## **ACADEMIC CURRICULA**

### UNDERGRADUATE DEGREE PROGRAMMES

**Bachelor of Technology** 

(B.Tech. - Four Years)

(Choice Based Flexible Credit System)

Regulations 2018

Volume - 1

(Revised in March 2019)



# SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)

Kattankulathur, Kancheepuram District 603203, Tamil Nadu, India

#### SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

## 7. B.Tech. in Chemical Engineering

#### 7. (a) Mission of the Department

	To provide training that help students to develop an ability to meet the expectations of Industry, Academia and Research in the fields of Chemical and allied process industries.
Mission Stmt - 2	To develop skills of the students including leadership, project management, creative thinking and trouble shooting.
Mission Stmt - 3	To implant ethical, environment and social responsibility among the students.
	To play a role in improving the life of living beings by addressing their issues in rural, urban and industrial sectors using chemical engineering principles.
Mission Stmt - 5	To actively participate and contribute in upcoming technological advancements globally and locally, and also to solve the problems arising against sustainable development.

#### 7. (b) Program Educational Objectives (PEO)

PEO - 1	To prepare and facilitate graduating students for job opportunities in Research and development, production and process development in oil
1 20 1	and gas, petrochemical, plastics and rubber, pharmaceutical, Biotechnology, food and environmental industries.
PEO - 2	To empower undergraduate students with skill-sets and tools necessary for pursuing higher education in Chemical engineering and allied
PEU-Z	areas of technology.
PEO - 3	Empower students to become entrepreneurs for small-scale chemical and allied industries.
PEO - 4	To enable students to strive towards Sustainable development.

#### 7. (c) Mission of the Department to Program Educational Objectives (PEO) Mapping

	Mission Stmt 1	Mission Stmt 2	Mission Stmt 3	Mission Stmt 4	Mission Stmt 5
PEO - 1	Н	Н	Н	Н	Н
PEO - 2	Н	Н	Н	Н	M
PEO - 3	Н	M	M	M	M
PEO - 4	M	M	M	M	M

H – High Correlation, M – Medium Correlation, L – Low Correlation

#### 7. (d) Mapping Program Educational Objectives (PEO) to Program Learning Outcomes (PLO)

	1					Progra	am Lear	ning Ou	tcomes	(PLO)					
			343	À.	Gra	aduate At	tributes (	GA)	*	77			Prog Out	gram Spe comes (P	ecific (SO)
	Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modem Tool Usage	Society & Culture	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning	PSO - 1	PSO - 2	PSO - 3
PEO - 1	Н	Н	Н	Н	Н	М	Н	M	М	М	Н	M	Н	Н	Н
PEO - 2	Н	Н	Н	Н	Н	М	Н	М	М	М	Н	М	Н	Н	Н
PEO - 3	Н	Н	Н	Н	Н	М	Н	Н	Н	Н	Н	Н	Н	Н	Н
PEO - 4	М	М	М	М	М	М	Н	Н	H	Н	Н	H	Н	Н	Н

H - High Correlation, M - Medium Correlation, L - Low Correlation, PSO - Program Specific Outcomes (PSO)

#### PSO – Program Specific Outcomes (PSO)

PSO - 1	Ability to understand and differentiate processes
PSO - 2	Apply the fundamentals to perform equipment design and process design
PSO - 3	Evaluate the process plants from Energy, Environment and Safety related aspects

