

Oakland University
School of Health Sciences
Environmental Health & Safety Program

Course Syllabus

EHS 4998 – Env Hlth and Saf Undergrad Res (3), WI 2018

Course Professor:

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Class Delivery – Moodle, No Class Session
Office hours – (By Appointment only)

Specific course information

- a. Catalog description: The course gives students the opportunity for firsthand, supervised research. “Research” in this course will be defined as mentored, but self-directed, activity that allows individual students or a group of students to investigate issues of interest and with proper communication of the results through written and oral presentations.

Additional Description: Research projects may comprise; review, design, analysis, scholarship, discovery, innovation or application of learned ideas, contingent on the topic. The student will be guided with the awareness of how the project fits into and adds value to solving the greater problem to which it belongs. The student will elect a faculty mentor to work with from the SHS or other departments. The student may also collaborate with peers or graduate students to perform a research supervised by a research faculty member.

- b. **Prerequisites or co-requisites:** EHS 3250 or per advisor’s permission (individual project may require specific pre-requisites that the research advisor should identify and recommend before the approval to enroll in this class)
- c. **Process for Enrollment:** Prior to enrolling in this class, a student is required to obtain from a faculty advisor to mentor the student on the proposed research topic. In agreement with the faculty advisor, the student must complete the attached application, and duly signed by the student and the faculty advisor/mentor. The student will be required to provide a copy of the signed “completed” application (**Pages 6, 7 & 10 of this document**) to the course coordinator to complete the enrollment process.
- d. **Course Website:** More information on this course will be provided on Moodle for the course section. Information on ethics in research, basic laboratory methods and tips, best practices in recording and keeping data, etc. Please visit the Institutional Research and Assessment (OIRA) at Oakland University web site <http://www.oakland.edu/oira>

Course Objectives:

Students who successfully complete this course will be able to demonstrate knowledge on how to;

- search for relevant literature
- take proper safety precautions in the laboratory, if relevant, to the project
- properly keep an accurate record of research performed
- approach a research problem and develop a methodology
- collect data, analyze data, validate and synthesize data
- make data driven & accurate decisions
- make a proper and ideal presentation of the results, orally and written
- work in a team environment, if relevant to the project
- behave responsibly and ethically in research

Textbooks/Required Materials:

There will be no required text in this course. Students are encouraged to consult with their research advisor for recommendations on the style of notebook to use. Students should also consult in advance with their research advisor on the necessity of acquiring or loaning needed software packages, calculator, laptop computer, etc. in order to perform their project tasks. The Kresge library may be of help for student resources. <http://library.oakland.edu/>

Recommended reading includes the following or comparable works on the same topics:

- Responsible Conduct of Research, National Science Foundation, available online at <http://www.nsf.gov/bfa/dias/policy/rcr.jsp>
- On Being a Scientist: Responsible Conduct in Research, 2nd Edition, National Academy Press, 1995. Available at no cost at http://www.nap.edu/openbook.php?record_id=4917
- Avoiding Plagiarism Guide, George A. Smathers Marston Science Library, available online at <http://www.uflib.ufl.edu/msl/07b/studentplagiarism.html>

Attendance Policy:

Students conducting undergraduate research are expected to exercise a significant amount of autonomy in the project, completing research responsibilities with reasonably little direct oversight from their research advisor. The student is encouraged to commit a minimum of 3 hours per week on their project, as consistent with the total credit hours sought for the research course experience. Besides the minimum expectations outlined in the Assessment section of this syllabus, the faculty advisor may also have additional expectations for participation, including attendance at group meetings, individual meetings, etc.

Assessment:

Faculty advisers are encouraged to particularly consider the following scoring rubric for the student performance:

60%	<p><i>Extents to which student meets expectations:</i></p> <ul style="list-style-type: none"> • Expectations are to be established by the research advisor and student a minimum of a semester prior to the student's enrollment in the research course (through syllabus and/or other communication methods such as Moodle). • The expectations agreed on will be reflected on the Undergraduate Research course Form (URcF). • The following is a minimum set of expectations for every student enrolled in this class for credit: <ol style="list-style-type: none"> i.) perform a background literature search and review, ii.) develop a project plan, iii.) perform experimental work or applied experimental work, iv.) write and present a research report. <p>All four of these minimum expectations as well as additional expectations (e.g., attendance at any Oakland University's research seminars or other seminars, participation in research group meetings, etc. will be established and articulated to the student by the research advisor prior to commencement of the research project.</p>
30%	<p><i>Quality of the final report and oral presentation:</i></p> <p>The faculty advisor will provide clear expectations of the desired format, content, and deadlines of the final report. The faculty advisor/course coordinator will grade the final report.</p>
10%	<p>Attendance, discipline and timeliness in submission. Progress presentations</p>
Final grade	<p>Grades:</p> <p>Course grade will be assigned by the course coordinator in consultation with student's faculty advisor/mentor. The grade will be determined by the quality and quantity of the research completed, and the quality of the final report and presentation. It will be beneficial for the student to discuss grading with the respective mentor early in the semester to determine mentor's expectations. <i>A presentation and research report are both required to receive a passing grade for the course.</i></p> <p>Students will receive a final letter grade. The grading scale is A – F. The cutoffs between A, B, C, D, and F are 90%, 80%, 70%, 60% and 50% respectively.</p>

The faculty advisor may complete a mid-term evaluation of the student in order to provide the student(s) with a measure of performance at mid-semester. This evaluation could be accompanied by recommendations for improvement for the remainder of the term (as necessary).

EHS Grading Scale
Assigned Grade:

Highest	Lowest	Points	Grade	Letter
100%	98%	400-392	4	A
97.99%	96%	391-384	3.9	A
95.99%	94%	383-376	3.8	A
93.99%	92%	375-368	3.7	A-
91.99%	90%	367-360	3.6	A-
89.99%	89%	359-356	3.5	A-
88.99%	88%	355-352	3.4	A-
87.99%	86%	351-344	3.3	B+
85.99%	84%	343-336	3.2	B+
83.99%	82%	335-328	3.1	B+
81.99%	80%	327-320	3	B
79.99%	79%	319-315	2.9	B
78.99%	78%	314-311	2.8	B
77.99%	77%	310-306	2.7	B-
76.99%	76%	305-299	2.6	B-
75.99%	75%	298-294	2.5	B-
74.99%	74%	293-290	2.4	B-
73.99%	73%	289-287	2.3	C+
72.99%	72%	286-284	2.2	C+
71.99%	71%	283-281	2.1	C+
70.99%	70%	280-278	2	C
69.99%	69%	277-275	1.9	C
68.99%	68%	274-271	1.8	C
67.99%	67%	270-266	1.7	C-
66.99%	66%	265-261	1.6	C-
65.99%	65%	260-255	1.5	C-
64.99%	64%	254-251	1.4	C-
63.99%	63%	250-248	1.3	D+
62.99%	62%	247-245	1.2	D+
61.99%	61%	244-242	1.1	D+
60.99%	60%	241-238	1	D
59.99%	0%	237-000	0	F

Academic Conduct Policy:

Plagiarism, falsifying records or reports, and unauthorized collaboration, access, or modifying of computer programs are considered serious breaches of academic conduct. The Oakland University policy on academic conduct will be strictly followed with no exceptions. See the OU catalog under Academic Policies and Procedures in this regard.

Add/Drops:

The University add/drop policy will be explicitly followed. It is the student's responsibility to be aware of the University deadline dates for dropping the course.

Safety Tips:

Do not work alone in the laboratory or on the field. Wear personal protective equipment at all times, even if you are not conducting an experiment. Do not eat or drink in the laboratory on the field when using chemicals or exposed to susceptible conditions. Do not perform a procedure if you are uncertain of what you are doing or how the instrument works. Use common sense always.

Student's Freedom of Expression:

All students are strongly encouraged to participate in class activities. In any classroom situation that includes discussion and critical thinking, there are bound to be many differing viewpoints. **There WILL be zero tolerance for disrespect and academic dishonesty in this course.**

Please visit the website below for more information on Student Rights & Principles of Freedom

<http://www.oakland.edu/?id=24226&sid=482>

Retention of work:

All work submitted becomes property of the Environmental Health and Safety Program and may be retained for display, web posting, teaching, accreditation and research purposes.

Syllabus change:

The course professor reserves the right to modify, alter, delete, add to and otherwise change the content of this syllabus or calendar at any time during the semester by Moodle "NEWS" Notification, email, and/or in class announcement.

Disability Support Services:

Students with disability are encouraged to register early with the DSS office and obtain an accommodation documentation. Once this document is available, present it to the course professor and all approved accommodation from the DSS office will be granted in this course.

Contact DSS office at:

Disability Support Services

North Foundation Hall, Room 103A 318 Meadow Brook Road Rochester, MI
48309-4454

Tel: (248) 370-3266

Fax: (248) 370-4327

Video Phone: (248) 841-8015

RELEASE AND AUTHORIZATION

In consideration of action taken by Oakland University to detect plagiarism, I grant to Oakland University a non-exclusive, royalty free license to make a copy of my work submitted for this class and have it checked for plagiarism. Checking for plagiarism may include submitting the work to a plagiarism detection service. I authorize the plagiarism detection service to include my work in its database to facilitate the subsequent detection of plagiarism by other individuals. I understand that my work will be used only to facilitate the detection of plagiarism and will not be used for any other commercial purposes without my further written consent. I acknowledge that I am not required to provide this Release and Authorization and that if I do not agree to have my work submitted to a plagiarism detection service, I may be given an alternate, equivalent assignment.

I read the above, understood what I read, and agree with the terms of the Release and Authorization.

Student’s Signature:

Student’s Name (please print):

Or you can submit a recent Oakland University [Plagiarism certificate](#).

STATEMENT OF AGREEMENT

I, understand the contents of the syllabus and I am responsible for all assignments, tests, and any other activities stated and understand all due dates for assignments, exams, and any other activities in the syllabus for the course EHS 4998 – EHS Undergraduate Research, Winter 2018.

Sign:

Date:

**STUDENT RESEARCH PARTICIPATION
WAIVER OF LIABILITY AND HOLD
HARMLESS AGREEMENT
FOR**

1. In consideration for receiving permission of Oakland University school system, to participate in the research activity, I _____, hereby RELEASE, WAIVE, DISCHARGE AND COVENANT NOT TO SUE (activity) _____, Oakland University, The Board of Trustees, The State of Michigan, Their officers, agents, servants, or employees (hereinafter referred to as RELEASEES) from any and all liability, claims, demands, actions, and causes of action whatsoever arising out of or related to any loss, damage, or injury, including death, that may be sustained by me, or any of the property belonging to me, WHETHER CAUSED BY THE NEGLIGENCE OF THE RELEASEES, or otherwise, while participating in such activity, or while in, on or upon the premises where the activity is being conducted.

2. I am fully aware of the risks involved and hazards connected to this activity, including but not limited to travel risks. I hereby elect to voluntarily participate in said activity with full knowledge that said activity may be hazardous to me and my property. I VOLUNTARILY ASSUME FULL RESPONSIBILITY FOR ANY RISKS OF LOSS, PROPERTY DAMAGE OR PERSONAL INJURY, INCLUDING DEATH, that may be sustained by me, or any loss or damage to property owned by me, as a result of being engaged in such an activity, WHETHER CAUSED BY THE NEGLIGENCE OF RELEASEES or otherwise.

3. I further hereby AGREE TO INDEMNIFY AND HOLD HARMLESS the RELEASEES from any loss, liability, damage or costs, including court costs and attorney fees, that they may incur due to my participation in said activity, WHETHER CAUSED BY NEGLIGENCE OF RELEASEES or otherwise.

4. I understand that Oakland University does not maintain any medical or health insurance policies for students for their participation in this event or any activity associated with or facilitating that participation. As such, I am aware that I should review my personal insurance portfolio, especially accident/medical coverages.

5. It is my express intent that this Waiver of Liability and Hold Harmless Agreement shall bind the members of my family and spouse, if I am alive, and my heirs, assigns and personal representative, if I am deceased, and shall be deemed as a RELEASE, WAIVER, DISCHARGE AND COVENANT NOT TO SUE the above-named RELEASEES. I hereby further agree that this Waiver of Liability and Hold Harmless agreement shall be construed in accordance with the laws of the State of Michigan.

6. IN SIGNING THIS RELEASE, I ACKNOWLEDGE AND REPRESENT THAT I have read the foregoing Waiver of Liability and Hold Harmless Agreement, understand it and sign voluntarily as my own free act and deed; no oral representations, statements, or inducements, apart from the foregoing written agreement, have been made; I am at least (18) years of age and fully competent; and I execute this Release for full, adequate and complete consideration fully intending to be bound by same.

Signed on this _____ day of _____, 20_____.

PARTICIPANT:

Printed name _____ Signature _____

Campus ID # _____ Activity/Dept. _____

If participant is under the age of 18, Parent/Guardian consents to the minor's participation in the event, consents for Oakland University to seek reasonable and necessary medical treatment for Participant during such event or associated activities, and agrees to be responsible for any cost of such treatment.

