ENR 4900.01 Environment and Natural Resources Management:

Capstone Experience

(3 credit hours)

Water and Aquatic Science Focus

Spring 2018

Instructor:

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Class meeting time and place:

Tuesdays and Thursdays, 11:10am to 12:30pm, 370 Kottman Hall

COURSE DESCRIPTION AND GOALS

This section of the SENR senior capstone course will focus on the integration of students' knowledge of social-ecological systems, natural resources management, and environmental science with an emphasis on **water quality and aquatic issues from local to global scales**. The objective of a capstone course is to provide students with an opportunity to integrate the coursework, knowledge, skills, and experiential learning gained throughout their academic

career, thus allowing students to demonstrate their mastery of learning across the curriculum in preparation for further career development. The primary goal of ENR 4900 is therefore not to increase your knowledge of a particular topic but to give you the opportunity to implement those learned skills through the development of a team project. The team project will allow each member to apply their unique skills and knowledge toward a common goal.

The class will work as a group for a single stakeholder to develop specific deliverable outcomes (e.g. manuals, curricula, multimedia content, etc.) required by the client to meet specific water quality related needs. We will use a student-led project management framework to facilitate completion of the project, such that the work will be divided among several teams and cohesion provided by project coordinators and a project manager. The instructors will act as consultants, but ultimately the success of the final project will be determined by the students. The course will also include a number of training sessions and seminars designed to improve students' transferable skills and readiness for the job market.

Learning objectives:

1. Explain how individuals, organizations, and institutions can successfully address complex environmental and natural resource management issues at local and global scales.

2. Identify key stakeholders involved in natural resource and environmental management issues and identify ways to engage these stakeholders in planning and decision-making processes.

3. Work as a member of an interdisciplinary team to create and communicate, via deliverable outputs, a shared understanding of a complex environmental or natural resource issue and strategies for addressing that issue.

4. Communicate effectively in a professional setting to promote a plan of action to address an environmental or natural resource issue.

5. Effectively communicate to potential employers your values, interests, career goals and the knowledge and skills you have to offer.

<div align="center">COURSE FORMAT AND EXPECTATIONS</div>

Format: **The majority of this course will be student-led - this means that students are responsible for identifying and requesting the information or guidance they need to successfully achieve the objectives of the course.** Therefore, our meeting times will be used to discuss current issues, work on team projects, and develop career skills using a workshop format, group and class discussion, and discussions with guest lecturers. Students are expected to come to class and actively participate in class discussions and activities. The semester will loosely be

divided into three sections: a) project management and topic development; b) research; and, c) product development. We will spend the first third of the semester developing professional skills, learning about the Group Project and generating topic ideas. In the second third of the semester, we will have a number of guest speakers presenting their perspectives on environmental and natural resource issues, how they engage the public through outreach activities, and their career paths in the field. During this time teams will be working to research their topics and develop specific plans for realizing their objectives. In the final part of the semester almost all class time will be devoted to creating the products required by the client and pulling the final project together.

Readings: There is no required text book for this course; however, we have created a "Resources" module on the class Carmen page. This module contains various articles, documents and other resources we consider important for the successful completion of the class project. It is strongly suggested that you read the resources provided for you.

Participation: Students are required to attend all class sessions. Regular attendance is a necessary, but insufficient, condition for a passing grade: active participation in discussions and in the group project is necessary. You are responsible for being aware of any changes to the syllabus and information presented and discussed in class, for materials distributed in class, and classroom exercises and assignments. A major portion of your grade will be determined by the Peer Assessments conducted throughout the semester that will take into account your participation in group activities.

Attendance: Students needing to miss class should notify me via e-mail *prior* to the absence. Emergency absences will be dealt with on an individual case basis. Attendance and participation represent a significant portion of the course grade and unexcused absences will be reflected in your grade.

Late assignments: No late assignment will be accepted unless prior permission has been given by the instructor, except when a documented emergency or extenuating circumstance was the cause. Failure to participate in team activities or presentations will be treated similarly.

Communications: I will use Carmen to communicate important information to students about the class. You can communicate with me and the TA through e-mail, during class breaks, or at the end of class. Students are also strongly encouraged to schedule individual meetings with me and/or the TA between classes. I enjoy one-on-one conversations with students and I guarantee it will improve your chances of achieving your objectives for the class. All email correspondence should include "ENR 4900.01" in the subject line, be properly addressed, and written professionally. If you have read this far in the Syllabus, send me an email stating your favorite water body for a bonus point on your participation grade.