## 7. (e) Program Structure: B.Tech. in Chemical Engineering

7. (e) 1	1. Humanities & Social Sciences										
	including Management Courses (H)					0	2. Basic Science Courses (B)	1	/14	, , ,	
Course	Course	Hou	ırs/ W			Code	Course	Hou	rs/ W	eek P	C
Code	Title	L	T	Р	С	Code	Title Physics: Electromagnetic Theory, Quantum	╁╼			С
18LEH101J		2	0	2	3	18PYB101J	Mechanics, Waves and Optics	3	1	2	5
18LEH102J						18CYB102J	Concepts in Chemistry	3	1	2	5
18LEH103J 18LEH104J		2	0	2	3		Calculus and Linear Álgebra	3	1	0	4
18LEH105J		2	U	2	3	18MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4
18LEH106J					l		Transforms and Boundary Value Problems	3	1	0	4
	General Aptitude	0	0	2	1		Numerical Methods for Engineers	3	1	0	4
	Management Principles for Engineers	2	0	0	2	18BTB101T	Biology  Total Learning Credits	2	0	0	2 <b>28</b>
	Social Engineering	2	0	0	2		Total Learning Credits	•			20
18PDH201T	Employability Skills & Practices	0	0	2	1		4. Professional Core Courses (C)				
	Total Learning Credits				12	Course	Course	Hou	rs/ W	/eek	
Course	3. Engineering Science Courses (S)  Course	Ноп	ırs/ W	look		Code	Title	L	Τ	Р	С
Code	Title	L	T	P	С		Chemical Process Calculations	3	1	0	4
	Engineering Graphics and Design	1	0	4	3		Chemical Engineering Fluid Mechanics	3	0	0	3
18MES102J	Basic Civil and Mechanical Engineering	3	1	2	5		Mechanical operations Heat Transfer	3	0	0	3
	Electrical and Electronics Eng. Workshop	1	0	4	3		Chemical Engineering Thermodynamics	3	0	0	3
	Programming for Problem Solving	3	0	4	5		Principles of Mass Transfer	3	0	0	3
	Physical and Analytical Chemistry	3	0	2	4	18CHC209L	Chemical Engineering Laboratory - I	0	0	4	2
	Materials Science	3	0	0	3	18CHC302T	Chemical Reaction Engineering	3	0	0	3
18CHS2041	Engineering Thermodynamics	3	0	0	3		Mass Transfer Applications	3	0	0	3
	Total Learning Credits 5. Professional Elective Courses (E)				26		Chemical Process Technology	4	0	0	4
	(Any 5 Elective Courses)						Chemical Engineering Laboratory - II	0	0	4	2
	, ,	ŀ	lour	s/			Transport Phenomena	3	0	0	3
Course	Course		Wee	-			Reactor Analysis and Catalysis Process Dynamics, Control and	3	0	0	3
Code	Title	L	Τ	Р	С	18CHC308T	Instrumentation	3	U	0	J
	Renewable Energy Engineering	3	0	0	3	18CHC401J	Process Equipment Design and Drawing	2	0	2	3
	Biochemical Principles	3	0	0	3	18CHC402T	Process Economics and Project Management	3	0	0	3
	Energy Engineering and Technology	3	0	0	3	18CHC403J	Process Modeling and Simulation	2	0	2	3
	Polymer Technology Sustainable Engineering	3	0	0	3		Chemical Engineering Laboratory - III	0	0	4	2
			_			118CHC350T	Comprehension	0	1	0	1
18CHE356T	Industrial Pollution Prevention and Control	1 3		Λ	3						
	Industrial Pollution Prevention and Control	3	0	0	3		Total Learning Credits				55
18CHE357T	Industrial Pollution Prevention and Control Enzyme Engineering Fertilizer Technology	3 3	0	0 0	3 3		Total Learning Credits				55
18CHE357T 18CHE358T 18CHE359T	Enzyme Engineering Fertilizer Technology Petroleum Technology	3	0	0	3		Total Learning Credits 6. Open Elective Courses (0)	3	rs/W	leek	55
18CHE357T 18CHE358T 18CHE359T 18CHE360T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation	3 3 3	0 0 0	0 0 0	3 3 3	Course	Total Learning Credits	3	rs/ W	/eek	55 C
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE361T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries	3 3 3 3	0 0 0 0	0 0 0 0	3 3 3 3	Course Code	Total Learning Credits  6. Open Elective Courses (0)  Course Title	Hou	T	Р	С
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE361T 18CHE362T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination	3 3 3 3 3	0 0 0 0 0	0 0 0 0	3 3 3 3 3	Course Code 18CHO101T	Total Learning Credits  6. Open Elective Courses (0)  Course Title  Sustainable Energy Engineering	Hou L 3	T 0		C 3
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE361T 18CHE362T 18CHE363T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering	3 3 3 3 3 3 3	0 0 0 0 0 0	0 0 0 0 0	3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T	Total Learning Credits  6. Open Elective Courses (0)  Course Title	Hou L 3	T	P 0	С
