



Department of Public & Environmental Wellness  
Environmental Health & Safety Program  
Course Syllabus

EHS 3250 - Quantitative Methods for Environmental Health & Safety (4), Winter 2018

**Course Professor:**

Richard Olawoyin, Ph.D., CEP, CSP  
Asst. Professor of Environmental Health & Safety Program  
3071 Human Health Building  
Telephone (248) 364-8653; Email – [olawoyin@oakland.edu](mailto:olawoyin@oakland.edu)  
Class Delivery – Asynchronous online (WebEx introduction)  
Office hours – T and TH (**By Appointment only**)

**Catalog Description:**

Overview of frequently applied equations, statistical procedures, and analytical tools used for environmental health & safety assessments.

**General Education Student Learning Outcomes (GESLO):**

At the completion of the course, the student will demonstrate:

- I. knowledge of one or more formal reasoning systems such as computer programming, mathematics, statistics, linguistics or logic, particularly to;
  1. Apply quantitative concepts and principles to perform computations.
  2. Create, use and analyze graphical representations of quantitative relationships.
  3. Demonstrate the ability to correctly perform quantitative reasoning.
  4. Demonstrate a greater understanding of what is expected of an environmental health & safety professional.

*Demonstration is through acceptable performance of 80% or higher in class activities, design homework assignments, course technical paper and on exams.*

- II. application of formal reasoning to read, understand, model and solve problems across a variety of applications; student will be able to;
  1. Communicate the knowledge of quantitative methods to people with diverse backgrounds in individual and group settings, in an ethical and professional manner.
  2. Apply specific quantitative methods and technology tools to appropriately solve problems.
  3. Independently read and analyze quantitative information in diverse representations.
  4. Critically analyze information and concepts to familiarize with improvements in knowledge and technology in the workplace.

*Demonstration is through acceptable performance of 80% or higher in class activities, design homework assignments, course technical paper, presentations and on exams.*

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### Recommended Textbook:

1. Applied Quantitative Methods for OSH, Wachter and Bird, 2011

### Other relevant Text:

2. An Introduction to Statistical Methods and Data Analysis, R. Lyman Ott & Michael Longnecker, 6<sup>th</sup> Edition. 2010. ISBN-13: 978-0-495-01758-5
3. Background Math for the Board of Certified Safety Professionals' Safety Certification Examinations. Glenn Young, CSP, 1<sup>st</sup> Edition, American Society of Safety Engineers

### Course Format:

The format of the course will be online asynchronous learning, with intensive reading, including and application exercises as arranged by the professor. It will include an expectation for various types of class participation in the form of completion random and pre-planned class activities, response to classroom questions, participation in general classroom discussion including student's personal safety related experience, etc. Periodically, relevant course videos will be reviewed and class discussions will be encouraged for additional credits (at professor's discretion). The course will involve online activities, assignments, a term paper/project, exams 1 and 2, and a final exam. The recommended text is not the only material that will be used in this course, please note.

### Grading Structure:

	Percentage	GESLO
Quizzes	15%	I & II
Homework	15%	I & II
Class Participation & Class Presentation	10%	II
Exam I	10%	I
Mid-Term Exam (Exam II)	15%	I
Final Paper	20%	I & II
Final Exam (Exam III)	15%	I & II

### Important Events and Dates

Events	Dates
Classes begin	January 3, 2018
First day 0% tuition refund – full semester courses	January 18, 2018
Exam 1 Due	January 27, 2018
Midterm Examination	February 15 -17, 2018
Winter Recess: Class Suspended	February 17, 2018- 10 p.m.
Winter Recess: Class Resumes	February 26, 2018- 7:30 a.m.
Final Paper Due	April 16, 2018
Final Exams Window	April 19 – April 21, 2018
Grades Due	April 30, 2018
Commencement	April 26-28, see <a href="#">link</a>

### Policies:

1. **ABSOLUTELY No late work will be accepted.**
2. Email communications must contain "EHS 3250 winter 2018" in the subject line.
3. Quizzes, Papers, and Exams may be open-book, open-note, but work alone.
4. Cheating will be punished with the fullest force of the OU policy.
5. If you have taken this course previously, **beware of submitting same answers**, failure to comply will be referred to the academic misconduct committee at OU.

