

NRES 394: Ecological Basis for Planning and Design

Course Syllabus

Spring 2024

Austin Holland, PhD
Tuesdays & Thursdays 12:30-1:45 pm
TNR 271 and TNR 356

Office: TNR 180

Office Hours: Tuesdays & Thursdays 11am-12pm

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I. Course Description

How can human communities develop and grow in ways which conserve resources, protect and enhance environmental quality, and promote resilience and sustainability? This course introduces ecological planning and design as an important field that answers this question, and in which Natural Resource Planning students can (and should) play an essential leadership role. The focus is on integrating key planning tools and analyses at a variety of scales (region, landscape, site, etc.) with principles of ecosystem science, landscape ecology, and collaborative governance.

Classroom: Classes will begin the week on Tuesday in TNR 271, then move to TNR 356 on Thursday. You will be notified otherwise.

Materials: Weekly readings will be posted in CANVAS. Students will need access to sufficient technological resources to support effective online learning, as well as managing visual and spatial data.

II. Teaching Philosophy and Approach

The goal is to help you develop the knowledge, skills, and creativity required to begin solving the sustainability challenges facing humanity, as well as creating and capitalizing on new opportunities. The teaching approach is to create a learning environment that is engaging, interactive, participatory, and hands-on. Every student will be responsible for a significant amount of the learning that takes place both inside and outside the classroom.

III. Learning Objectives

This class is structured in a planning studio format that meets once a week for a three-hour block, in order to facilitate in-class activities and project development. Over the course of the semester students will cultivate a number of professional skills. By the end of the semester students will be able to:

1. Relate ecosystem and ecological concepts to planning, design, land use, and development activities;
2. Critically evaluate and discuss key readings which help to establish an ecological basis;
3. Review, analyze, and synthesize lessons from ecological planning;
4. Prepare a land use plan with an ecological basis as a group project; and
5. Develop, hone, and apply professional skills (software, analytical, communication, etc.) through a final project.

IV. Assignments

This course will require a significant investment of time and energy, both in and out of the classroom. The quality of the work that you produce should reflect your highest effort, and you should strive to exceed expectations throughout the semester.

1. Attendance and Participation (100 points total)

Because this course focuses on collaborative work during class time, **class attendance is mandatory** except with prior agreement. Absences from class negatively affect learning for both you and your classmates. Thus, your final grade will be reduced by 10 points for each unexcused absence during the semester. In addition, students with repeated unexcused absences may be removed from project teams and required to complete an alternate assignment individually. Consistent and enthusiastic in-class participation will account for 100 points of your final grade.

2. In-Class Discussions (150 points total)

To help our class further explore complex topics in ecological planning and design, you will be assigned a case study to analyze and present to the rest of class, in groups of 2-4. These case studies will be based on readings that need to be completed prior to the beginning of class. Each group will submit the final chart, graph, or assignment by the end of the day via a shared document or CANVAS submission, or other means.

3. Lab Activities (250 points total)

The Lab portion of this course will primarily be dedicated to completing in-class activities which develop and hone your skills with key planning tools and analyses. These activities will include mapping biophysical, social, and other landscape features in GIS; analyzing population and economic trends in Microsoft Excel; and designing site-scale development concepts in AutoCAD. There will be a total of 10 in-class activities worth 25 points each. Specific prompts will be provided each week that an in-class assignment is due. **Activities can be submitted 1 week late for 50% credit, but will not be accepted after 1 week late.**

4. Case Study Review (150 points total)

Each student will need to complete a case study review of a conservation practice, program, or policy that aims to improve environmental conditions. This is a critical review of an issue that interests the student. The paper will focus on the existing case study, areas of issue, and a solutions using various policy/program tools discussed in class. Formatting Requirements: Minimum 1 page, Maximum 2 pages, single-spaced, 12-point font, Times New Roman, 3-5 peer-reviewed journal articles cited in-text, reference page not included in the page limit. There need to be appropriate headings that outline/organize your paper.

5. Semester Project (300 points total)

The semester project for NRES 394 will require you to improve upon and synthesize the skills you learn throughout the course. The project will be divided into three parts each worth 300 points. First, is a project proposal that outlines the general topic area you plan on exploring as well as the methods you intend on using. Second, is a presentation of your overall project. Third, is a final product that is either a technical report or an online mapping tool/story map.