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE361T 18CHE362T 18CHE363T 18CHE364T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology	3 3 3 3 3 3 3	0 0 0 0 0 0 0	0 0 0 0 0 0	3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering	Hou L 3 3 3 3 3	T 0 0 0	P 0 0 0 0 0 0	C 3 3
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE361T 18CHE362T 18CHE363T 18CHE364T 18CHE365T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment	3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO104T 18CHO105T	Total Learning Credits  6. Open Elective Courses (0)  Course Title  Sustainable Energy Engineering  Petroleum Engineering  Introduction to Chemical Engineering  Process Plant Safety  Pollution Abatement	Hou L 3 3 3 3	T 0 0 0 0	P 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 3 3
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE361T 18CHE362T 18CHE363T 18CHE364T 18CHE365T 18CHE366T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization	3 3 3 3 3 3 3	0 0 0 0 0 0 0	0 0 0 0 0 0	3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO104T 18CHO105T	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety	Hou L 3 3 3 3 3	T 0 0 0	P 0 0 0 0 0 0	C 3 3 3 3 3 3 3 3 3
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE361T 18CHE361T 18CHE363T 18CHE364T 18CHE366T 18CHE366T 18CHE366T 18CHE367T 18CHE368T	Enzyme Engineering Fertilizer Technology Petroleum Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics	3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO104T 18CHO105T	Total Learning Credits  6. Open Elective Courses (0)  Course Title  Sustainable Energy Engineering  Petroleum Engineering  Introduction to Chemical Engineering  Process Plant Safety  Pollution Abatement	Hou L 3 3 3 3 3	T 0 0 0 0	P 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 3 3
18CHE357T 18CHE359T 18CHE359T 18CHE360T 18CHE361T 18CHE361T 18CHE363T 18CHE365T 18CHE365T 18CHE366T 18CHE366T 18CHE366T 18CHE366T 18CHE366T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design	3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO104T 18CHO105T	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits	Hou L 3 3 3 3 3	T 0 0 0 0	P 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 3 3 3
18CHE357T 18CHE358T 18CHE359T 18CHE369T 18CHE361T 18CHE361T 18CHE363T 18CHE364T 18CHE366T 18CHE366T 18CHE366T 18CHE368T 18CHE368T 18CHE368T 18CHE368T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems	3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO104T 18CHO105T 18CHO106T	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering  Petroleum Engineering  Introduction to Chemical Engineering  Process Plant Safety  Pollution Abatement  Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)	Hou L 3 3 3 3 3	T 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 9
18CHE357T 18CHE358T 18CHE359T 18CHE360T 18CHE360T 18CHE363T 18CHE363T 18CHE365T 18CHE365T 18CHE365T 18CHE368T 18CHE368T 18CHE369T 18CHE370T 18CHE370T	Enzyme Engineering Fertilizer Technology Petroleum Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems Electrochemical Engineering	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO105T 18CHO106T	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)  Course Title	Hou L 3 3 3 3 3 3 3 5	T 0 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 9 9
18CHE357T 18CHE358T 18CHE359T 18CHE350T 18CHE361T 18CHE361T 18CHE363T 18CHE365T 18CHE366T 18CHE366T 18CHE366T 18CHE368T 18CHE369T 18CHE371T 18CHE371T 18CHE371T	Enzyme Engineering Fertilizer Technology Petroleum Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems Electrochemical Engineering Petrochemical Technology	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO105T 18CHO106T  Code 18LEM102J	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)  Course Title  Value Education	Hou L 3 3 3 3 3 3 3 3 5 5	T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 9 9
