course Learning Outcomes

Upon completion of this course, students will be able to:

1. Distinguish between static and interactive web maps (B)
2. Construct a basic web page and publish it to a localhost server on their machine (B)
3. Construct, publish, and share a customized thematic web map using a graphic online mapping platform (A, B)
4. Construct a basic interactive web map using appropriately formatted data and HTML, CSS, and JavaScript (A, B, C)
5. Design and embed in a web page a static map image that effectively represents a real-world problem or issue (B, D)
6. Describe different interactions that can take place on an interactive web map (B)
7. Find and use online tutorials, examples, and resources to solve problems in their program code (C)

16. **Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See www.mntransfer.org

Goal Area(s): _____

Does this course require additional material for specific program requirements?
If yes, please provide.

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