

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. M. Arivazhagan			
Course Coordinator(s) (if, applicable)	Dr. M. Arivazhagan					
Other Course Teacher(s)/Tutor(s) E-mail	-	Telephone No.	0431-2503111			
Course Type	General Institute Requirement: Branch Specific Course					
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)						
Course Outcomes			Aligned Programme Outcomes (PO)			
COURSE OUTCOME						
Upon completing the course, the student will be able to the capability to understand chemical engineering principles acquire the capability to apply basic physics and chemistry principles in chemical engineering			PO1, PO2, PO3, PO5, PO8, PO9, PO11 and PO10			
the proficiency to integrate the data and formulate the mass and energy balance in chemical engineering problems.			PO1, PO2, PO4, PO5, PO8, PO9, PO11 and PO12			
the capability to use mathematical knowledge for solving chemical engineering problems with and without chemical reactions			PO1, PO2, PO3, PO5, PO8, PO9, PO11 and PO12			
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 up to 14 weeks)						
Sl. No.	Week	Topic	Mode of Delivery			
1	Week 1	Overview of chemical Engineering	CHALK & TALK / PPT			
2	Week 1	Introduction to Unit Operations	CHALK & TALK / PPT			
3	Week 2	Introduction to Unit Processes	CHALK & TALK / PPT			
4	Week 2	Development of Process Flow Sheeting	CHALK & TALK / PPT			
5	Week 3	Physio-Chemical Calculations-I	CHALK & TALK / PPT			
6	Week 3	Physio-Chemical Calculations-II	CHALK & TALK / PPT			
7	Week 4	Tutorial Problem solving and discussion	CHALK & TALK / PPT			
8	Week 4	Conservation Equations in Chemical Engineering	CHALK & TALK / PPT			

9	Week 5	Principles and Applications of flow of Fluids-I	CHALK & TALK / PPT
10	Week 5	Principles and Applications of flow of Fluids-II	CHALK & TALK / PPT
		Assessment -I	
11	Week 6	Tutorial Problem solving and discussion	CHALK & TALK / PPT
12	Week 6	Principles and Applications of particle Mechanics-I	CHALK & TALK / PPT
13	Week 7	Principles and Applications of particle Mechanics-I	CHALK & TALK / PPT
14	Week 7	Tutorial Problem solving and discussion	CHALK & TALK / PPT
15	Week 8	Principles and Applications of Heat transfer-I	CHALK & TALK / PPT
16	Week 8	Principles and Applications of Heat transfer-II	CHALK & TALK / PPT
17	Week 9	Tutorial Problem solving and discussion	CHALK & TALK / PPT
18	Week 9	Principles and Applications of Mass transfer-I	CHALK & TALK / PPT
19	Week 10	Principles and Applications of Mass transfer-II	CHALK & TALK / PPT
20	Week 10	Principles and Applications of Mass transfer-III	CHALK & TALK / PPT
21	Week 11	Tutorial Problem solving and discussion	CHALK & TALK / PPT
		Assessment -II	
22	Week 11	Chemical Reaction Kinetics	CHALK & TALK / PPT
23	Week 12	Concepts of Scale up	CHALK & TALK / PPT
24	Week 12	Modeling and Simulation Techniques in Chemical Processes-I	CHALK & TALK / PPT
25	Week 13	Modeling and Simulation Techniques in Chemical Processes-II	CHALK & TALK / PPT
26	Week 13	Significance of Chemical Engineering in Food, Health, Energy and Environment	CHALK & TALK / PPT
27	Week 14	Few Case studies: State of the Art Technology in Chemical Industries	CHALK & TALK / PPT
28	Week 14	Tutorial Problem solving and discussion	CHALK & TALK / PPT
29	Week 15	Overview of ideas learnt in this course	CHALK & TALK / PPT
30	Week 16	End Semester Examination	

COURSE ASSESSMENT METHODS

Sl. No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment I	5 th week since commencement	60 minutes	20%
2	Assessment II	10 ^h week since commencement	60 minutes	20%
3	CPA (Only for Absentees)	14 ^h week since commencement	60 minutes	20%
4	Assignment	As per the schedule given by the faculty	-	10%
5	End semester examination	16 th week since commencement	180minutes	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.
3. W. L. McCabe, J. C. Smith and P. Harriot, "Unit Operations of Chemical Engineering," 7th Edition, McGraw Hill, New York, 2017.

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

- 1) Feedback from students during Class Committee meetings.
- 2) Anonymous feedback through questionnaire

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

1. All the students are expected to attend all the classes and tests without fail.
2. 75% attendance is mandatory.
3. Those who indulge in malpractice such as copying, plagiarism etc. shall have to redo the course.
4. Compensation assessment will be conducted for the students who failed to attend the regular assessment (except the final assessment) process during the course due to medical or institute related activities with prior approval.
5. The CPA shall be conducted before the end semester exam and will be covering the entire syllabus.
6. The minimum marks for passing this course and grading pattern will adhere to the regulations of the Institute.
7. Any misbehaviour, indiscipline in the classroom/ exam hall will be dealt with seriously.

ADDITIONAL COURSE INFORMATION

- Queries may be emailed to the Course Coordinator directly at ariva@nitt.edu
- The Course Coordinator can be contacted in person for clarifications on a mutually convenient time
- The faculty is available in the room, Golden Jubilee building, Chemical Engineering department.

FOR SENATE'S CONSIDERATION

Course Faculty M. G. CC- Chairperson [Signature] HOD M. G.

[Signature]
DPM. Aravamudan