

B.E. (Chemical Engineering)							Group A	
Semester-I (UG)								
S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	AMT-411	Engineering Mathematics		3	1	0	4	4
2	PHT-411	Applied Physics		3	1	0	4	4
3	HUT-411	English Communication & Soft Skills		3	0	0	3	3
4	EET-411	Elements of Electrical Engineering		3	1	0	4	4
5	MET-411	Elements of Mechanical Engineering		3	1	0	4	4
6	PHP-411	Applied Physics		0	0	2	2	1
7	HUP-411	English Communication & Soft Skills		0	0	2	2	1
8	EEP-411	Elements of Electrical Engineering		0	0	2	2	1
9	MEP-411	Elements of Mechanical Engineering		0	0	2	2	1
			15	4	8	27	23	

Semester-II (UG)								
S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	CYT-421	Applied Chemistry		3	1	0	4	4
2	HUT-422	Engineering Economics and Entrepreneurship		3	1	0	4	4
3	CST-421	Elements of Computer Programming		2	0	0	2	2
4	ECT-421	Elements of Electronics Engineering		3	1	0	4	4
5	MET-422	Workshop Technology & Practice-I		2	0	0	2	2
6	CYP-421	Applied Chemistry		0	0	2	2	1
7	CSP-421	Elements of Computer Programming		0	0	2	2	1
8	ECP-421	Elements of Electronics Engineering		0	0	2	2	1
9	MEP-423	Engineering Drawing*		0	0	4	4	2
10	WSP-422	Workshop Technology & Practice-I		0	0	4	4	2
			13	3	14	30	23	
*ME-452 is a practical subject only with LTP : 1-0-3								

PRACTICAL TRAINING

TPS0301** Two Weeks Practical Training during Summer vacations						80	2(S/IS)
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Semester-III (UG)

S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	AMT-511	Higher Engg Mathematics		4	0	0	4	4
2	CHT-511	Overview of Chemical Engineering		2	0	0	2	2
3	CHT-512	Chemical Process Calculations		3	1	0	4	4
4	CHT-513	Fluid Flow		3	1	0	4	4
4	CHT-514	Chemical Engineering Thermodynamics		3	1	0	4	4
6	CHT-515	Chemical Process Industries		3	0	0	3	3
7	CHP-513	Fluid Flow lab		0	0	3	3	1
8	CHP-514	Chemical Engineering Thermodynamics lab		0	0	3	3	1
9	CHP-515	Chemical Technology Lab		0	0	3	3	1
Total			18	3	9	30	24	

Semester-IV (UG)

S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	CHT-521	Mass Transfer-I		3	1	0	4	4
2	CHT-522	Heat Transfer		3	1	0	4	4
3	CHT-523	Chemical Reaction Engineering-I		3	1	0	4	4
4	CHT-524	Mechanical Operations		3	1	0	4	4
5	CHT-525	Chemical Process Instrumentation		3	0	0	3	3

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6	CHP-521	Mass Transfer lab-I	0	0	3	3	1
7	CHP-522	Heat Transfer lab	0	0	3	3	1
8	CHP-524	Mechanical Operations lab	0	0	3	3	1
9	CHP-525	Chemical Process Instrumentation lab	0	0	2	2	1
Total			15	4	14	30	24

Semester-V (UG)

S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	AMT-611	Numerical Analysis		3	1	0	4	4
2	CHT-611	Chemical Reaction Engineering-II		3	1	0	4	4
3	CHT-612	Mass transfer-II		3	1	0	4	4
4	CHT-613	Petroleum Refining and Petrochemicals		3	0	0	3	3
5	CHT-614	Elective-I		3	0	0	3	3
6	AMP-611	Numerical Analysis lab		0	0	2	2	1
7	CHP-611	Chemical Reaction Engineering-lab		0	0	3	3	1
8	CHP-612	Mass transfer -II lab		0	0	3	3	1
9	CHP-615	Seminar		0	0	2	2	1
Total			15	3	10	28	22	

Semester-VI (UG)

S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	PHT-621	Physics of Matetials		3	1	0	4	4
2	**O-62*	Open Elective		3	0	0	3	3
3	CHT-621	Process equipment design and drawing		3	1	0	4	4
4	CHT-622	Process dyanamics and control		3	1	0	4	4
5	CHT-623	Transport Phenomenon		3	1	0	4	4
6	CHT-624	Energy Technology		3	0	0	3	3
7	PHP-611	Physics of Matetials lab		0	0	2	2	1
8	CHP-621	Process equipment design and drawing lab		0	0	2	2	1
9	CHP-622	Process Dynamics and control lab		0	0	2	2	1
10	CHP-624	Energy Technology lab		0	0	3	3	1
Total			18	4	9	31	26	

