



Course Specifications

Course Title:	ENVIRONMENTAL POLLUTION
Course Code:	271 CHET
Program:	Chemical Engineering Technology (CHET)
Department:	Chemical Engineering Technology
College:	College of Applied Industrial Technology (CAIT)
Institution:	Jazan University

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A. Course Identification

1. Credit hours: 04 hr
2. Course type a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/> b. Required <input type="checkbox"/> Elective <input checked="" type="checkbox"/>
3. Level/year at which this course is offered: Six level/3 rd year
4. Pre-requisites for this course (if any): 112 CHET
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	100
2	Blended	--	--
3	E-learning	--	--
4	Distance learning	--	--
5	Other	--	--

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	15
3	Tutorial	--
4	Others (specify)	15
	Total	60

B. Course Objectives and Learning Outcomes

1. Course Description

This course introduces the student to the main aspects of water and air pollution and solid waste. Sources, means of measurement and treatment, and control processes, as well as recycling and disposal procedures are studied. The course includes the study of selected topics of social and global concern related to the subject of environmental pollution. Laboratory activities concentrate mainly on determination of pollutant levels in water and wastewater.

2. Course Main Objective

To introduce the modern ways of environment concerns experiences in order to feed the knowledge to the graduate engineers about the dangerous of environmental pollution problems.

- (1) become familiar with the scope, methodology, and application of modern chemistry and learns to appreciate its ability to explain the physical world.
- (2) Understand that all matter consists of atoms, and that the limitless variety observed around us stems from the ways that these atoms bond with one another.
- (3) Learn problem solving and learning to interpret the data, to employ valid and efficient methods of analysis, and to assess whether or not the results of calculations are reasonable.
- (4) Learn the principles of pollution prevention.
- (5) Generalize the analytical and quantitative skills gained in this course and to apply them in more advanced courses and throughout one's career.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding:	
1.1	Explain the basic concept and the environmental engineering-based problems.	K1
1.2		
2	Skills:	
2.1	Differentiate the main problems related to pollution in water, air and soil that affect the whole environment.	S1
2.2	Explain the series of steps taken to solve the environmental problems.	S2
2.3	Compile a precise decision on choosing the right solution or alternative solution related to the environmental pollution-based problems.	S3
2.4	Prepare the handling of hazardous chemical with safety.	S4
3	Values:	
3.1	An ability to identify the interpersonal skills and managed team work.	V1
3.2	An ability to engage in self-directed continuing professional development	V2

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to engineering polluting problems	8
2	Water pollution: sources, pollutants, effect, control	6
3	Air pollution: sources, pollutants, effect, control	6
4	Noise pollution: sources, pollutants, effect, control	6
5	Review of theoretical content	4
Total		30

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	Explain the basic concept and the environmental engineering-based problems.	Lecture, tutorial, active learning	Quizzes, Assignments, exams
2.0	Skills		
2.1	Differentiate the main problems related to pollution in water, air and soil that affect the whole environment.	Lecture, active learning	Quizzes, Assignments, exams
2.2	Explain the series of steps taken to solve the environmental problems.		
2.3	Compile a precise decision on choosing the right solution or alternative solution related to the environmental pollution-based problems.		
2.4	Prepare the handling of hazardous chemical with safety.		
3.0	Values		
3.1	An ability to identify the interpersonal skills and managed team work.	Oral discussion	Marks is given according to participation in classroom
3.2	An ability to engage in self-directed continuing professional development		
...			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Class activities (Quizzes, Assignments, Labs) every week from week 4 to week 13 Quiz 1	Week 4 till Week 13	20%
2	Oral discussion and participation in classroom	All weeks	10%
3	Midterm	Week 6	10%
4	Quiz 2	Week 11	10%
5	Final Term Exam	As scheduled	50%
6			

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Office hours are specified and instructors can be reached through emails.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<ul style="list-style-type: none"> • Pollution prevention: Fundamentals and Practice by Paul L. Bishop • Pollution A to Z by Richard M. Stapleton
Essential References Materials	<ul style="list-style-type: none"> • List Essential References Materials (Journals, Reports, etc.)
Electronic Materials	<ul style="list-style-type: none"> • Not utilized
Other Learning Materials	<ul style="list-style-type: none"> • Not utilized

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> • Classrooms should be well furnished for 25 students with White board, projector • Laboratory with required equipment and a lab instructor • Appropriate Table and Chairs
Technology Resources (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> • Computer with data show.
Other Resources (Specify, e.g., if specific laboratory equipment is required, list requirements or attach a list)	<ul style="list-style-type: none"> • Not utilized

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Confidential student Course Evaluation Survey	Institution	Online Direct Survey
End of semester CLO	Course Coordinator	Direct Survey

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Chemical Engineering Technology
Reference No.	CAITCHET211101
Date	01/02/2022