

# Course Syllabus

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## EAS 540

### GIS for Natural Resources Applications

**Instructor:** Mr. Shannon J. Brines, Environmental Spatial Analysis Lab, sjbrines@umich.edu, 763-3573, 3315a Dana

**Office Hours:** by appointment, send email with "EAS 540" in the subject line.

**Course Prerequisite:** EAS 531 Principles of GIS (or equivalent, e.g. UP 406) or permission of instructor

**Course Offered:** Fall 2019, Mondays & Wednesdays, 3-5:30pm, 3325 Dana.

#### Description:

EAS 540 is a 2 credit project-based course ideal for graduate students (or advanced undergraduate students) who would like to develop and expand their existing skills and knowledge of GIS and spatial analysis. Students, working individually or with a partner, take a project from start to finish. The class will begin with developing the idea of a good project to undertake during the class, which can be (but does not have to be) a portion of thesis/dissertation research or a master's project. Students are welcome to discuss project ideas with the instructor prior to class.

EAS 540 is intended to give students the ability to plan, design and execute a GIS project. Students should learn the potentials and limitations of geographic analyses. Among other things students will learn how to build geographic databases, analyze data spatially and produce output that succinctly summarizes their results. Students will also learn about using and creating Metadata.

EAS 540 is 2 credits. Students are required to work a minimum of 4 hours per week, with Mondays & Wednesdays 3-5pm the standard time. Students are expected to check-in with the Instructor in person at least once per week. As such, students need to contact the Instructor in the event they will not attend class time. Grades are based upon periodic reviews of a student's project journal ([or log \(http://esa.snre.umich.edu/classes/nre540/nipc\\_logbook\\_tips.pdf\)](http://esa.snre.umich.edu/classes/nre540/nipc_logbook_tips.pdf)) and a project proposal, project abstract, project practice presentation, project final presentation, and project metadata.

#### Assignments:

**PROJECT PROPOSAL:** Due 9/18 (tentative). Project proposal should be an outline of project from start to finish. Student should describe at a minimum the question(s) being asked, the data that will be used, techniques/analyses that will be used to the best of their ability, and what the final product(s) will be like. Student must meet with instructor in person and describe project concept prior to turning in proposal on paper. The document "[How to Keep a Project Log Book \(http://esa.snre.umich.edu/classes/nre540/nipc\\_logbook\\_tips.pdf\)](http://esa.snre.umich.edu/classes/nre540/nipc_logbook_tips.pdf)" provides an excellent template for a comprehensive project proposal as well as your daily journal.

**PROJECT ABSTRACT:** Due 10/7 (tentative). Students should submit an academic quality abstract of the project they will be presenting.

**FALL BREAK:** 10/14&10/15

**PROJECT PRACTICE PRESENTATION:** Due 11/4&11/6. Students will present a dry-run version of their final presentation as practice and to receive input from fellow colleagues. Students should use the overhead projector in the classroom and software like PowerPoint (for example) for presentation. Students will have approximately 10 minutes each.

**PROJECT FINAL PRESENTATION:** Due 12/9 and 12/11 (tentative). Comprehensive presentation of project presented at NRE 540 GIS Poster Symposium. Students will have approximately 15 minutes to present during an all afternoon symposium.










PROJECT METADATA: Due 12/16 (tentative). Comprehensive FGDC compliant metadata for at least one piece of data created during project.

PROJECT JOURNAL: Collected periodically un-announced for review. Student should make note of hours spent on project, data and informational resources (URLs, books, etc.) found applicable to project, steps taken during the project from start to finish, conceptual and analytical ideas, problems and difficulties encountered relating to project, questions for instructor, etc.. Journals make compilation of metadata much easier but ultimately are for student benefit - use them accordingly. The actual journal can be a written paper notebook (but be prepared to hand that in periodically), a digital document, or a blog etc.. The document "[How to Keep a Project Log Book](http://esa.snre.umich.edu/classes/nre540/nipc_logbook_tips.pdf) ([http://esa.snre.umich.edu/classes/nre540/nipc\\_logbook\\_tips.pdf](http://esa.snre.umich.edu/classes/nre540/nipc_logbook_tips.pdf)) provides an excel lent template for a comprehensive daily journal.

### Grading (tentative):

Grading will be based upon typical academic scale. Grades will be comprised roughly 55/45 of project products and project journals/work/effort: Proposal 5%, Abstract 5%, Practice Presentation 15%, Final Presentation 25%, Metadata 5%, Project Journals/Effort/Attendance 45%.

## Course Summary:

Date	Details	
Wed Sep 18, 2019	 <a href="https://umich.instructure.com/courses/306193/assignments/833659">Project Proposal (https://umich.instructure.com/courses/306193/assignments/833659)</a>	due by 11:59pm
Wed Oct 9, 2019	 <a href="https://umich.instructure.com/courses/306193/assignments/833657">Project Abstract (https://umich.instructure.com/courses/306193/assignments/833657)</a>	due by 11:59pm
	 <a href="https://umich.instructure.com/courses/306193/assignments/833658">Project journal/log check (https://umich.instructure.com/courses/306193/assignments/833658)</a>	due by 11:59pm
Mon Nov 11, 2019	 <a href="https://umich.instructure.com/courses/306193/assignments/833656">Practice Presentations (https://umich.instructure.com/courses/306193/assignments/833656)</a>	due by 11:59pm
Mon Dec 2, 2019	 <a href="https://umich.instructure.com/courses/306193/assignments/833652">Choose a final presentation time slot (https://umich.instructure.com/courses/306193/assignments/833652)</a>	due by 11:59pm
	 <a href="https://umich.instructure.com/courses/306193/assignments/833655">Final Project Title and Abstracts (https://umich.instructure.com/courses/306193/assignments/833655)</a>	due by 11:59pm
Mon Dec 9, 2019	 <a href="https://umich.instructure.com/courses/306193/assignments/833660">Upload Final Presentation (https://umich.instructure.com/courses/306193/assignments/833660)</a>	due by 11:59pm
Mon Dec 16, 2019	 <a href="https://umich.instructure.com/courses/306193/assignments/833653">Create Metadata (https://umich.instructure.com/courses/306193/assignments/833653)</a>	due by 11:59pm
	 <a href="https://umich.instructure.com/courses/306193/assignments/833654">Extra Credit: Final Journal Check (https://umich.instructure.com/courses/306193/assignments/833654)</a>	due by 11:59pm