****All Assignments, Due Dates, and Points are subject to Change****

| Due Date | Brief Description | Points |
|----------------------------|-------------------------------------------|--------------|
| Sundays, 11:59 pm | In-class Discussions (10, 10 points each) | 100 |
| Sundays, 11:59 pm | Lab Activities (10, 25 points each) | 250 |
| Week 6, 2/30 by 11:59pm | Case Study Review Proposal | 50 |
| Week 8, during class | Midterm Exam | 100 |
| Week 8, Friday by 11:59 pm | Semester Project Part 1 | 100 |
| Week 15, in class | Semester Project Final Presentation | 100 |
| Week 16, 5/15 by 11:59 pm | Semester Project Part 2 | 100 |
| Week 16, 5/16 by 11:59 pm | Case Study Review | 100 |
| Weekly | Course Attendance and Participation | 100 |
| Total | | 1,000 |

Course Policies

1. Grading Scale

| | |
|---------------------|-------------------|
| 92.6% or higher = A | 72.6 – 77.5% = C |
| 90.0 – 92.5% = A- | 70.0 – 72.5% = C- |
| 87.6 – 89.9% = B+ | 67.6 – 69.9% = D+ |
| 82.6 – 87.5% = B | 62.6 – 67.5% = D |
| 80.0 – 82.5% = B- | 60.0 – 62.5% = D- |
| 77.6 – 79.9% = C+ | Less than 60% = F |

2. Late Assignments

To receive full credit, assignments must be submitted by the stated deadline. Assignments turned in after the deadline will be considered late and will be subject to a 10% per-business day late penalty. After one week late, assignments are no longer accepted. Deadlines can be extended if notified via email 24 hours prior to the due date.

3. Academic Integrity

All work (unless part of a group project) must be done independently. Cheating, plagiarism, and other forms of academic misconduct will not be tolerated and will result in a grade of zero on the assignment. As you may encounter a number of complicated questions regarding how to cite sources of information (e.g. spatial data, images, or community data), we encourage you to discuss any questions you may have about citation, paraphrasing, or related topics with us prior to turning in an assignment. In addition, assignments turned in through CANVAS will be linked to turnitin.com – a program that compares your work to other sources to check for originality. The UWSP Community Bill of Rights and Responsibilities specifies the University policies regarding academic misconduct and disciplinary action. This can be found at the following web address: <https://www.uwsp.edu/dos/Pages/Academic-Misconduct.aspx>.

A note on free riding: This will not be tolerated. Students who do not contribute meaningfully to all required elements of group projects will either a) be docked credit for relevant portions of the project, and/or b) be removed from the group and required to complete separate deliverables individually. Again, if there is a problem with group dynamics, it essential that we address it as soon as possible.

4. Other Course Policies

- Posting course materials onto course-sharing websites directly violates the instructor's copyright on his intellectual property; permission to do so is unequivocally denied.

- All written work is expected to be grammatically correct, neat, and well organized. Work that is sloppy, hard to read, does not follow the prescribed format, and/or contains many spelling and/or grammatical errors will receive a grade of zero points.
- Cell phones will be put into pockets/backpacks/bags or otherwise stowed away during lecture and discussion. Appearance of your cell phone during class will indicate your disinterest in the topic and will thus count as an absence, and you will lose attendance points when this occurs.

5. *Emergency Preparedness*

- In the event of a medical emergency, call 911 or use one of the red emergency telephones, which are located outside Room 151, outside Room 172, between Rooms 252 and 255, and between rooms 219 and 221 (across the hall). Offer assistance if trained and willing to do so. Guide emergency responders to victims when instructed.
- In the event of a tornado warning, stay in the classroom. Lecture and discussion rooms in TNR both provide appropriate shelters.
- In the event of a fire alarm, evacuate the building in a calm manner. Meet at the northwest corner of parking lot E. Notify the instructor and/or emergency command personnel of any missing individuals.
- Active Shooter – Run/Escapes, Hide, Fight. If trapped, hide, lock doors, turn off lights, spread out and remain quiet. Follow instructions of emergency responders.
- See the UW-Stevens Point Emergency Management Plan at www.uwsp.edu/rmgt for details on all emergency response issues at UWSP.

