GAU, Faculty of Engineering

Course Unit Title	Engineering Ethics
Course Unit Code	IE474
Type of Course Unit	Elective, All engineering students
Level of Course Unit	3rd Year BSc
National Credits	3
Number of ECTS Credits Allocated	6 ECTS
Theoretical (hour/week)	3
Practice (hour/week)	-
Laboratory (hour/week)	-
Year of Study	3
Semester when the course unit is delivered	2
Mode of Delivery	Face to Face
Language of Instruction	English
Prerequisities and co-requisities	-
Recommended Optional Programme Components	-

Objectives of the Course:

- Stimulating the moral imagination of students.
- Helping students to recognize ethical issues and think ethically about the possible outcomes of making decisions.
- Eliciting a sense of responsibility.
- Developing analytical skills on how to analyse an ethical situation and use neutral techniques to make an ethically optimal decision.

Learning Outcomes

When this course has been completed the student should be able to		Assesment.
1	Define fundamental concepts of engineering ethics	1
2	Define engineering code of ethics	1, 2
3	Use techniques to analyse cases	1, 2, 3
4	Making use of the code of ethics during case analysis	1, 2, 3
5	Making ethically optimal decisions	1, 2

Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work

Course's Contribution to Program

		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	2
2	Ability to design and conduct experiments as well as to analyze and interpret data	4
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	5
4	Ability to apply systems thinking in problem solving and system design	3
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	4
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	3
7	Ability to express their ideas and findings, in written and oral form	5
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	4
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	4
10	Ability to design systems, processes or products by applying modern methods of work study, ergonomics, production systems and simulation while fulfilling requirements under realistic conditions	3
11	Ability to plan and improve system performance using production planning, quality planning and control, information system design and project planning techniques	3

CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)

Course Contents

Week			Exams
1	Chapter 1	Introduction to Engineering Ethics	
2	Chapter 2	Professionalism and Codes of Ethics	
3	Chapter 3	Understanding Ethical Problems	
4		Case Study	
5	Chapter 4	Ethical Problem Solving Techniques	Class-Quiz 1
6		Case Study	
7			Midterm
8	Chapter 5	Risk, Safety and Accidents	
9		Case Study	
10	Chapter 6	The Rights and Responsibilities of Engineers	
11		Case Study	Class-Quiz 2
12	Chapter 7	Ethical Issues in Engineering Practice	
13	Chapter 8	Doing the Right Thing	
14		Case Study	
15			Final

Recommended Sources

Textbook: Fleddermann, C.B., *Engineering Ethics*, Pearson Prentice Hall, 2008.
Supplementary Material(s): Schinzinger, R., Martin, M.W., *Introduction to Engineering Ethics,* McGraw-Hill, 2000.
Charles E. Harris, Jr., Michael S. Pritchard, Michael J. Rabins, "*Engineering Ethics: Concepts **and** Cases"* 3rd edition, 2005 Wadsworth. ISBN: 0-534-53397-3
GAU elearning site (www.http://elearning.gau.edu.tr).

Assessment

Project (Written)	15%	
Laboratory	-	
Midterm Exam (Written)	30%	
Quiz (Written)	20%	
Final Exam (Written)	35%	
Total	100%	

ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	3	45
Labs and Tutorials	-	-	-
Assignments	1	20	20
Project/Presentation/Report Writing	-	-	-
E-learning Activities	5	5	25
Quizzes	2	10	20
Midterm Examination	1	14	14
Final Examination	1	20	20
Self Study	14	3	42
Total Workload			178
Total Workload/30 (h)			5.9
ECTS Credit of the Course			6