

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

COURSE OUTLINE						
Course Title	INTRODUCTION TO CHEMICAL ENGINEERING					
Course Code	CLIRBS101	No. of Credits	L	T	P	C
			2	0	0	2
Department	Chemical Engineering	Faculty	Dr.P.Sivashanmugam			
Course Coordinator(s) (if, applicable)	Dr.P.Sivashanmugam					
Other Course Teacher(s)/Tutor(s) E-mail	-	Telephone No.	0431-2503106			
Course Type	Institute Requirement					
COURSE OVERVIEW						
<p>This course is offered in first semester and with objective of understanding general idea about chemical engineering and its principles</p>						
COURSE OBJECTIVES						
<p>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.</p>						
COURSE OUTCOMES (CO)						
Course Outcomes			Aligned Programme Outcomes (PO)			
COURSE OUTCOME						
<p>Upon completing the course, the student will be able to</p> <p>the capability to understand chemical engineering principles</p> <p>acquire a the capability to apply basic physics and chemistry principles in chemical engineering</p> <p>the proficiency to integrate the data and formulate the mass and energy balance in chemical engineering problems.</p> <p>the capability to use mathematical knowledge for solving chemical engineering problems with and without chemical reactions</p>			<p>PO1 , PO2 ,PO3, PO5,PO8, PO9,PO11 and PO10</p> <p>PO1, PO2, PO4, PO5, PO8, PO9,PO11 and PO12</p> <p>PO1, PO2,PO3, PO5, PO8, PO9, PO11 and PO12</p> <p>PO1, PO2,PO3, PO5, PO8, PO9, PO11 and PO12</p>			
COURSE TEACHING AND LEARNING ACTIVITIES (* : It is likely that some of the classes will be lost due to holidays and hence the semester will go upto 14 weeks)						
S.No.	Week	Topic			Mode of Delivery	

1	Week 1	Overview of chemical Engineering	PPT, Chalk and 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	PPT, Chalk and talk
6	Week 3	Physio-Chemical Calculations-II	PPT, Chalk and talk
7	Week 4	Tutorial Problem solving and discussion	PPT, 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	PPT, 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	PPT, 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	PPT, 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	PPT, 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	Few Case studies: State of the Art Technology in Chemical Industries	PPT, Chalk and talk
28	Week 14	Tutorial Problem solving and discussion	PPT, Chalk and talk
29	Week 12	Overview of ideas learnt in this course	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%
5	End semester examination	16 th week since commencement	1 hour	50%

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) Feed back 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 20 marks), one final examination (50 marks) and seminars (10 marks).
- 3) Suitable mapping of Cos with Pos will be made and attainment will be calculated.

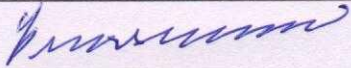
COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

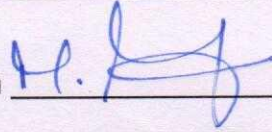
- 1) It is expected that the students will not indulge in any form of malpractice in Examinations. Seminar presentation will focus on the emerging trends.
- 2) Attendance of 75% and above is expected. The 25% allowance is given for absence due to illness/institute related activities(sports/competitions/seminars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

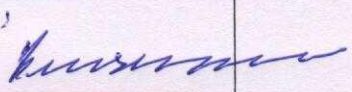
ADDITIONAL COURSE INFORMATION

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 meera@nitt.edu

FOR SENATE'S CONSIDERATION


Course Faculty _____

CC-Chairperson  _____

HOD  _____