Parent/Guardian Signature

Date

OAKLAND UNIVERSITY ENVIRONMENTAL HEALTH AND SAFETY UNDERGRADUATE RESEARCH APPLICATION

Note: All undergraduate students pursuing research with a faculty member at Oakland University is required to enroll in 3 credit hours of Environmental Health and Safety Undergraduate Research (EHS 4998).

Upon the completion of this application form, the student is required to present it to the prospective academic advisor prior to enrolling in EHS 4998.

Student Information (to be completed by the student applicant):

Date: _____ Semester/Year of Enrollment: _____

Name (last, first, middle initial):		Grizzly ID Number:
Local Street Address:		
City, State, Zip Code		Phone Number:
Major:	Current Class:	Expected Graduation Date:
OU Email Address:		

BRIEF DESCRIPTION OF RESEARCH PROJECT:

I have prepared the research description above in consultation with my research advisor. I have read the responsibilities of the student included on this application, and agree to undertake these responsibilities.

Student's Signature: _____

Faculty Advisor Information (to be completed by Faculty Advisor):

Name:	School and Department:
Email Address:	Office number and phone number:

Will the student’s project involve human subject interactions research? Yes No
 (If Yes please refer to student through the IRB process)

Will the student’s research involve with an infectious agent or clinical samples? Yes No
 (If Yes please refer to student through the IRB process)

Will the student’s research involve methods or procedures requiring specific safety training? Yes No
 (If yes, describe specific training that the student will receive prior to performing these activities.)

What are your expectations for the student’s attendance in this project (e.g., estimated hours/week in the laboratory, in seminars, group meetings, etc.)?

I approve of the research description submitted by the student applicant. I have read the responsibilities of the research advisor (see next page) and agree to undertake these responsibilities.

Faculty Advisor’s Signature: _____

RESPONSIBILITIES OF THE STUDENT

1. Develop a mentor-mentee relationship with a faculty advisor/mentor that agrees to guide a research project. Consult with the faculty when completing the application form prior to enrolling in EHS 498.
2. Understand the faculty advisor's expectations of your work (specific research tasks, deliverables, timeline, etc.) on the project.
3. Work actively doing research and participating in other related activities for about 3hours each week consistent with the credit hour enrolled in the course.
4. Learn about the research process, including its guiding principles, common procedures, written fundamentals, and basic phases.
5. Identify a research question, engage in a literature review, and become familiar with both qualitative and quantitative methodologies.
6. Keep clear accurate records of work accomplished and document progress.
7. Following the OU's code of conduct, you are required to understand how to conduct research in a responsible and ethical manner.
8. Adhere to all safety protocols and make enquiries about safety protocols before undertaking any procedure about which you are uncertain.
9. Request for assistance when needed.
10. Keep your faculty research advisor and/or mentor informed of your progress and results.
11. If applicable to your project, learn to collaborate in a team, while also focusing on individual independent research.
12. Make presentations, orally and written in accordance to the guidelines and expectations of your faculty advisor and/or mentor.
13. Present your research findings in an oral presentation.
14. Endeavor to do beyond the minimum expectations in this course. Appropriately prepare a literature review and project plan, carry out the research with quality data collection, analysis and synthesis, and write a final report.
15. Seek out opportunities for oral presentations at a conference, writing and submitting a journal paper of your work, etc.
16. Receive preparation to engage in advanced, independent research at the undergraduate and graduate-level.

Student's Signature: _____

RESPONSIBILITIES OF THE FACULTY ADVISOR

1. Determine the eligibility of the student to conduct the research based on prerequisite and academic strength.
2. Clearly define your expectations of the student's participation on the project (specific tasks, deliverables, timeline, etc.).
3. Provide support and supervision of the student
4. Meet regularly with the student to review the student's progress and to provide guidance in moving forward in her/his project.
5. Arrange for all safety training that is appropriate for the student to ensure safe delivery of the project.
6. Help the student understand the broader context in which the student's research project fits into solving pertinent problems in the society
7. Help the student to understand the basic methods and procedures required to proceed with the research agenda.
8. Encouraged to provide a mid-semester evaluation of the student's performance, accompanied by recommendations for improving performance for the remainder of the semester.
9. Provide feedback and establish deadlines on the student's
 - a. literature review
 - b. project plan
 - c. final report
10. Assign the student's grade based on how student meets expectations, quality of work and attendance (S or U). The course coordinator will give the final grade after grading the report.
11. Encourage the student to go beyond the minimum expectations of preparing a literature review and project plan, performing the research, and writing a final report.