TCORE Introduction to Science Tentative Class Schedule

Any changes will be announced in class, via email, and on Canvas.

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| **Week** | **Lecture Topics and Exercises** | **Tasks/Due Dates**  |
| 1 Th 10/1   | Introduction to course and “flipped model, Canvas Orientation,Syllabus Activity TOSLS and TOSRA SurveysScientific Method Exercise |  |
| 2 T 10/6  | Concept Check on recorded lectureCritical ThinkingGraphs and Uncertainty Active Learning Exercise Graphs and Uncertainty In-Class Assignment Questions about PSA assignment? See links on Canvas | **Tuesday:** Complete TOSLS and TOSRA Surveys BEFORE classWatch “Experimental Design and Data” recorded lecture BEFORE class |
|  Th | **We will meet in the science building, room 109** **DO NOT GO TO OUR NORMAL CLASSROOM TODAY**UWT Media StaffDiscussion: Rubric for storyboard and PSA videoMaking graphs in Excel (we will complete this in **SCI 109**) | **Thursday:** Submit your rubric on Canvas and bring a copy to class |
| 3 T 10/13  | Concept Check on recorded lecture Evaluating the credibility of web sourcesEcosystems and Nutrients (Part 1) Active Learning ExerciseEcosystems and Nutrients In-Class Assignment | **Tuesday:** Watch “Ecosystems and Nutrients (Part 1)” recorded lecture BEFORE class |
|  Th | **Quiz 1**Ecosystems and Nutrients (Part 2) Active Learning Exercise**Video:** “Poisoned Waters”  | **Thursday:** Watch “Ecosystems and Nutrients (Part 2)” recorded lecture BEFORE class |
| 4 T 10/20  | **Field Trip #1** Central Wastewater Treatment Plant *Note to student driver: bring TWO signed documents to MAT 004*  | **Tuesday:**Dress appropriately and bring a notebook and pencil |
|  Th | Concept check on recorded lecture Pollution Active Learning ExercisePollution In-Class AssignmentGame plan for research project (how to write a field report) | **Thursday:**Watch “Pollution” recorded lecture BEFORE class |
| 5 T 10/27  | Research Project: Sampling for plastics at Commencement Bay Beaches | **Tuesday:** Pre-Research Assignment Due at beginning of class |
|  Th | Lab Work: Quantify plastics, Compile data from both beaches, Work on Lab Report **in SCI 217** | **Thursday:**Field Report Due at beginning of class |
| 6 T 11/3 | Wrap up beach plastics research**Video:** Finish “Poisoned Waters” Review for Exam 1 | **Tuesday:** Lab Report Due at beginning of class |
|  Th | **Exam 1**  |  |
| 7 T 11/10 | Storyboards and comments from peersDiscuss revising PSA rubric | **Tuesday:** Bring your storyboard to class |
|  Th | Concept check on recorded lecture Stormwater (Part 1) Active Learning ExerciseStormwater (Part 1) In-Class Assignment | **Thursday:**Watch “Stormwater (Part 1)” recorded lecture BEFORE class |
| 8 T 11/17   | Concept check on recorded lecture Stormwater (Part 2) Active Learning ExerciseReview for Exam 2 | **Tuesday:** Watch “Stormwater (Part 2)” recorded lecture BEFORE class |
|  Th | **Field trip – LID & stormwater at Center for Urban Waters** | **Thursday:**Dress appropriately and bring a notebook and pencil |
| 9 T 11/24  | **Exam 2**  |  |
|  Th | **NO CLASS THANKSGIVING HOLIDAY** |  |
| 10 T 12/1 | Concept check on recorded lecture Exercise relating to exam 2 contentHabitat Alterations (Part 1) Active Learning Exercise | **Tuesday:** Watch “Habitat Alterations (Part 1)” recorded lecture BEFORE class |
|  Th | Concept check on recorded lecture Habitat Alterations (Part 2) Active Learning ExerciseHabitat Alterations (Part 2) In-Class AssignmentGame plan for next week | **Thursday:**Watch “Habitat Alterations (Part 1)” recorded lecture BEFORE class |
| 11 T 12/8   | View all PSAs in class | **Tuesday:** You will need to access to your PSA |
|  Th | Practice final exam Q & A Review for Comprehensive Final |  |
| 12  | **Tuesday December 15 - Comprehensive Final** | **Normal time and location** |

