EASTERN MEDITERRANEAN UNIVERSITY
Department of Industrial Engineering
IENG355 Ethics in Engineering
COURSE OUTLINE

COURSE CODE	*IENG355*	**COURSE LEVEL**	*Third or Fourth year*	
COURSE TITLE	Ethics in Engineering	**COURSE TYPE**	*Department core/Technical Elective*	
CREDIT VALUE	**(**3, 0) 3	**ECTS VALUE**	6	
PREREQUISITES	Consent of the instructor	**COREQUISITES**	-	
DURATION OF COURSE	One semester	**Semester and year**	**Fall**	**2019-2020**

WEB LINK	www.staff.emu.edu.tr (go to lecturers web site)			
	Name (group)	**e-mail**	**Office**	**Telephone**
Instructors	Mahmut Kunter (Gr. 01)	mahmut.kunter@emu.edu.tr	B211	2806
	Mahmut Kunter (Gr. 02)	mahmut.kunter@emu.edu.tr	B211	2806
Assistant(s)				

CATALOGUE DESCRIPTION

This course is designed to introduce moral rights and responsibilities of engineers in relation to society, employers, colleagues and clients. Analysis of ethical and value conflict in modern engineering practice. Importance of intellectual property rights and conflicting interests. Ethical aspects in engineering design, manufacturing and operations. Cost benefit-risk analysis, safety and occupational hazard considerations.

COURSE OBJECTIVES

1. Fundamental concepts of engineering ethics (Contributing Student Outcomes 2, 4, 5, 6)
2. Engineering code of ethics (NSPE) (Contributing Student Outcomes 2, 4 5, 6, 7)
3. Blame, role and obligation responsibilities (Contributing Student Outcomes 2, 3, 4, 5, 6)
4. Impediments to responsible action (Contributing Student Outcomes 2, 4, 5, 6)
5. Utilitarian thinking and respect for person approaches (Contributing Student Outcomes 2,3, 4, 5, 6)
6. Research involving Humans (Contributing Student Outcomes 2, 3, 4, 5, 6)
7. Convergence, divergence and creative middle way (Contributing Student Outcomes2,3,4 ,5, 6)
8. Forms of dishonesty (Contributing Student Outcomes 2, 4, 5, 6)
9. Confidentiality, intellectual property, conflict of interests (Contributing Student Outcomes 2, 3, 4, 5., 6)
10. Free and informed consent (Contributing Student Outcomes 2, 3, 4, 5, 6)
11. Risk and liability of engineering (Contributing Student Outcomes 2,4, 5, 6 ,7)
12. Normalization of deviance (Contributing Student Outcomes 2, 4,5)
13. Ethics of employer and employee relations (Contributing Student Outcomes 2, 3, 4, 6)
14. Professional manager and professional engineering decisions (Contributing Student Outcomes 2, 3, 4, 5, 6)
15. Whistleblowing and organizational loyalty (Contributing Student Outcomes 2, 3, 4, 5, 6)
16. Professional engineering obligations to the environment (Contributing Student Outcomes 2, 3, 4,5,6,7)
17. Cultural and legal issues in international professionalism (Contributing Student Outcomes 2,3,4,5, 6,)
18. Exploitation, paternalism and human rights (Contributing Student Outcomes 2,3, 4,5, 7)
19. The golden rule (Contributing Student Outcomes 2,3,4,5,)

COURSE LEARNING OUTCOMES

On successful completion of this course, all students will have developed **knowledge** and **understanding** of:

- Fundamental concepts of engineering ethics,
- Engineering code of ethics,
- The use of techniques to analyse cases,
- The importance of international professionalism.

On successful completion of this course, all students will have developed **their skills in**:

- Recognizing and defining ethical problems,
- Using different techniques for case analysis,
- Applying the suitable technique when analysing an ethical situation,
- Making use of the code of ethics during case analysis,
- Making ethically optimal decisions.

On successful completion of this course, all students will have developed their **appreciation** of, and respect for **values and attitudes** to:

- The role of ethics in the engineering profession,
- Responsible professional conduct.

LEARNING TEACHING METHODS

Teaching will be based on active class participation. Students are expected to read the assigned cases and the material covered in the previous lecture before coming to class. The lecturer will summarize and explain the main concepts and techniques used for moral problem solving. Previously assigned cases will be presented and discussed by the students in class.