6. *Accessibility Statement*

If you have a learning or physical challenge which requires classroom accommodation, please contact the UWSP Disability Services office with your documentation as early as possible in the semester:
 103 Student Services Center, (715) 346-3365; TTY (715) 346-3363;
www.uwsp.edu/special/disability/studentinfo.html

**** THE SYLLABUS, ASSIGNMENTS, READINGS, GRADE WEIGHTS, AND COURSE SCHEDULE ARE ALL SUBJECT TO CHANGE. THE INSTRUCTOR WILL NOTIFY THE STUDENTS AS SOON AS ANY SUCH CHANGES ARE MADE AND WILL PROVIDE UPDATED COURSE MATERIALS AS APPROPRIATE. ****

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Course Schedule

Note: There will be an interactive version of this schedule posted on CANVAS, which will be updated weekly with links to course content.

| | TOPIC | In-class Discussions | Lab Activities | Readings (Subject to Change) |
|--------|---------------------------------------------------|-------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1 | Foundations of Ecological Planning and Design | ○ In-class Discussion 1 | ○ Map Rubric Activity | ○ Steiner, Landscape Ecological Urbanism ○ Design with Nature Reflections ○ ESRI Map Books |
| Week 2 | Ecosystem Services & Paying for Conservation | ○ In-class Discussion 2 | ○ GIS Activity 1 | ○ Sustainable Sites Executive Summary, Chapter 1, Chapter 3 |
| Week 3 | Suitability Site Analysis, Strategic Conservation | ○ In-class Discussion 3 | ○ GIS Activity 2 | ○ Amundsen Chapter 4, pp. 172-189, 195-204 ○ Foreman Chapter 10, pp. 157-167 |
| Week 4 | Farmland Loss, Rewilding | ○ In-class Discussion 4 | ○ Project Proposal Work Session | ○ Berry pp. 3-13 ○ Foreman Chapter 8, pp. 128-143 |
| Week 5 | Land Trusts, Strategic Conversation | ○ In-class Discussion 5 | ○ GIS Activity 3 | ○ Peruse NCCT Website ○ Amundsen and Culp, pp. 15-19 ○ Amundsen Chapter 1, pp. 24-40 |
| Week 6 | Site Analysis | ○ In-class Discussion 6 | ○ GIS Activity 4 | ○ Marsh, Vegetation ○ Marsh, Topography |
| Week 7 | Landscape Change | ○ In-class Discussion 7 | ○ GIS Activity 5 | ○ Marsh, Stormwater ○ Marsh, Wetlands |
| Week 8 | Midterm Overview | ○ ArcGIS Online Demo | ○ ArcGIS Online Activity ○ Project Proposal Work Session | None |
| | SPRING BREAK | SPRING BREAK | SPRING BREAK | SPRING BREAK |

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|----------------|------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Week 9 | Human Dimensions of Ecological Planning | ○ In-class Discussion 8 | ○ GIS Activity 6 | ○ Lockwood et al., Governance Principles ○ Ostrom ○ Sharp et al., Collaborative Management |
| Week 10 | GUEST LECTURE Green/Blue Urbanism, Biophilic Design | ○ Work session | ○ GIS Activity 7 | ○ Kellert, Biophilic Design ○ Beatley, Biophilic Cities, Blue Urbanism |
| Week 11 | Environmental Justice | ○ In-class Discussion 9 | ○ GIS Activity 8 | ○ Rayer, Population Forecast Errors ○ Rothfeder, Salt Lake County Water Budget |
| Week 12 | Conservation Design | ○ In-class Discussion 10 | ○ Work Session | ○ Arendt: Growing Greener ○ Arendt: Linked Landscapes |
| Week 13 | AutoCAD Lab | ○ Work Session | ○ AutoCAD Activity | ○ Jackson, Integrated Eco-Village Design Carter, Developing Conservation Subdivisions |
| Week 14 | Full Class Work Session | ○ Work Session | ○ Work Session | ○ Work Session |
| Week 15 | Project Presentations | | ○ Presentation due in class (files due in CANVAS by 1 pm) ○ Semester Project Part 2 due Monday, 5/15 by 11:59 pm | |
| 5/15 | | | FINAL PROJECT REPORT DUE | |