

COURSE CODE: ENE-434
COURSE NAME: Environmental Health and Safety
CREDIT HOURS: Theory = 2 Practical = 0 Total = 3
CONTACT HOURS: Theory = 32 Practical = 0 Total = 32
PREREQUISITE: None
MODE OF TEACHING: Two hours of lecture per week

COURSE DESCRIPTION:

The course aims to provide an opportunity for interdisciplinary learning of environmental health and safety to enable them to develop the knowledge and skills necessary in Environmental Health and Safety practice. The course will cover basic concepts in environmental health and safety, and the public health approach towards the environmental health and safety. It will also include in depth discussion on environmental health issues at the global, regional and local level.

PRACTICAL APPLICATIONS:

With safety, health and environmental issues becoming increasingly important, there is a growing demand for professionals with the right skills. It is extremely important to identify, assess and solve health, safety and environmental problems by applying the principles of good management. By developing knowledge of technical subject areas through an extension into managing environmental health and safety it is fulfilling the need to give due consideration to the sustainable economic development of business and the environment.

RELEVANT PROGRAM LEARNING OUTCOMES (PLOs):

The course is designed so that students will achieve the PLOs:

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|---|----------------------------------|-------------------------------------|----|---------------------------------|-------------------------------------|
| 1 | Engineering Knowledge: | <input type="checkbox"/> | 7 | Environment and Sustainability: | <input checked="" type="checkbox"/> |
| 2 | Problem Analysis: | <input type="checkbox"/> | 8 | Ethics: | <input type="checkbox"/> |
| 3 | Design/Development of Solutions: | <input type="checkbox"/> | 9 | Individual and Teamwork: | <input type="checkbox"/> |
| 4 | Investigation: | <input type="checkbox"/> | 10 | Communication: | <input type="checkbox"/> |
| 5 | Modern Tool Usage: | <input type="checkbox"/> | 11 | Project Management: | <input type="checkbox"/> |
| 6 | The Engineer and Society: | <input checked="" type="checkbox"/> | 12 | Lifelong Learning: | <input type="checkbox"/> |

COURSE LEARNING OUTCOMES:

Upon successful completion of the course, the student will demonstrate competency by being able to:

No.	CLO	Domain	Taxonomy	PLO
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			<u>level</u>	
1	DISCUSS the basic concepts in Environmental Health & Safety (EHS)	Cognitive	2	7
2	APPLY problem solving techniques & strategies, for EHS related problems.	Cognitive	3	6

Complex Engineering Problem

3	Applying knowledge of EHS to carry out a risk assessment for different areas of NUST to identify potential hazards and prepare a risk report with solutions included.	Cognitive	3	6
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TOPICS COVERED WITH THEIR CONTRIBUTION TO PLOs:

Theory:

Week	Topic	Reading Assignment/ Homework	CLO #
1	Introduction to EHS, definitions	Chapter 1	1
2-3	Basic concepts in Environmental Health	Chapter 1	1
	EHS and Public Health Approach	Chapter 1	1
4	Communicable Diseases	Chapter 2 Quiz 1	1
5	Non-communicable Diseases	Chapter 2 Assignment 1	1
6	Water Borne, Food Borne, air borne, and sanitation borne disease	Chapter 2	1
7	Industrial Hygiene and Safety	Chapter 3	1
8	Accident, sources and factors and impact on Industry, Accident Prevention and Elimination Plans	Chapter 3 Quiz 2	1,2
9	Mid Semester Exam		
10	Fire: Sources, Types, Protection equipment and techniques,	Chapter 4 Assignment 2	1,2
11	Safety Equipment at work	Chapter 4	1,2
12	Toxic substances and explosives hazards	Chapter 4 Quiz 3	1
13	Emergency Preparedness	Chapter 5	1,2
14	Hazardous Material and Waste management, Pest Control, Healthy Building	Chapter 6 Assignment 3	1,2
15	ISO 14000, Risk Assessment	Chapter 7	1,2
16	EHS Audit	Chapter 8 Quiz 4	1,2
17	Health and Safety Training	Chapter 9	1,2
18	End Semester Exam		

Practical:

Not Applicable.

TEXT AND MATERIAL:

Textbook (s)

- 1- Mark A. Friend and James P. Kohn, *Fundamentals of Occupational Safety and Health*, 2010, Government Institutes
- 2- Lecture Notes

References Material: (Books available in soft)

3- Howard Frumkin, *Environmental Health: From Global to Local*, 2010, Wiley

4- Sandy Cairncross and Richard G. Feachem, *Environmental Health Engineering in the Tropics: An Introductory Text*, Second Edition, 1993, John Wiley & Sons, ISBN: 0471938858.

ASSESSMENT SYSTEM:

Theoretical/Instruction	100%
Assignments	10%
Quizzes	15%
Mid Semester Exam	25%
End Semester Exam	50%
Practical Work	0%
Lab Attendance	0%
Lab Report	0%
Lab Quiz	0%
Lab Rubrics	0%