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| **Assessment** | **Content (What to study)** |
| **Quiz 1** | Scientific MethodRecorded Lecture: “Experimental Design and Scientific Data” Quiz 1 will include Concept Check questions regarding “Ecosystem and Nutrients (Part 2)” recorded lectureStudy relevant active learning exercises and in-class assignments |
| **Exam 1** | Quiz 1 material, Ecosystems & Nutrients, Pollution, Wastewater Field Trip (see study guide on Canvas), relevant active learning exercises and in-class assignments |
| **Exam 2** | Stormwater, Center for Urban Waters field trip (see study guide on Canvas), relevant active learning exercises and in-class assignments |
| **Final Exam** | 1. Habitat Alterations lecture
2. Comprehensive Review of topics covered in class
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Office of Undergraduate Education

**TCORE 102 (Autumn 2015)**

**Where the water meets the road:**

**Examining the environmental impacts of urbanization on aquatic ecosystems**

Lecturer: Erik McDonald

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| Class Time and Location | **Section A**: T, Th 8:00-10:05am in Joy 205**Section C**: T, Th 12:50-2:55pm in TLB 109 |
| Office Hours(or by appointment) | T, Th 10:15-11:15amOffice Location: Science 102D |
| Contact  | emcdonal@uw.eduAfter Day 1:- Read syllabus thoroughly - Check out Canvas- Complete the surveys- Watch first recorded lecture- Read PSA assignment description | (253)692-4667 |

Science Librarians: Carole Svensson & Katie Monks

**COURSE DESCRIPTION**

How do *your* actions impact the aquatic organisms living in Puget Sound? As the human population continues to climb, more and more people are migrating to urban areas. This in turn imposes greater stresses on adjacent water bodies and other natural resources. Lectures will focus on environmental issues in local aquatic systems as well as some exciting sustainable actions occurring in our region. In addition, you and your peers will use media to highlight issues that are occurring in urban centers outside the United States.

**CORE**

The Core program consists of a coordinated series of courses that represent the various disciplines in the university. This course, along with the others in your cohort, fulfills one of the university’s general education requirements in each of the areas of knowledge plus composition. The courses are designed to both support and challenge you to develop the critical thinking, writing, research, and analytical skills you’ll need at UWT while introducing you to relevant topics in the social sciences, humanities, and sciences.

**COURSE SITE**

Canvas Website: <https://uw.instructure.com>

We will use Canvas as our online course management program. Your instructor will post PowerPoint slides (as a .pdf), recorded lectures, readings, assignment descriptions and drop boxes, helpful links, etc. to the course site. In many instances, you will be asked to **submit assignments for grading through our Canvas** **site**. Click on the help link posted on the Canvas home page if you need help using this course management system.

**STUDENT LEARNING OBJECTIVES**

*ABILITY TO APPLY THE PROCESS OF SCIENCE*

* Understand science is evidence based and grounded in the formal practices of observation, experimentation, and hypothesis testing
* Understand and apply basic principles in experimental design
* Identify problem-specific methodologies
* Gain hands-on experience collecting data to draw conclusions
	+ Observations and procedures– importance of documentation
* Evaluate scientific information and the methods used to generate the information

*ABILITY TO USE QUANTITATIVE REASONING*

* Understand that mathematics underpins science
* Generate and interpret tables and graphs

*ABILITY TO UNDERSTAND THE RELATIONSHIP BETWEEN SCIENCE, MATH AND SOCIETY*

* Understand science/math as a human endeavor in which all people can participate
* Understand how societal issues influence the direction of science and math
* Understand how science and math influence our everyday lives
* Build a sense of civic responsibility

*COMMUNICATION/SELF EXPRESSION*

* Formulate an original thesis-driven argument and sustain it in both written and verbal communication.
* Express ideas clearly in writing and speaking in order to synthesize and evaluate information before presenting it.
* Identify, analyze, and summarize/represent the key elements of a text.