I. Individual Development

Professional Portfolio	15%
Site Visit Critique	10%
Peer Assessments	10%
Participation	5%

II. Group Project

Team/Executive Proposals	10%
Team/Executive Updates	10%
Final Project	40%
Total	**100%**

Grading Scheme

93-100%	A	80-82	B-	66-69	D+
90-92	A-	77-79	C+	60-65	D
87-89	B+	73-76	C	<60	E
83-86	B	70-72	C-		

I. Individual Development

Professional Portfolio (15%): A major objective of a senior capstone course is to help students develop their readiness for a career in their field. One key to obtaining first an interview and then a career in your field is to present your experience and goals in a succinct and professional manner. Each student will create and submit for review a professional Cover Letter (5%), Curriculum vitae/Resume (5%), and a Personal Statement (5%). Instructions for each component of the Professional Portfolio will be provided on Carmen and in class.

Site Visit Critique (10%): We have arranged several field trips for students to see first-hand how successful outreach and education programs, geared to a variety of audiences, work. Each student is required to attend **at least one** site visit, though are welcome to attend all trips. Students will then write a short summary and critique of the program that they visited. Instructions for writing the critique will be available on Carmen and discussed briefly in class. A list of sites, dates and times of field trips will be provided. We will provide transportation, leaving from the Olentangy River Wetlands Research Center.

Peer Assessments (10%): In almost all job advertisements employers state that job candidates should be able to work independently and as part of a team. This means that employers want to work with people who can complete assigned tasks on time and up to standard, and to then integrate that work with a team to achieve larger goals. To become proficient in these skills, we will employ a Peer Assessment framework wherein Team Members will receive peer assessments by the Project Coordinators three times over the course of the semester, while Project Coordinators and the Project Manager will be assessed at the end of the semester by team members and coordinators, respectively. Assessment rubrics will be available on Carmen so that students will know what aspects of their performance are being assessed.

Participation (5%): Students are required to attend all class sessions. Regular attendance is a necessary, but insufficient, condition for a passing grade: active participation in discussions and in the group project is necessary. Overall participation in all aspects of the class will be assessed by the instructors.

*NOTE: *We will occasionally post information for relevant external events and indicate that attendance at these events will be worth bonus points on your final grade. If you become aware of other events that you would like to attend and feel they might be relevant to course material please let me (gray.1030@osu.edu) know in advance and I will decide if attendance warrants bonus points.*

II. Group Project
The major component of a senior capstone course is the group project, as reflected in the percentage of your final grade determined by the success of the final project. The details of this project (and each of the assignments listed below) are described in the document "Group Project SP18" in the Module titled Group Project Details in Carmen. In brief, we will use a student-led project management framework to facilitate the project: there will be one student Project Manager, five Project Coordinators, with the remaining students being assigned as Team Members to one of five teams (note: students wishing to be in leadership positions will need to apply for them, and will receive compensation in the form of a boost to your final grade). The basis of your final Group Project grade will be based on the following three assignments:

Team/Executive Proposals (10%): Each team will develop a proposal outlining their specific topic and their plan of action for accomplishing their specific tasks, which will be submitted by the Project Coordinators. The Project Manager will submit an Executive Proposal that summarizes the objectives and general action plan of all teams to ensure cohesiveness among all components of the project. All teams will receive feedback on their proposals and are expected to incorporate that feedback to meet the needs of the client.

Team/Executive Updates (10%): Each team, led by their Project Coordinator, will submit two brief updates about their progress on the work submitted in their proposals throughout the semester. This helps to ensure that all teams are on track toward completing their part of the overall project and for further feedback. The Project Manager will additionally provide Executive Updates that outlines advances on the project, areas requiring more attention, and an overall assessment of progress.

Final Project (40%): For this project you are tasked with actually developing tangible products for the client. For example, one team may be tasked with producing a series of short videos that discuss the role of wetlands in water quality for three different audiences; therefore, at the end of the semester you are expected to submit videos with appropriate language and content for each of those audiences. The Project Manager will work closely with the client and the Project Coordinators to ensure cohesion and consistency among the components each team is working on. The quality of the overall project will be assessed by instructors and the client.

Written Assignments: Format and Submission

All written assignments are to be submitted electronically through Carmen by 11:59 pm on the date that they are due, with the course number, your last name or group name, and assignment name as the file name (e.g. "4900 Proposal_Biodiversity Group"). Written assignments should have 1" margins, 12 pt Times New Roman font, double line spacing, and all pages should be consecutively numbered, including the cover page. All written assignments should include a cover page that provides the names of all group members, name.#s, title of the assignment, and the date. In-text citations and literature cited should [follow instructions](#) from the journal, Freshwater Science. Note that the cover page, literature cited, figures and tables, will *not* count toward page limits given for assignments.

