

**CSUS 453**  
**Watershed Planning and Management**

**Spring 2021**  
**Tuesday and Thursday, 10:20-11:40 am**  
Via Zoom

**INSTRUCTOR**

Ruth Kline-Robach, Water Resources Specialist  
Department of Community Sustainability *and*  
Institute of Water Research  
[kliner@msu.edu](mailto:kliner@msu.edu)

**OFFICE HOURS**

I am happy to meet with you to answer your questions about the course materials or to discuss your career goals. I will stay on the course Zoom call each for several minutes on Tuesday and Thursday after class to see if you have any questions, or you may send me an email message to schedule an alternative time to meet.

**COURSE DESCRIPTION**

Watershed planning and management takes place at the interface of numerous natural processes and a complex array of social, economic, political and institutional forces. This course will focus on the dynamics of that interface and provide students with a working knowledge of watershed planning and management. Students will explore the foundations of the watershed planning and management process in the United States, including: techniques for assessing the physical, chemical and socioeconomic conditions in a watershed; legal, financial and institutional dimensions of watershed planning and management; land management alternatives for watershed protection and restoration; the design and implementation of watershed educational campaigns; and, the evaluation of watershed management activities.

**PREREQUISITE**

CSUS 354 – Water Resources Management, or prior approval by the instructor

**COURSE LEARNING OUTCOMES**

Students who complete this course will:

1. Describe the regulatory framework that underlies the watershed planning process in the United States and explain the elements of an approvable Clean Water Act Section 319 watershed management plan
2. Identify and use diverse data sets that are used in the watershed planning process
3. Find and apply applicable data to a local watershed planning effort

4. Identify potential funding sources for watershed planning and management activities
5. Articulate the potential roles of community partners in the watershed planning process
6. Identify key stakeholders in a watershed planning effort and plan for their meaningful involvement.
7. Practice running a stakeholder meeting and addressing conflicts.
8. Evaluate the efficacy of management alternatives for watershed protection and restoration efforts.
9. Understand the challenges of implementing policies in complex systems.
10. Prepare an information and education campaign for a local watershed.

## READING MATERIALS

There is no required textbook. The course will draw upon information in the US EPA Watershed Planning Handbook (U.S. Environmental Protection Agency (2008). **Handbook for Developing Watershed Plans to Restore and Protect Our Waters. EPA 841-B-08-002**), in addition to various journal articles and agency reports.

Links to all readings will be posted on the course D2L website. It is your responsibility to read the materials prior to each class session.

## COURSE FORMAT

The course will include a combination of lectures, webinars, problem-based in-class discussions, homework exercises and guest lectures.

## GRADING POLICY

<b>Total possible points:</b>	<b>500 points</b>
Attendance and In-class Exercises	200 (40%)
Homework Assignments (10)	100 (20%)
Watershed Campaign Project and Presentation	100 (20%)
Final Exam	100 (20%)

### Attendance and In-class Exercises

This class will rely heavily on in-class work, and attendance and participation at each class session is expected. This course is structured much like a graduate level course; as such, we will rely heavily on assigned readings, which we will reflect upon and discuss in class. Discussions about the readings will generally occur during Thursday's class session each week. You will be asked to summarize the readings and answer questions about them as part of your assigned homework in preparation for these discussions. In addition, I will assign class members to facilitate the discussions on a rotating basis.

### Homework Assignments

Ten times over the semester, you will be asked to complete an assignment that is a direct extension of course lectures or in preparation for our class discussions. Each assignment will be worth 10 points.

### Watershed Outreach Project

Students will develop outreach campaign materials for a local watershed organization and present the materials to the class at the end of the semester. The project grade will be based on both the written materials and final presentation.

### Final Exam

The final exam will incorporate a written critique of a watershed management plan, incorporating questions and content covered throughout the semester.

Final course grades will be determined by the following scale:

<b>Points</b>	<b>Percentage</b>	<b>Grade</b>
450-500	>90%	4.0
425-449	85-89%	3.5
400-424	80-84%	3.0
375-399	75-79%	2.5
350-374	70-74%	2.0
325-349	65-69%	1.5
300-324	60-64%	1.0
0-299	<60%	0.0

### **ZOOM ETIQUETTE**

This class is synchronous, meaning that we will meet at a specific time (Tu-Th at 10:20-11:40 am) through Zoom. You are expected to attend class regularly, access the Zoom link on time and participate in class discussions, in-class work and polls. Do your best to find a quiet location that is free from distractions, so you can fully engage with your instructor and peers, and please be considerate and appropriate while class is in session.