**EHS Grading Scale  
Assigned Grade:**

<b>Highest</b>	<b>Lowest</b>	<b>Points</b>	<b>Grade</b>	<b>Letter</b>
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-
<b>75.99%</b>	<b>75%</b>	<b>298-294</b>	<b>2.5</b>	<b>B-</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
<b>59.99%</b>	<b>0%</b>	<b>237-000</b>	<b>0</b>	<b>F</b>

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## **Class Schedule:**

### [Week 1](#)

Jan 3, 2018

Fundamental Concepts of Quantitative Methods used in EHS

### [Week 2](#)

Jan 7, 2018

Ethical Considerations for Data Collection, Analysis, and Communication

### [Week 3](#)

Jan 14, 2018

Summary Statistics Used in Occupational Safety and Health

### [Week 4](#)

Jan 21, 2018

Jan 25-27, 2018 ([Exam 1](#))

EHS Performance Measures and Indicators

### [Week 5](#)

Jan 28, 2018

Data Distributions and Associated Statistics

### [Week 6](#)

Feb 4, 2018

Occupational Exposure Limits and Time Weighted Averages

### [Week 7](#)

(Feb 15 – Feb 17, 2018)

([Mid-term Exam](#))

### [Week 8](#)

Feb 17 – Feb 26, 2018

Winter Recess

### [Week 9](#)

Feb 26, 2018

Gas Laws, Physics of Occupational Workplaces

### [Week 10](#)

March 4, 2018

Sampling and Analytical Error, Confidence Limits

### [Week 11](#)

March 11, 2018

Percentile Statistics of Normal and Lognormal Distributions

### [Week 12](#)

March 18, 2018

Tolerance Limits and Graphical display of data

### [Week 13](#)

March 25, 2018

Graphical and Tabular Display of Data

### [Week 14](#)

April 1, 2018

Presentation of Data Analysis Outcomes

### [Week 15](#)

April 8, 2018

Design of Workplace Exposure Controls and Forecasting

### [Week 16](#)

April 19, 2016

Final Exam (**Due on April 21, 2018**)

[Fall Commencement](#) (Congratulations)

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### **Methods of Class Communication:**

All questions, concerns or feedbacks should be expressed through the communication tab on Moodle or feel free to send an email to the Course Professor - Dr. Olawoyin ([olawoyin@oakland.edu](mailto:olawoyin@oakland.edu)) or call 248-364-8653

### **Recommended email format:**

*Dr. Olawoyin,*

*My name is XYZ from your EHS 3250 class; I am having problems with the homework assignment. I will appreciate if you can explain this better.*

*Thank you.*

*XYZ*

**Note: Improperly written emails that do not meet professional standards **WILL NOT** be responded to by the Course Professor.**

### **Make-up Policy:**

All students will turn in assignments and take exams on the dates listed in the syllabus. Zero points will be awarded for any late assignments or missed quizzes, and missed exams unless prior arrangements have been made with the Course Professor. Make-up quizzes, assignments or exams will not be allowed, except with a prior approval from the Course Professor.

### **Proctoring of Exams:**

*All examinations in this class will be proctored by ProctorU. **Please make adequate accommodations for the examination proctoring fees.** ProctorU is a live online proctoring service that allows you to take your exam from the comfort of your home. ProctorU is available 24/7, however you will need to schedule your proctoring session at least 72 hours in advance to avoid any on demand scheduling fees. Creating a ProctorU account is very simple. All you will need to do is visit <http://proctoru.com/portal/oakland>. **Pay attention** to the examination window on Moodle before scheduling your exam. If the exam closes at 11:55 PM and if it is a 2 hour exam, your latest schedule time must be before 9:30 PM on that day.*

*ProctorU also provides free technical support to ensure you have the best testing situation possible. That is available at [www.proctoru.com/testitout](http://www.proctoru.com/testitout). On this page you will also be able to test your equipment, learn about what to expect during your proctoring session, and ask any questions you may have about the proctoring process with a ProctorU representative.*

