

Course Syllabus R2 (Revised 31Dec2017)
EHS-5600-14487.201810-Applied System Safety Analysis

Course Dates: 03 Jan (Wednesday) to 25 Apr (Wednesday) 2018
Course Instructor: Malcom E. Dunbar
Phone: 313.460.5054
E-mail: medunbar@oakland.edu

Contacting Instructor

The preferred method of contact is email as provided above. All emails will be answered within 72 hours of being received by the instructor. A cell phone number has been provided and is to be used only in an emergency situation such as you cannot attend a scheduled WebEx conference, or you have non-technical personal matters which interfere with your completion of the course materials. A real-time chat can be established by appointment through email.

Instructor Office Hours

This is an online course and thus there are not established office hours. In order to facilitate questions and answers, there will be a series of WebEx meetings established where your instructor will be available. These “office hour” meetings are ***NOT*** mandatory to attend and attendance ***will not*** be taken, but the instructor will be reviewing material relevant to the course offerings which may be helpful. These WebEx office hour meetings will be recorded and can be reviewed at any time after their completion.

Questions About the Course Materials

All questions about assignments, exams, learning outcomes and similar course content information must be asked in the Course Question and Answer Forum within Moodle. This provides an opportunity for all Participants to see the question and response.

Online Course and Technical Support

This is a totally online course and in order to be successful you must have access to the technology in order to connect to the OU Moodle Learning System. It is the Student Participants responsibility to have this technology as well a backup plan in the event your normal hardware and/or internet connection method fails. Such a backup might be the use of a public spot, or a family, friend or employer’s system. OU offers a wide array of support for online learning and it is Student Participants responsibility to seek and gain such support when needed. Links to OU’s *e-Learning Online Orientation and Instructional Support* and *Resources for Online Students* are posted within Moodle. Your Instructor is not your technical support and will not respond to requests for technical support.

Course Catalog Description:

System safety provides disciplined approaches to hazard identification and risk analysis. The analytical techniques in this course can be used to assess risk to employees, facilities, equipment, production, quality, and the environment. System safety analytical techniques will be applied to case studies drawn from professional practice. Student must be admitted to the Master of Science in Safety Management program.

Course Overview:

This course focuses on the study of the procedures for analyzing existing and planned workplace systems for hazards and their potential impacts. Practical exercise for reinforcing methods used for system safety analysis will be used to reinforce the material,

Prerequisite: Program Director permission

Course Requirements:

Textbook: Hazard Analysis Techniques for System Safety, Second Edition (hardcover), Clifton A. Ericson II, 2016. ISBN-978-1-118-94038-9

Course Outline: Introduction to System Safety
 Hazard Analysis Types and Techniques
 Importance of Preliminary Hazard List
 Difference between System and Subsystem Analysis
 Fault and Event Tree Hazard Analysis
 Failure Mode and Effect Analysis
 Functional, Barrier, Operational, MORT and Critical Point Analysis
 Current Events in System Safety
 Class Project

Course Schedule:

Topic	Description	Quizzes & Exams Due before 2355hrs on this date
	Class Starts	03Jan
1	Introduction to system safety, hazard analysis types and techniques	07Jan
2	Understanding system concepts and the meaning of risk	14Jan
	HOLIDAY – Martin Luther King	15Jan
3	Types and techniques for risk assessment, recognizing and managing hazards	21Jan
4	Analysis tools FHA, PHL, and PHA and Course Paper Assignment	28Jan
5	Analysis tools SSFA, SFA, O&SFA	04Feb
6	Fault Tree Analysis and Project 1 Assignment	11Feb
7	MIDTERM EXAM	16Feb
	WINTER BREAK	17Feb – 26Feb
8	Fault Tree Analysis continued and Project 1 Report Out	04Mar
9	Failure Mode Effect Analysis	11Mar
10	Event Tree Analysis and Project 2 Assignment	18Mar
11	Fault Hazard Analysis	25Mar
12	Current events in system safety analysis	01Apr
13	Project 2 Report Out	02Apr - 08Apr
14	Course Paper Due and LAST CLASS DAY OF SEMESTER	17Apr
	FINAL EXAMS	18Apr - 25Apr
	GRADES DUE to ADMINISTRATION	30Apr

Learning Outcomes:

Upon completion of this course, the Student Participant will be able to:

1. Demonstrate an understanding of the methods used in system safety analysis for evaluating existing and future hazards.
2. Exhibit the ability for applying the appropriate system safety analysis methods to the particular system being investigated.
3. Perform system safety analysis in table-top and workplace applicable circumstances for a wide variety of industrial, design, and environmental systems.
4. Search for and make use of additional resources for supporting system safety analysis methods in order to have a deeper understanding of the sources of the hazards and the analysis processed used for their evaluation.
5. Effectively communicate results of system safety analysis to colleagues, managers, and workers.
6. Demonstrate a greater understanding of what is expected of an occupational safety and health professional.

Grading Structure:

100 points total

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| • Homework | 15% |
| • Quizzes | 15% |
| • Contributions (Project, postings, comments, etc.) | 10% |
| • Course Paper | 20% |
| • Mid-Term Exam | 20% |
| • Final Exam | 20% |

Participation Standards:

1. Your Moodle Avatar will be an actual picture of you with large enough resolution that you can be recognized. (No animals, symbols, art work, blank space, etc.)
2. Assigned work should be submitted on time. Due dates and time are those in which Oakland University operates (USA, Michigan, and Eastern Time Zone). Any work submitted after its respective due date will be graded in the final week of the semester with significant loss of points as determined by the Instructor.
3. Email communications must contain EHS 5600 in the subject line.
4. Files uploaded to Moodle are to be PDF and will have EHS5600, Student Participants LAST name, and the assignment in the file name. (Example: EHS5600 Smith Project 1)
5. Forum communications are graded, both for the initial post and for subsequent replies.
6. All Student Participants will show respect and courtesy for each other by keeping their forum communication professional and non-personal in compliance with Oakland Universities Code of Student Conduct.
7. Student Participants are required to log into Moodle at least 4 days per week.
8. Dashboard will be updated weekly or more often. Periodically check your Dashboard site for new assignments, quizzes, and supporting materials.
9. The Instructor will be active in the course and will log into Moodle at least 4 times per week.
10. Questions asked of the Instructor will be answered as soon as practical.
11. Grades will be posted by the Instructor no later than 5 days after the close of the examination period.

Academic Conduct:

A student found to be cheating on an exam will be turned over to the university Academic Conduct Committee for further action. The University's regulations relating to academic misconduct will be fully enforced. Any student suspected of cheating and/or plagiarism will be reported to the Dean of Students and, thereafter, to the Academic Conduct Committee. The full policy on academic misconduct can be found in the General Information section of the Undergraduate Catalog.

<http://www.oakland.edu/studentcodeofconduct/student>

Accommodations for Students with Disabilities:

Students with documented physical or learning disabilities may be entitled to accommodation. Evaluation of disability status and assignment of accommodations is done by the Office of Disability Support Services (DSS) in 121 North Foundation Hall, (248)370-3266

<http://www.oakland.edu/dss>

Services for Veterans: Information on support for students who are military veterans, service members, and dependents of veterans can be found here:

<http://www.oakland.edu/veterans>