18CHE357T 18CHE359T 18CHE359T 18CHE360T 18CHE361T 18CHE361T 18CHE363T 18CHE364T 18CHE366T 18CHE366T 18CHE367T 18CHE370T 18CHE370T 18CHE371T 18CHE371T	Enzyme Engineering Fertilizer Technology Petroleum Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems Electrochemical Engineering Petrochemical Technology Food Technology	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO105T 18CHO106T  Code 18LEM102J 18GNM101L	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)  Course Title  Value Education Physical and Mental Health using Yoga	Hou L 3 3 3 3 3 3 3 5	T 0 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 9 9
18CHE357T 18CHE359T 18CHE359T 18CHE360T 18CHE361T 18CHE361T 18CHE363T 18CHE365T 18CHE366T 18CHE366T 18CHE367T 18CHE370T 18CHE371T 18CHE371T 18CHE373T 18CHE373T 18CHE373T	Enzyme Engineering Fertilizer Technology Petroleum Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems Electrochemical Engineering Petrochemical Technology	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO105T 18CHO106T  Code 18LEM102J	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)  Course Title Value Education Physical and Mental Health using Yoga NSS	Hou L 3 3 3 3 3 3 3 3 5 5	T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 3 9 9
18CHE357T 18CHE359T 18CHE359T 18CHE360T 18CHE361T 18CHE361T 18CHE363T 18CHE365T 18CHE366T 18CHE366T 18CHE367T 18CHE370T 18CHE371T 18CHE371T 18CHE373T 18CHE373T 18CHE373T	Enzyme Engineering Fertilizer Technology Petroleum Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems Electrochemical Engineering Petrochemical Technology Food Technology Computational Techniques in Chemical Eng.,	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO103T 18CHO103T 18CHO105T 18CHO106T Code 18LEM102J 18GNM101L 18GNM101L	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)  Course Title  Value Education Physical and Mental Health using Yoga  NSS  NCC	Hou L 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 3 9 9
18CHE357T 18CHE359T 18CHE359T 18CHE360T 18CHE361T 18CHE361T 18CHE363T 18CHE365T 18CHE366T 18CHE366T 18CHE367T 18CHE370T 18CHE371T 18CHE371T 18CHE373T 18CHE373T 18CHE373T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems Electrochemical Engineering Petrochemical Technology Food Technology Computational Techniques in Chemical Eng., Introduction to Process Plant Simulation Total Learning Credits	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO102T 18CHO103T 18CHO105T 18CHO106T  Code 18LEM102J 18GNM101L 18GNM101L 18GNM101L 18GNM101L 18GNM102L	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)  Course Title Value Education Physical and Mental Health using Yoga NSS NCC NCO Indian Traditional Knowledge	Hou L 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 3 9 9
18CHE357T 18CHE359T 18CHE359T 18CHE360T 18CHE361T 18CHE361T 18CHE363T 18CHE365T 18CHE366T 18CHE366T 18CHE367T 18CHE370T 18CHE371T 18CHE371T 18CHE373T 18CHE373T 18CHE373T	Enzyme Engineering Fertilizer Technology Petroleum Technology Principles of Membrane Separation Safety & Hazard Analysis in Process Industries Fundamentals of Desalination Air Pollution Control Engineering Fine Chemicals Technology Waste Water Treatment Chemical Process Optimization Equilibrium Stage Operations Computational Fluid Dynamics Biochemical Process Design Micro Chemical Systems Electrochemical Engineering Petrochemical Technology Food Technology Computational Techniques in Chemical Eng., Introduction to Process Plant Simulation	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Code 18CHO101T 18CHO103T 18CHO105T 18CHO106T  Code 18LEM102J 18GNM101L 18GNM102L 18GNM103L 18GNM104L 18LEM109T 18LEM110L	Total Learning Credits  6. Open Elective Courses (O)  Course Title  Sustainable Energy Engineering Petroleum Engineering Introduction to Chemical Engineering Process Plant Safety Pollution Abatement Introduction to Proteomics  Total Learning Credits  Mandatory Courses (M)  Course Title  Value Education Physical and Mental Health using Yoga NSS NCC NSO Indian Traditional Knowledge Indian Art Form	Hou L 3 3 3 3 3 3 3 0	T 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	P 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 3 3 3 3 3 3 3 9 9 C C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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## 7. (f) Program Articulation: B.Tech. in Chemical Engineering