*In order to use ProctorU you will need to have a high-speed internet connection, a webcam (internal or external), a windows or apple Operating System, and a government issued photo id. ProctorU recommends that you visit [proctoru.com/testitout](http://proctoru.com/testitout) prior to your proctoring session to test your equipment. For additional technical services needed before your exam, you can click on the button that says "connect to a live person."*

### **Oakland University Portal Page**

url: <http://proctoru.com/portal/oakland>

### **Test Taker Walk Through Video**

url: <https://vimeo.com/107066503>

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## Code of Conduct for Oakland University Students:

The Code of Conduct describes behaviors that are inconsistent with the essential values of the University community. Intentionally attempting or assisting in these behaviors may be considered as serious as engaging in the behavior. A person commits an attempt when, with intent to commit a specific violation of the Code of Conduct, he/she performs any act that constitutes a substantial step toward the commission of that violation. For more detailed information on Code of Conduct for OU students consult:

<http://www.oakland.edu/?id=24228&sid=482>

## Academic Integrity:

Students must be aware that the consequences of violating standards of academic integrity are extremely serious, and costly and may result in the loss of academic and career opportunities. Students found to have committed violations of academic integrity may face removal from university classes and degree programs, and/or suspension from the university, while remaining fully responsible for payment of current and any past due tuition and fees. Take care to follow approved methods of citing references in all written work. **IT IS NOT ACCEPTABLE FOR STUDENTS IN THIS OR ANY CLASS TO TURN IN WORK PREPARED BY SOMEONE ELSE, OR ANY OTHER WORK THAT THE STUDENT COMPLETED FOR A DIFFERENT CLASS OR THIS SAME CLASS IN PRIOR ATTEMPTS. ALL STUDENTS MUST SUBMIT PAGE 8 OF THIS SYLLABUS (RELEASE AND AUTHORIZATION) BEFORE ANY SUBMISSION WILL BE GRADED.** EHS 3250 adopts OU's academic integrity policy. For further information, please visit the Oakland University's website on academic integrity issues:

## **For General Information:**

<https://www.oakland.edu/?id=28413&sid=522> Go to plagiarism, attendance and grading policies

Student code of conduct

## **For the University's ordinances and Regulations, please check the website below:**

<http://www.oakland.edu/?id=24410&sid=482>

## 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. These differences enhance the learning experience and create an atmosphere where students and Professor alike will be encouraged to think and learn. On sensitive and volatile topics, students may sometimes disagree not only with each other, but also with the Professor. All major questions or concerns should be directed to the Course Professor (during office hours). It is expected of all students to respect the views of others when expressed during online discussions and throughout the duration of the course. **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.

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**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

TTY: (248) 370-3268

[DSS@oakland.edu](mailto:DSS@oakland.edu)

**Standard Problem Solving Approach:**

1. Read the entire problem.
2. Order the information in the problem.
3. List and describe intended outcomes.
4. Use same units, easy to understand language, and consistent presentation styles.
5. List equations that are likely to be involved in solving the problem.
6. State the order of operations and follow from beginning to end.
7. Report results using numbers and words, as appropriate.
8. Clearly state conclusions

**Some of the Major Areas of Study in this Course:**

1. Summary Statistics
2. Injury and fatality data analysis and reporting
3. Risk assessment
4. Physics used in safety and health
5. Time-weighted averages
6. Uncertainty and certainty in data and results
7. Elegant presentation of data
8. Report writing
9. Forecasting techniques
10. Public speaking and presenting

**Keys to success:**

1. Pay attention to the video recordings.
2. Watch the recorded WebEx sessions.
3. Take good notes and organize your notes.
4. Study notes.
5. Be engaged in the class.
6. Use your calculator.
7. Do the practice problems, assignments and note that **all course work ends every Saturday night.**

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**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, as the author, retain all other rights to my work. 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):

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

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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 3250 - Quantitative Methods for Environmental Health & Safety, Winter 2018.

Sign:

Date: