

COURSE STRUCTURE

For

CHEMICAL ENGINEERING

(Applicable for batches admitted from 2016-2017)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA - 533 003, Andhra Pradesh, India

I Year - I Semester

S. No.	Subjects	L	T	P	Credits
1-HS	English – I	4	--	--	3
2-BS	Mathematics - I (Differential Equations)	4	--	--	3
3-ES	Engineering Chemistry	4	--	--	3
4- ES	Engineering Mechanics	4	--	--	3
5-BS	Computer Programming	4	--	--	3
6-ES	Environmental Studies	4	--	--	3
7-HS	Engineering/Applied Chemistry Laboratory	--	--	3	2
8-BS	English - Communication Skills Lab - I	--	--	3	2
9-ES	C Programming Lab	--	--	3	2
Total Credits					24

I Year - II SEMESTER

S. No.	Subjects	L	T	P	Credits
1-HS	English – II	4	--	--	3
2-BS	Mathematics – II (Mathematical Methods)	4	--	--	3
3-BS	Mathematics – III (Linear Algebra & Vector Calculus)	4	--	--	3
4- BS	Engineering Physics	4	--	--	3
5-HS	Elements of Mechanical Engineering	4	--	--	3
6-ES	Engineering Drawing	4	--	--	3
7-BS	English - Communication Skills Lab - II	--	--	3	2
8-HS	Engineering /Applied Physics Lab	--	--	3	2
9-ES	Engineering /Applied Physics – Virtual Labs - Assignments	--	--	2	--
10	Engg.Workshop & IT Workshop	--	--	3	2
Total Credits					24

II Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Complex Variables	4	--	--	3
2	Basic Electrical & Electronics Engineering	4	--	--	3
3	Organic Chemistry	4	--	--	3
4	Physical Chemistry	4	--	--	3
5	Chemical Process Calculations	4	--	--	3
6	Managerial Economics & Financial Analysis	4	--	--	3
7	Basic Engineering (Mech. + Elec.) Lab	--	--	3	2
8	Physical & Organic Chemistry Lab	--	--	3	2
MC	Introduction to Bioscience	2	--	--	-
Total Credits					22

II Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Probability & Statistics	4	--	--	3
2	Momentum Transfer	4	--	--	3
3	Mechanical Unit Operations	4	--	--	3
4	Chemical engineering Thermodynamics-I	4	--	--	3
5	Inorganic Chemical Technology	4	--	--	3
6	Materials Science & Engineering	4	--	--	3
7	Momentum Transfer Lab	--	--	3	2
8	Mechanical Unit Operations Lab	--	--	3	2
MC	Professional Ethics & Human Values	--	3	--	--
Total Credits					22

III Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Process Heat Transfer	4	--	--	3
2	Organic Chemical Technology	4	--	--	3
3	Chemical Engineering Thermodynamics-II	4	--	--	3
4	Process Instrumentation	4	--	--	3
5	Mass Transfer Operations – I	4	--	--	3
6	Process Heat Transfer Lab	--	--	3	2
7	Mathematical methods Lab	--	--	3	2
8	Mass Transfer Operations Lab - I	--	--	3	2
9	Industrial Visits	--	--	--	--
MC	Mini Project	--	--	--	--
Total Credits					21

III Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Management Science	4	--	--	3
2	Mass Transfer Operations- II	4	--	--	3
3	Chemical Reaction Engineering –I	4	--	--	3
4	Process Dynamics & Control	4	--	--	3
5	OPEN ELECTIVE i. Electronic Instrumentation ii. Big Data management iii. Alternative Energy Sources iv. Waste Water Management v. Design & Analysis of Experiments vi. Computational Fluid Dynamics	4	--	--	3
6	Mass Transfer Operations Lab – II	--	--	3	2
7	Instrumentation, Process Dynamics & Control Lab	--	--	3	2
8	Chemical Reaction Engineering Lab	--	--	3	2
9	Summer Internship	--	--	--	--
MC	Mini Project	--	--	--	--
Total Credits					21

IV Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Transport Phenomena	4	--	--	3
2	Plant Design for Chemical Engineers	4	--	--	3
3	Chemical Reaction engineering- II	4	--	--	3
4	Process Modelling & Simulation	4	--	--	3
5	Elective I	4	--	--	3
	i. Computer Methods in Chemical Engineering				
	ii. Fluidization engineering				
	iii. Process Intensification				
iv. Industrial Biotechnology					
6	Elective II	4	--	--	3
	i. Optimization Techniques				
	ii. Petroleum Refinery Engineering				
	iii. Process Integration				
iv. Polymer Technology					
7	IPR & Patents	--	2		--
8	Process Equipment Design & Drawing Lab	--	--	2	2
9	Simulation Lab	--	--	2	2
Total Credits					22

IV Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Industrial Safety & Hazard Management	4	--	--	3
2	Process Engineering Economics	4	--	--	3
3	Biochemical Engineering	4	--	--	3
4	Elective III	4	--	--	3
	i. Optimization of Chemical Processes				
	ii. Multicomponent Distillation				
	iii. Prevention of Pollution through Process Integration				
iv. Nanotechnology					
5	Seminar (Presentation of SIP Report)	--	3	--	2
6	Project	--	--	--	10
Total Credits					24

Total course credits = 48+44 + 42 + 46 = 180