### **STUDENTS WITH SPECIAL NEEDS**

If you require additional accommodations, please contact me as early as possible in the semester and at least 2 weeks prior to an exam. The Resource Center for Persons with Disabilities (<http://www.rcpd.msu.edu>), 884-7273 (voice) or 355-1293 (TTY)) is also available to assist you.

### **INCLUSIVITY**

As members of the MSU community and this class, it is expected that an effort be made to create an inclusive learning environment in which individuals are expected to treat each other with respect, civility, and consideration. With a variety of educational and cultural backgrounds and diverse beliefs, it is expected that each of us participate in creating a collaborative environment that embraces different beliefs, ideas, and practices.

## ACADEMIC INTEGRITY

[Article 2.III.B.2](#) of the Academic Freedom Report states: “The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards.” In addition, the Department of Community Sustainability adheres to the policies on academic honesty specified in General Student Regulation 1.0, [Protection of Scholarship and Grades](#); the all-University Policy on [Integrity of Scholarship and Grades](#); and [Ordinance 17.00](#), Examinations.

Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, exams, and papers, without assistance from any other person. You are also expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the [www.allmsu.com](#) website to complete any course work in this course. Students who violate MSU regulations on Protection of Scholarship and Grades will receive a failing grade in the course or on the assignment.

Instances of plagiarism constitute academic dishonesty and will result in a grade of zero for the assignment in which plagiarism occurs. See <https://ombud.msu.edu/resources-self-help/academic-integrity> for a definition and discussion of plagiarism. **Turnitin.com will be used for all written assignments.**

Faculty members are required to report all instances in which a penalty grade is given for academic dishonesty. Students reported for academic dishonesty are required to take an online course about the integrity of scholarship and grades. A hold will be placed on the student's account until such time as the student completes the course. This course is overseen by the Associate Provost for Undergraduate Education.

Please also be aware of the Spartan Code of Honor:

*“As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do.”*

## CITATIONS AND REFERENCES

The APA format should be used for any in-text citations and reference lists when you rely on information from other sources for the final paper. A good reference site for APA style can be found at <https://owl.english.purdue.edu/owl/resource/560/01/>.

## COMMUNICATIONS

Class materials, including lecture notes, links to required readings and any announcements or changes to the course schedule will be posted on the course D2L website. **Be sure to check the site prior to each class session.**

If you need to contact me for any reason, please e-mail me at [kliner@msu.edu](mailto:kliner@msu.edu).

## DRAFT COURSE SCHEDULE

Week	Dates	Topic	Activity/Assignment
Week 1	Jan. 19 & 21	<b>Introduction:</b> Syllabus; Overview of the watershed planning process Federal and State Regulatory Framework for Watershed Planning	Journal article review and discussion
Week 2	Jan. 26 & 28	<b>The WMP process; Defining the project scale; adaptive management</b>	Journal article review and discussion
Week 3	Feb. 2 & 4	<b>Watershed Delineation, Hydrologic Unit Codes, Accessing information about the watershed</b>	Delineation exercise; Accessing available data; Watershed mapping homework
4	Feb. 9 & 11	<b>Developing Quality Assurance Program Plans (QAPPs)</b>	QAPP review
5	Feb. 16 & 18	<b>Watershed Planning in Urbanized areas</b>	Watershed plan review; Journal article review and discussion
6	Feb. 23 & 25	<b>Citizen Science/Volunteer Monitoring in Watershed Planning</b>	Journal article review and discussion
7	Mar 2 & 4	<b>Mar 2 – BREAK Mar 4 – Collecting and Interpreting Monitoring Data</b>	Data review homework exercise
8	Mar. 9 & 11	<b>Addressing E. Coli TMDLs; Identifying management strategies for the WMP</b>	Documenting BMP opportunities and constraints exercise
9	Mar. 16 & 18	<b>Engaging Farmers in Watershed Planning and Management</b>	Journal article review and discussion
10	Mar. 23 & 25	<b>Building Partnerships for watershed planning; The role of the county drain commissioner</b>	Local partnership discussion
11	Mar. 30 & Apr 1	<b>Developing information campaigns; Implementation planning and evaluation of BMPs</b>	I/E Exercise
12	Apr 6 & 8	<b>Estimating load reductions and defining BMPs with watershed models; Using Social Indicators in evaluations</b>	Using SIDMA

13	Apr 13 & 15	<b>Watershed Leadership</b>	Meeting planning and facilitation exercise
14	Apr 20 & 22	<b>Outreach Campaign Presentations (cont.)</b> <b>Wrap up and Review</b> <b>Apr 22 – STUDY DAY</b>	
<b>Final Exam: Friday, April 30 7:45 – 9:45 am</b>			