METHOD OF ASSESSMENT

All Examinations will be closed book/closed notes type, based on lectures, discussions, and assigned readings or other work. To pass these exams students will need to have studied the material well in advance in order to understand the concepts, procedures and techniques. To discourage last minute cramming, the instructor and the assistant will not answer any questions from students on the day of an examination. Exam results will be announced on the notice boards and on the course web page (from www.ie.emu.edu.tr click Mahmut Kunter as lecturer name and IENG355) as soon as the exam papers have been evaluated. To enter a formal examination, a student has to present her/his EMU student identification card to the invigilator.

Quizzes: There will be **three** previously announced quizzes held during the semester; additionally some pop-quizzes can be given therefore students are expected to attend class regularly and be up to date in their reading and other work. There will be **no quiz make-ups**.
Midterm Exam: The midterm exam will be held in the week designated by the university exam coordinator. Midterm exams include all of the material covered up to the date of examination.

Final Exam: The final exam will cover the whole course material including discussions and assignments.

Any objection to the grade or mark should be made latest within a week following its announcement.

Grading Policy*:

Quizzes	20% (10% each)
Midterm Exam 1	35%
Final Exam	45%

*Note that the instructors reserve the right to modify these percentages in case they find it necessary. Letter grade equivalents of numerical performances will be announced by the Registrar's Office after the last day for the submission of letter grades.

• Class participation grade is computed as 0.05****p*** where ***p*** equals the attendance fraction. However if ***p*** is below 0.50, then class participation grade is ZERO. Bonus points obtained during class discussions are added on class participation grade.

ATTENDANCE

Attendance and contributions made by students will be taken every lecture hour. Note that university regulations allow the instructor to give a grade of **NG** to a student whose **absenteeism is more than 25%** of the total lecture hours or who do not complete sufficient work. Students who do not attend the Midterm and/or Final exams without a valid excuse will get **NG**.

TEXTBOOK/S

Students must have the following textbook:
Charles E. Harris, Jr., Michael S. Pritchard, Michael J. Rabins, *"Engineering Ethics: Concepts and Cases"* 3rd edition, 2005 Wadsworth. ISBN: 0-534-53397-3

Topics	
General Introduction, Engineering Ethics: Making a Difference	Chapter 1
Responsibility in Engineering	Chapter 2
Framing the Problem	Chapter 3
Organizing Principles	Chapter 4
Review and Case Analysis	
Honesty, Integrity and Reliability	Chapter 6
Safety, Risk and Liability in Engineering	Chapter 7
Engineers as Employees	Chapter 8
Engineers and the Environment	Chapter 9
International Engineering Professionalism	Chapter 10

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES

(a) an ability to apply knowledge of mathematics, science and engineering	⓪	①	②
(b) an ability to design and conduct experiments, as well as to analyze and interpret data	⓪	①	②
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	⓪	①	②
(d) an ability to function on multi-disciplinary teams	⓪	①	②
(e) an ability to identify, formulate, and solve engineering problems	⓪	①	②
(f) an understanding of professional and ethical responsibility	⓪	①	②
(g) an ability to communicate effectively	⓪	①	②
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	⓪	①	②
(i) a recognition of the need for, and an ability to engage in life-long learning	⓪	①	②
(j) a knowledge of contemporary issues	⓪	①	②
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	⓪	①	②

Level of Satisfaction of the Program Outcomes:
⓪: Not Applicable
①: Low Level of Satisfaction
②: High Level of Satisfaction

CONTRIBUTION OF THE COURSE TO MEETING THE REQUIREMENTS OF CRITERION 5
Mathematics and Basic Sciences : 0%
Engineering Science : 30%
Engineering Design : 30%
General Education : 40 %

ACADEMIC HONESTY - PLAGIARISM
Cheating is copying from others or providing information, written or oral, to others. Plagiarism is copying without acknowledgement from other people's work. According to university by laws cheating and plagiarism are serious offences punishable with disciplinary action ranging from simple failure from the exam or project, to more serious action (letter of official warning suspension from the university for up to one semester). Disciplinary action is written in student records and may appear in student transcripts.

PLEASE KEEP THIS COURSE SYLLABUS FOR FUTURE REFERENCE AS IT CONTAINS IMPORTANT INFORMATION