

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-620015
DEPARTMENT OF CHEMICAL ENGINEERING

COURSE OUTLINE

Course Title		INTRODUCTION TO CHEMICAL ENGINEERING													
Course Code		CURBS101				No. of Credits			L	T	P	C			
									2	0	0	2			
Department		Chemical Engineering				Faculty			Dr. P.Kalaichelvi						
Course Coordinator(s) (if applicable)		Dr.P.Kalaichelvi													
Other Course Teacher(s)/Tutor(s) E-mail		-				Telephone No.			0431-2503110						
Course Type		Institute Requirement													
COURSE OVERVIEW															
This course is offered in first semester and with objective of understanding general idea about chemical engineering and its principles															
COURSE OBJECTIVES															
To give a comprehensive knowledge on various aspects practiced in chemical engineering To get an idea about the sources of information on chemical engineering related topics.															
COURSE OUTCOMES (CO) Upon completing the course, the student will be able to															
CO1	understand chemical engineering principles														
CO2	acquire the capability to apply basic physics and chemistry principles in chemical engineering														
CO3	integrate the data and formulate the mass and energy balance in chemical engineering problems														
CO4	integrate mathematical knowledge for solving chemical engineering problems														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	3	3	3	3	3	3	3	3	3	1	1	1
CO2	2	2	1	3	3	1	3	3	3	1	1	3	1	1	1
CO3	2	2	1	3	3	3	3	3	3	1	2	3	2	1	2
CO4	2	2	1	3	3	1	3	3	3	1	2	3	2	1	2
S.No.	Week	Topic										Mode of Delivery			
1	Week 1	Overview of chemical Engineering										Chalk & Talk			
2	Week 1	Introduction to Unit Operations										PPT & Chalk and Talk			
3	Week 2	Introduction to Unit Processes										PPT & Chalk and Talk			
4	Week 2	Development of Process Flow Sheeting										PPT & Chalk and Talk			
5	Week 3	Physio-Chemical Calculations-I										Chalk and Talk			
6	Week 3	Physio-Chemical Calculations-II										Chalk and Talk			
7	Week 4	Tutorial Problem solving and discussion										Chalk and Talk			
8	Week 4	Conservation Equations in Chemical Engineering										PPT & Chalk and Talk			
9	Week 5	Principles and Applications of flow of Fluids-I										PPT & Chalk and Talk			
10	Week 5	Principles and Applications of flow of Fluids-II										PPT & Chalk and Talk			

Cycle TEST -I			
11	Week 6	Tutorial Problem solving and discussion	Chalk and Talk
12	Week 6	Principles and Applications of particle Mechanics-I	PPT & Chalk and Talk
13	Week 7	Principles and Applications of particle Mechanics-I	PPT & Chalk and Talk
14	Week 7	Tutorial Problem solving and discussion	Chalk and Talk
15	Week 8	Principles and Applications of Heat transfer-I	PPT & Chalk and Talk
16	Week 8	Principles and Applications of Heat transfer-II	PPT & Chalk and Talk
17	Week 9	Tutorial Problem solving and discussion	Chalk and Talk
18	Week 9	Principles and Applications of Mass transfer-I	PPT & Chalk and Talk
19	Week 10	Principles and Applications of Mass transfer-II	PPT & Chalk and Talk
20	Week 10	Principles and Applications of Mass transfer-III	PPT & Chalk and Talk
21	Week 11	Tutorial Problem solving and discussion	Chalk and Talk
Cycle TEST -II			
22	Week 11	Chemical Reaction Kinetics	PPT & Chalk and Talk
23	Week 12	Concepts of Scale up	PPT & Chalk and Talk
24	Week 12	Modeling and Simulation Techniques in Chemical Processes-I	PPT & Chalk and Talk
25	Week 13	Modeling and Simulation Techniques in Chemical Processes-II	PPT & Chalk and Talk
26	Week 13	Significance of Chemical Engineering in Food, Health, Energy and Environment	PPT & Chalk and Talk
27	Week 14	Case studies: State of the Art Technology in Chemical Industries	PPT & Chalk and Talk
28	Week 14	Tutorial Problem solving and discussion	Chalk and Talk
29	Week 15	Overview of ideas learnt in this course	PPT & Chalk and Talk
Semester Examination			

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	I cycle test	5 th week since commencement	1 hour	25%
2	II cycle test	10 th week since commencement	1 hour	25%
3	Retest (Only for Absentees)	10 th week since commencement	1 hour	25%
4	Assignment	Any time		10%
5	Series of Home work submissions	As per the scheduled time during the class		5%
6	Class Attendance			5%
5	End semester examination	16 th week since commencement	2 hour	30%

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

1. S. K. Ghosal, S. K., Sanyal and S. Datta, Introduction to Chemical Engineering, TMH Book Company, 1998
2. Anderson L. B. and L. A. Wenzel, Introduction to Chemical Engineering, McGraw Hill Publications, 1998.

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

- 1) Feedback is planned to be collected twice; once in the mid semester and one at the end of course as soon as classes are over.
- 2) The academic performance of the students will be assessed based on 2 cycle tests (each 25 marks), one final examination (30 marks), assignment (10 marks), Homework submissions (5 marks) and Attendance (5 marks).
- 3) Suitable mapping of Cos with Pos will be made and attainment will be calculated.
- 4) Reassessment after the declaration of end sem result will be conducted for those candidates who failed in the course or those who were absent in end sem assessment test on medical ground

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

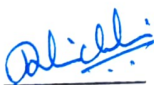
- 1) It is expected that the students will not indulge in any form of malpractice in Examinations. Attendance of 75% and above is expected. The 25% allowance is given for absence due to illness/institute related activities (sports/competitions/seminars etc.)

ADDITIONAL COURSE INFORMATION

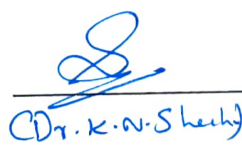
eg.: The Course Coordinator is available for consultation at times that are displayed on the coordinator's office notice board. Queries may also be emailed to the Course Coordinator directly at kalai@nitt.edu

FOR SENATE'S CONSIDERATION

Course Faculty



CC-Chairperson


Dr. K. N. S. Shekh

HOD