*GLOBAL PERSPECTIVE*

* Think outside of cultural norms and values, including their own perspectives, to critically engage the larger world.
* Recognize the value of obtaining a historical perspective of events as being relevant and useful to guide future decision-making.

**REQUIRED TEXTS**

* There are no required textbooks for this class.
* All required readings are posted on Canvas in the “Modules” section.

**COURSE REQUIREMENTS**

*Lectures – using a flipped design*

We are using a “flipped” model in this class. What this means is that you will watch a recorded lecture before class and work on active learning exercises and In-Class Assignments during class. Active learning exercises are beneficial in that you see how I word questions. Additionally, they encourage you to think critically about concepts covered in the recorded lecture. You will also have the opportunity to get immediate help with assignments, which is not usually an option in classes that follow the more traditional lecture model (i.e., more assignments completed at home). *I recommend that you bring a laptop and earbuds to class in case you need to re-watch part of the recorded lecture (You can borrow a laptop from WG 108).* Having 24/7 access to recorded lectures allows you to re-watch portions of lectures (or entire lectures), makes note taking much easier since you can pause the recording at any time, and allows you to watch lectures at your own pace (i.e., watch 20 minutes now and 15 minutes after work).

**FAQ: “I am watching a lecture at home AND coming to class. Doesn’t that double my work load?”**

No. Recorded lectures will be *much shorter* than our class period. In addition, you will not be asked to do as much work outside of class since you will complete several assignments during class time (In-Class Assignments).

*Concept Checks*

A concept check (CC) is a brief assessment (~ 5 questions) that will be graded and returned to you before the end of that class period. The flipped model only works if you watch the recorded lecture before coming to class on that date. To encourage adequate preparation, we will begin class with a CC related to the content covered in the respective recorded lecture. Do you have questions about the lecture content that you would like answered before taking the CC? If so, you should stop by my office before class or send me an email with your questions at least 12 hours before the CC. Be aware that I will not answer lecture content questions in class before the CC. Students cannot make up a missed CC; however, I will drop the lowest CC score (a zero in this case).

*Assignments*

Read each assignment description (excluding in-class assignments) *well before* the due date and ask your instructor for clarification if needed. Assignments are to be completed individually, unless otherwise stated. Your instructor may not be able to access certain formats on Canvas, thus electronic submissions must be .doc, .docx, or .pdf. Graded assignments cannot be redone for a grade increase. Review the first two pages of this document for due dates/times.

Did you know that you and other UW students can get a **FREE subscription to** **Microsoft Office 365**? Visit <https://www.washington.edu/itconnect/wares/uware/microsoft/microsoft-office-365-proplus/>

*Exams and Quiz*

The exams and quiz will cover lectures, field trips/field work, active learning exercises and in-class assignments. I expect your answers to include as much detail as was provided in those lectures. Each exam/quiz may include multiple choice, matching, fill-in-the-blank and short answer/essay questions. See the first three pages of the syllabus for exam/quiz dates and content. It is expected that you spend at least two hours studying *per one hour of class* in preparation for exams. We have four hours and ten minutes of class each week, which means that you should plan to study at least eight hours and twenty minutes each week.

A makeup exam will only be granted under extenuating circumstances (i.e., illness with doctor’s note). The instructor must receive notification of your absence **before the exam begins**. Use the restroom before class, especially on exam days. If you have to leave during an exam, you will need to turn in your work without the opportunity to finish upon return. The use of electronic devices is strictly prohibited during exams without DSS documentation.

*Authentic Research Experience*

As an introduction to science course, it is critical for you to experience the scientific process rather than just hearing about it. We will conduct an experiment that looks at the quantity of mega-, macro- and microplastics at two different beaches in Tacoma. A detailed description of this assignment can be found on Canvas.

*Public Service Announcement*

You and one or two of your peers will create a Public Service Announcement (PSA) that highlights an environmental concern in a city outside the United States. You get to choose the location and environmental issue! The only major criterion is that the environmental issue poses a direct threat to the health of **aquatic ecosystems** in/near that city. UWT staff will help you learn how to film and edit your video, so no technical knowledge is required (see <http://www.tacoma.uw.edu/information-technology/multimedia-and-video-production>).

A detailed description of the PSA assignment can be found on Canvas.

*Group Work*

Group work is to be equally distributed among the members of your group. Please inform your instructor if a group member is not doing his/her share of the work and you have tried unsuccessfully to resolve the issue. You are still responsible for turning in a complete PSA even if one or more of your group members drops the class or fails to participate. Those who do not contribute will receive a score of zero for that assignment.

*Late Work*

Deadlines, unless otherwise stated, are at the **beginning of class** on the due date. If you turn in the assigned material after class starts, it will be considered late. Any late assignment will receive a **deduction of 10% for each 24-hour period** that it is late. The assignment will not be graded after the fifth day.

*Field Trips/Field Work*

Field trips and field work (our research project) provide an opportunity for you to connect lecture topics with ‘real-world’ issues through experiential learning. Please show up on time and come prepared (warm clothes, NO OPEN TOED SHOES OR SANDALS, rain gear, pencil, paper, know what we are doing, etc.). Those who are not prepared may lose the opportunity to attend the field trip/field work. You will be tested on information presented during these activities, so make sure to take good notes.

*Participation*

Students are expected to be prepared for class, ask/answer questions, contribute to discussions and in-class group work, *et cetera*. *You cannot make up missed in-class exercises*. Refer to the participation rubric posted on Canvas for a more detailed description of how this will be assessed.

*Extra Credit (Optional)*

Participate in at least 4 hours of volunteer-work on a habitat restoration project or other approved activity, have someone take a picture of you at the event, and write a two to three page paper about your experience. In return, you will receive **up to a 2% increase in your overall grade**. Your paper should explain what the project was, who sponsored/organized the project, and what the broad goals were for the project. Your paper should also include a reflection on your experience (What did you take away from this experience? How does your volunteer experience relate to this class?). This paper must be turned in by the last class meeting before the final exam. No exceptions will be made regarding the due date. *See the “Volunteer Opportunities” link on Canvas for some possible events*.

**GRADING Weight**

**Authentic Research Experience:**

 Pre-Research Assignment 1%

 Field Report 6.5%

 Lab Report 6.5%

**Public Service Announcement:**

 Creating a rubric 1%

 Storyboard 5%

 PSA Video 14%

Participation 6%

Exams 40%

Quiz 1 5%

Concept Checks on info in recorded lectures 10%

**In-Class Assignments:**

Graphs and Uncertainty 1%

Ecosystems and Nutrients 1%

Pollution 1%

Stormwater 1%

Habitat Alterations 1%

Grades for the class will be based on the summed percentage for all assignments and assessments combined, according to the following breakdown:

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| --- | --- | --- | --- |
| 4.0 ≥95% | 3.0 85 % | 2.0 75 % | 1.0 65 % |
| 3.9 94 % | 2.9 84 % | 1.9 74 % | 0.9 64 % |
| 3.8 93 % | 2.8 83 % | 1.8 73 % | 0.8 63 % |
| 3.7 92 % | 2.7 82 % | 1.7 72 % | 0.7 60-62 % |
| 3.6 91 % | 2.6 81 % | 1.6 71 % | 0.0 <60 % |
| 3.5 90 % | 2.5 80 % | 1.5 70 % |  |
| 3.4 89% | 2.4 79 % | 1.4 69 % |  |
| 3.3 88 % | 2.3 78 % | 1.3 68 % |  |
| 3.2 87 % | 2.2 77 % | 1.2 67 % |  |
| 3.1 86 % | 2.1 76 % | 1.1 66 % |   |

**CAMPUS RESOURCES AND OTHER INFORMATION**

<https://www.tacoma.uw.edu/teaching-learning-technology/course-campus-information-resources-policies-expectations>

**You will find information on the following:**

* **Student Support (writing, quantitative skills, technology, etc.)**
* **Library information**
* **Email Policy**
* **Academic Honesty**
* **Disability Support Services**
* **Inclement Weather**
* **Technology**