

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE OUTLINE TEMPLATE			
Course Title	INDUSTRIAL SAFETY AND RISK MANAGEMENT		
Course Code	CL613	No. of Credits	3
Department	Chemical Engineering	Faculty	Dr. K.N.Sheeba
Pre-requisites Course Code	CHEMICAL TECHNOLOGY AT THE UNDERGRADUATE LEVEL		
Course Coordinator(s) (if, applicable)	NA		
Other Course Teacher(s)/Tutor(s) E-mail	Nil	Telephone No.	0431 2503113
Course Type	<input type="checkbox"/> Core course	<input checked="" type="checkbox"/> Elective course	
COURSE OVERVIEW			
This course is intended to understand the principles of industry safety and its level of implementation in chemical industries.			
COURSE OBJECTIVES			
The course is aimed at giving a deeper understanding at the principles of industrial safety and procedures to be followed in chemical industries			
COURSE OUTCOMES (CO)			
Course Outcomes	Aligned Programme Outcomes (PO)		
On completion of the course, the students will be familiar with 1. Accident prevention and Hazard analysis techniques 2. Identification process safety responsibilities 3. The psychological approach to process safety 4. Legislations pertaining to safety in chemical industries	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,P09,PO10,PO11		

COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	Week	Topic	Mode of Delivery
1.	1 (3 contact hours)	Chemical hazards classification. Radiation hazards and control of exposure to radiation.	Chalk & Talk
2.	2 (3 contact hours)	Fire hazards. Types of fire and prevention methods. Mechanical hazards.	Powerpoint
3.	3 (3 contact hours)	Electrical hazards. Construction hazards Industrial psychology.	Chalk & Talk
	4 (2 contact hour)	Industrial hygiene. Nature and types of work places.	
4.	4 (1 contact hour)	Written Test 1	
5.	5 (3 hours)	Seminar	
6.	6 (3 hours)	Housekeeping. site selection and plant layout. Industrial lighting and ventilation.	Chalk & Talk, PowerPoint
7.	7 (3 hour)	Industrial noise Occupational diseases and prevention methods.	Chalk & Talk
8.	8 (1 hour)	Written Test 2	
9.	9 (3 contact hours)	Stage play on industrial safety case studies	Stage play
10.	10 (3 hour)	Instrumentation and control for safe operation. Pressure, Temperature and Level controllers. Personal protective equipments	Safety videos
	11 (1 hour)		

11.	11 (2 hours) 12 (3 hours)	Safety organization, safety education and training, steps in Risk management, Safety analysis.	Chalk & Talk
12.	13 (1 contact hour)	Compensation Test	
13.	13 (1 hour) 14 (3 contact hours)	Factory Act. ESI Act, Environmental Act. Workmen - compensation Act. Provisions under various acts. Economics of safety. Financial costs to individual, family, organization and society. Budgeting for safety	Chalk & Talk
14.	End of semester	End semester examinations	

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Written Test 1	4	1 hour	20
2	Seminar	5	Group task	5
3	Written Test 2	8	1 hour	20
4	Stage play	9	10 minutes	5
5	Compensation Test	13	1 hour	20
6	End semester exam	End of semester	3 hours	10

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

1. Sam Mannan, Frank P. Lees, "Lees' Loss Prevention in the Process Industries: Hazard Identification, Assessment and Control", 4th Edition, Butterworth-Heinemann, 2005.
2. H.H. Fawcett & W. S. Wood, "Safety and Accident Prevention in Chemical Operation", 2nd Ed, Wiley Interscience, 1982.
3. Guide for Safety in the Chemical laboratory Second edition 1977, Manufacturing Chemists Association. Van Nostrand Reinhold Company, New York.
4. Industrial Safety and Laws, 1993, by Indian School of Labour Education, Madras.
5. Daniel A. Crowl & Joseph F. Louvar, "Chemical Process Safety, Fundamentals with Applications", 2nd Edition, Prentice Hall, Inc. ISBN 0-13-018176-5.

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)

Feedback from students during class committee meetings
Feedback during end semester examinations

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

Academic honesty and plagiarism

Students are expected to follow academic ethics and refrain themselves from activities such as plagiarism, copying assignments, copying in exams etc.
Such activities if found will result in loss of marks for the student.

Attendance

Attendance will be taken by the faculty during the contact hours.
Attendance is a "MUST" for all the contact hours. Every student is required to maintain atleast 75% attendance to appear for the end semester examinations.
Any student who maintains attendance in the range of 50-75%, needs to appear for a compensation assessment test (CPA) and score minimum 30% of the total marks of CPA to appear for the end semester examinations failing which the student has to redo the course.
Students who maintain attendance less than 50% in the subject should redo the course.

Assessment

All the assessments are compulsory.
If a student fails to attend any one assessment due to genuine reasons, he/she will be permitted to appear for CPA.
Grading and passing minimum are as prescribed by the regulations of the institute.

ADDITIONAL COURSE INFORMATION


The Course Coordinator is available for consultation at times that is displayed on the coordinator's office notice board.
Queries may also be emailed to the Course Coordinator directly at sheeba@nitt.edu

FOR SENATE'S CONSIDERATION


Course Faculty


(Dr. K.N. Sheeba)

CC-Chairperson


(Dr. Arunagir)

HOD


(Dr. P. Swashamagan)