University Resources

The university has a variety of resources in place to support students and a safe campus environment. Students experiencing stress, sleep problems, anxiety, depression, interpersonal concerns, death of a significant other, and alcohol use or ***any event that has significantly impacted your concentration on education, work or family matters*** are encouraged to contact the Office of Student Life at 614-292-9334 (https://studentlife.osu.edu/) and/or Counseling and Consultation Services (CCS) at 614-292-5766 (www.ccs.osu.edu) for assistance, support, and advocacy. CCS offers a number of FREE *drop-in-when-you-are-able* workshops (http://www.ccs.ohio-state.edu/drop-in-workshops/). No registration is necessary, no prior appointment is needed, and workshops are open to all enrolled OSU students.

Academic Integrity

This course adheres to the Code of Student Conduct (http://studentaffairs.osu.edu/csc/) and policies set by the OSU Committee on Academic Misconduct (http://oaa.osu.edu/coam.html). All students should familiarize themselves with these materials, and act appropriately. Academic misconduct is defined by the Ohio State University's Code of Student Conduct (Section 3335-23-04) as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Academic misconduct will not be tolerated in this class. For more information, please feel free to review the "Ten Suggestions for Preserving Academic Integrity" http://oaa.osu.edu/coamtensuggestions.html or "Eight Cardinal Rules of Academic Integrity" http://www.northwestern.edu/provost/students/integrity/rules.html.

Accommodating Students' Learning

For circumstances approved by the university, we can make accommodations that facilitate your learning in this class. If you have university-approved circumstances that require special accommodations (e.g., student athlete, ROTC, Marching Band, a disability), it is your responsibility to let the instructor know at the beginning of the semester or as soon as it comes to your attention during the semester. You are also required to inform the instructor about a need to miss class prior to any excused absence. If you have a disability, then please register with the Office for Disability Services (ODS) as soon as possible by contacting (614) 292-3307, and let your instructor know.

Reporting Incidents of Bias

To ensure a safe learning environment, please speak to the instructor immediately if you feel that you have experienced bias (whether based on race, ethnicity, gender identity or expression, sexual orientation, religion, national origin, age or sex) within the classroom. You can also anonymously report any incidents of bias experienced on campus to the Bias Assessment Response Team (BART).

Career Services

The School of Environment and Natural Resources has a Career Services Office located in 210 Kottman Hall. Please call the main office at 614-292-2265 or email senr@osu.edu to schedule an appointment or use the available Express Walk-In Hours hosted every Friday 9am – 4pm. You are also encouraged to explore Hire-a-Buckeye: http://senr.osu.edu/hireabuckeye.

ENR 4900.01 Environment and Natural Resources Management: Capstone Experience
Tentative Schedule* of Topics and Assignments

Updated January 3, 2018

*Expect this schedule to change! Students will be notified in class or via Carmen in advance of any changes in the schedule

Week	Date	Topic	Assignments
		Part 1: Project management and topic development	
1	01/09	Introduction to Capstone and Student-Led Management	
	01/11	Project Introduction with Brent Macolley Water Quality Issues	
2	01/16	*Guest Lecture:* Chelsey Nieman, finding jobs	
	01/18	*Guest Lecture:* Kim Winslow, CV and resume development	
3	01/23	Workshop: Project development	Cover Letter & CV/Resume due
	01/25	Workshop: Team assignments and Topics	Personal Statement due
4	01/30	*Guest Lecture:* Columbus Metroparks, Outreach programming	
	02/01	Workshop: Proposal development	
		Part 2: Research	
5	02/06	*Guest lecture:*	
	02/08	Workshop: Research	Proposals due
6	02/13	*Guest lecture:*	
	02/15	Workshop: Communicating Science	
7	02/20	*Guest lecture:*	
	02/22	Workshop: Budgets and Resources	Team/Executive Update #1 due
8	02/27	*Guest lecture:*	Team Member Peer Assessment #1
	03/01	Workshop: Research	

9	03/06	*Guest Lecture:*	
	03/08	Workshop: Project Manager and Coordinators Updates	
	03/13	**Spring Break – No Class**	
	03/15	03/12 to 03/19	
		Part 3: Product development	
10	03/20	Workshop: Product development	Site Visit Critique due
	03/22	Workshop: Product development	Team Member Peer Assessment #2
11	03/27	Workshop: Product development	
	03/29	Workshop: Product development; Updates	
12	04/03	Workshop: Product development	
	04/05	Workshop: Product development	Team/Executive Update #2
13	04/10	Workshop: Pulling it all together	
	04/12	Workshop: Practice demos, presentations, etc.	
14	04/17	**Demonstration and presentations**	
	04/19	**Demonstration and presentations**	
15	04/23	*note this is a Monday – Last Day of Classes	**Final Project due** All Peer Assessments due