INDUSTRIAL TRAINING

TPS-701**	Industrial Training during Summer vacations (6 Weeks)					200	8(S/US)
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Semester-VII (UG)

S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	HUT-71i	Principles of Management		3	1	0	4	4
2	**O-71*	Open Elective		3	0	0	3	3
3	CHM-711	Environmental Studies		3	0	0	3	3
4	CHT-712	Plant Design and Economics		3	1	0	4	4
5	CHT-713	Modeling and Simulation		3	0	0	3	3
6	CHT-714	Elective -II		3	0	0	3	3
7	CHP-711	Environmental Testing and Analysis lab		0	0	2	2	1
8	CHP-713	Modeling and Simulation lab		0	0	2	2	1
9	CHP-715	CAD for Chemical Engineers		0	0	3	3	1
10	CHP-720	Minor Project		0	0	4	4	2
Total			18	2	4	31	25	

Semester-VIII (UG)

S.No	Sub Code	Subject Name	L	T	P	Hrs.	Credits	
1	HUM-721	Human Values and Professional Ethics		2	0	0	2	2
2	**O-72*	Open Elective		3	0	0	3	3

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Revised Teaching Scheme according to decision taken in the HOD's meeting with Dean (A) on 17.10.2016

3	CHT-721	Industrial Pollution Control	3	0	0	3	3
4	CHT-722	Chemical Plant Utilities and Safety	3	0	0	3	3
5	CHT-723	Elective III	3	0	0	3	3
6	CHP-722	Chemical Plant Utilities and Safety lab	0	0	3	3	1
7	CHP-723	Software applications in Chemical Engineering	0	0	3	3	1
8	CHP-730	Project	0	0	8	8	4
Total			14	0	14	28	20
Grand Total			126	23	86	235	196
			Theory	Tutorial	Practical	Hours	Credits
Total Basic Sciences			19	5	8	32	28
Total Humanities			9	2	2	13	12
Total Other Engineering			13	3	16	32	24
Total Open Electives			9	0	0	9	9
Total Core Subject			71	13	48	132	102
Total Mandatory courses			5	0	0	5	5
Projects			0	0	12	12	6
Summer training and Industrial Training							10
Total			126	23	86	235	196

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LIST OF DEPARTMENT ELECTIVES

- CHT-614A Agro Residue Utilization
- CHT-614B Paint Technology
- CHT-614C Pulping and Bleaching Technology
- CHT-614D Polymer Science and Engineering
- CHT-714A Novel Separation Techniques
- CHT-714B Electrochemical Technology
- CHT-714C Stock Preparation & Paper Making
- CHT-714D Advanced Polymer Material
- CHT-723A Energy Audit and Management
- CHT-724B Application of Nano-technology in Chemical Engineering
- CHT-725C Chemical Recovery Processes in Pulp & Paper Industry
- CHT-726D Rubber Technology

LIST OF OPEN ELECTIVES

- CHO-621 Non-Conventional Energy Sources
- CHO-622 Combustion Technology
- CHO-714 Environmental Impact Assessment
- CHO-721 Hazardous Waste Management
- CHO-722 Solid Waste Management

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BEPEO}

1. To prepare students for successful professional career in Indian and multinational Chemical process and allied industries, design and consultancy organizations and relevant govt. agencies.
2. Capacity build-up in students for problem analysis, interpretation and solution related to application of Chemical engineering for sustainable development.
3. To prepare students who can provide leadership and companionship in multidisciplinary teams.
4. To inculcate in students qualities that enable them to apply their domain knowledge as enlightened citizens for the upliftment of society.

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Rasene



BEPEO}

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2. Capacity build-up in students for problem analysis, interpretation and solution related to application of Chemical engineering for sustainable development.
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4. To inculcate in students qualities that enable them to apply their domain knowledge as enlightened citizens for the upliftment of society.

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Karshena



Program Outcomes(POs):

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and Leader in a team, to manage projects and in multidisciplinary environments.

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12. Life-long learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program specific outcomes (PSOs):

13. Natural resource utilization : The candidate should have sufficient technical knowledge to cater to the need of existing and upcoming chemical industry and efficient utilization of natural resources.

14. Cleaner production: Applying Chemical Engineering fundamentals for green and energy efficient processes.

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