NRES 394: Ecological Basis for Planning and Design

Course Syllabus ***Spring 2022***

Anna Haines and Hannah Keckeisen
Mondays, 2:00 - 4:50 pm
TNR 271 and Zoom

Office: TNR 182 OR https://wisconsin-edu.zoom.us/j/9326731923 (Meeting ID – 932 673 1923)
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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 which 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: Class will be held in a hybrid format, utilizing both in person class time, and Zoom video conferencing. Class Zoom meetings can be accessed directly through the CANVAS learning platform. Students will be given significant time for self-directed and group work and will be expected to use permitted time as needed for this purpose. During class times, the CNR Advanced Computing Lab (ACL) (TNR 322) will typically be available for safe, socially distanced individual and/or small group work, in accordance with COVID-19 guidelines. The lecture portion of the class will be in TNR 271 while the discussion and work portions of the class will be within the ACL.

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 group 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. CANVAS Reading Discussions (150 points total)

Thinking through the readings together is an important aspect of this course. As a result, there will be 10 online discussions of readings during the semester, worth 15 points each. These discussions will take place in threads posted to CANVAS. For every discussion, each student will be required to submit at least 1 detailed question relevant to the readings and at least 2 detailed responses to questions posed by other students. Discussion posts should be carefully composed and well written, should clearly demonstrate that you have completed and reflected upon the readings, and should follow the course rules for respectful and constructive dialogue. All posts will be due by 11:59 pm on Sunday for the assigned week.

3. Class Activities (250 points total)

The Discussion/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. All assignments will be due by 11:59 pm on Sunday for the assigned week.

4. 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 2 parts. You will choose a work partner and a study area (a county in Wisconsin) and will analyze the planning and design context for this study area. You will replicate and refine all previous in-class activities for this study area, create a final synthesized report which includes all of your analyses in a thorough and nuanced sustainable development plan, and present the finished work product in class. At the conclusion of the semester, you will evaluate your partner's contribution to the project. Negative peer evaluations will result in a corresponding grade reduction. Specific instructions and guidelines will be provided at appropriate times over the course of the semester.

5. Exams (200 points total)

The course will include a midterm (100 points) and final exam (100 points), which will test your understanding of readings, lectures, and applied planning and design skills and tools.

Due Date	Brief Description	Points
Sundays, 11:59 pm	Reading Discussions (10, 15 points each)	150
Sundays, 11:59 pm	In-class Activities (10, 25 points each)	250
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 15, Sunday by 11:59 pm	Semester Project Part 2	100
Finals Week 16	Final Exam	100
Weekly	Course Attendance and Participation	100
	Total	**1,000**

V. Course Policies

1. Grading Scale

92.6% or higher = A
90.0 – 92.5% = A-
87.6 – 89.9% = B+
82.6 – 87.5% = B
80.0 – 82.5% = B-
77.6 – 79.9% = C+
72.6 – 77.5% = C
70.0 – 72.5% = C-
67.6 – 69.9% = D+
62.6 – 67.5% = D
60.0 – 62.5% = D-
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-day late penalty, including weekends. Deductions will be capped after one week, meaning that even very late assignment will be worth up to 30% of the total available points.

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/Escape, 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. ****

Course Schedule *Spring 2022*

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

	TOPIC	READING	Assignments
Week 1 **1/24** **In Person**	**Foundations of Ecological Planning and Design** *Discussion: Introduce GIS Activity 1*	○ Steiner, *Landscape Ecological Urbanism* ○ *Design with Nature* Reflections ○ ESRI Map Books	○ **Reading Discussion 1**
Week 2 **1/31** **Virtual**	**Ecosystem Services** *Discussion: Introduce Project Part 1*	○ Sustainable Sites Executive Summary, Chapter 1, Chapter 3	○ **Reading Discussion 2** ○ **GIS Activity 1**
Week 3 **2/7** **In Person**	**Suitability Site Analysis, Strategic Conservation** *Discussion: Introduce GIS Activity 2*	○ Amundsen Chapter 4, pp. 172-189, 195-204 ○ Foreman Chapter 10, pp. 157-167	○ **Reading Discussion 3 (was 5)**
Week 4 **2/14** **Virtual**	**Farmland Loss, Rewilding – Anna Haines** *Discussion: Work Session*	○ Berry pp. 3-13 ○ Foreman Chapter 8, pp. 128-143	○ **Reading Discussion 4** ○ **GIS Activity 2**
Week 5 **2/21** **In Person**	**Land Trusts, Strategic Conversation – Anna Haines** *Discussion: Introduce GIS Activity 3*	○ Peruse NCCT Website ○ Amundsen and Culp, pp. 15-19 ○ Amundsen Chapter 1, pp. 24-40	○ **Reading Discussion 5 (was 3)** ○ **GIS Activity 3**
Week 6 **2/28** **Virtual**	**Site Analysis** *Discussion: GIS Land Cover Analysis*	○ Marsh, Vegetation ○ Marsh, Topography	○ **Reading Discussion 6** ○ **GIS Activity 4**
Week 7 **3/7** **In Person**	**Potential Stevens Point Field Trip** *Discussion: GIS Land Cover Change*	○ Marsh, Stormwater ○ Marsh, Wetlands	○ **GIS Activity 5**
Week 8 **3/14** **Virtual**	**Midterm** *Discussion: Work Session*	None	○ **Midterm during class time, Mon. 3/14 from 2-5 pm** ○ **Semester Project Part 1 (due Sunday, 3/20 by 11:59 pm)**
3/21-3/27	**SPRING BREAK**		

Week 9 **3/28** **Virtual**	**Human Dimensions of Ecological Planning** **GUEST LECRTURE** *Discussion: GIS Fragmentation Analysis*	○ Lockwood et al., Governance Principles ○ Sharp et al., Collaborative Management	○ **Reading Discussion 7** ○ **GIS Activity 6**
Week 10 **4/4** **In Person**	**Green/Blue Urbanism, Biophilic Design** *Discussion: Work Session*	○ Kellert, Biophilic Design ○ Beatley, Biophilic Cities, Blue Urbanism	○ **Reading Discussion 8**
Week 11 **4/11** **Virtual**	**Population and Economic Analysis – Anna Haines** *Discussion: Population Analysis*	○ Rayer, Population Forecast Errors ○ Rothfeder, Salt Lake County Water Budget	
Week 12 **4/18** **In Person**	**Conservation Design** *Discussion: Economic Analysis*	○ Arendt: Growing Greener ○ Arendt: Linked Landscapes	○ **Reading Discussion 9**
Week 13 **4/25** **Virtual**	**AutoCAD Lab** *Discussion: Work Session*	None	○ **AutoCAD Activity**
Week 14 **5/2** **In Person**	**Full Class Work Session**	○ Jackson, Integrated Eco-Village Design ○ Carter, Developing Conservation Subdivisions	○ **Reading Discussion 10**
Week 15 **5/9** **Virtual**	**Project Presentations**		○ **Presentation due in class (files due in CANVAS by 1 pm)** ○ **Semester Project Part 2 due Sunday, 5/15 by 11:59 pm**
5/16	**FINAL EXAM**		