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			ı		ı	Grad	uate	Attrik	outes	ı	ı	ı			PSO	_
Course Code	Course Name	Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modern Tool Usage	Society & Culture	Environment & Sustainability	Ethics	Individual & Team Work	Communication	ProjectMgt. & Finance	ife Long Learning	PSO - 1	M H H H H H H H H H H H M M M M M M M M	PSO - 3
18CHC203T	Chemical Process Calculations	Н	Н	М	M	H	L	L	L	L	L	L	Н	Н		L
	Chemical Engineering Fluid Mechanics	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н		L
18CHC206T	Mechanical operations	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н		L
18CHC207T	Heat Transfer	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н	Н	L
18CHC301T	Chemical Engineering Thermodynamics	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н	Н	L
18CHC208T	Principles of Mass Transfer	Н	Н	Н	М	М	L	L	L	L	L	L	М	Н	Н	L
18CHC209L	Chemical Engineering Laboratory - I	Н	Н	Н	М	М	L	L	L	Н	L	L	Н	Н	Н	L
18CHC302T	Chemical Reaction Engineering	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н	Н	L
18CHC303T	Mass Transfer Applications	Н	Н	Н	М	М	L	L	L	L	L	L	М	Н	Н	L
18CHC304T	Chemical Process Technology	Н	L	Н	М	L	L	L	L	L	L	L	Н	Н	Н	L
18CHC305L	Chemical Engineering Laboratory - II	Н	Н	М	М	М	L	L	L	Н	L	L	Н	Н	М	L
	Transport Phenomena	Н	Н	М	М	L	L	L	L	L	L	L	М	Н	М	L
18CHC307T	Reactor Analysis and Catalysis	Н	Н	Н	М	М	L	L	L	L	L	L	М	Н	Н	L
18CHC308T	Process Dynamics, Control and Instrumentation	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н	Н	L
18CHC401J	Process Equipment Design and Drawing	Н	Н	Н	М	Н	L	L	L	L	L	L	Н	Н	Н	L
18CHC402T	Process Economics and Project Management	Н	Н	М	L	М	Н	Н	L	L	L	Н	Н	Н	М	M
18CHC403J	Process Modeling and Simulation	Н	Н	М	М	Н	L	L	L	L	L	L	М	Н	М	L
18CHC309L	Chemical Engineering Laboratory -III	Н	Н	М	М	М	L	L	L	Н	L	L	М	Н	М	L
18CHE351T	Renewable Energy Engineering	Н	М	М	L	L	М	M	М	L	L	L	Н	Н	М	Н
18CHE352T	Introduction to Biochemical Principles	Н	М	М	L	L	L	L	L	L	L	L	Н	Н	М	L
18CHE353T	Energy Engineering and Technology	Н	М	М	L	L	L	L	L	L	L	L	Н	Н	М	L
18CHE354T	Polymer Technology	Н	L	L	L	L	L	L	L	L	L	L	Н	Н	L	L
18CHE355T	Sustainable Engineering	Н	L	М	L	L	М	М	М	L	L	L	Н	Н	М	Н
18CHE356T	Industrial Pollution Prevention and Control	Н	L	М	L	L	М	М	М	L	L	L	Н	Н	М	Н
18CHE357T	Enzyme Engineering	Н	М	М	L	L	L	L	L	L	L	L	Н	Н	М	L
18CHE358T	Fertilizer Technology	Н	L	М	L	L	М	М	L	L	L	L	М	Н	М	М
18CHE359T	Petroleum Technology	Н	L	М	L	L	L	L	L	L	L	L	Н	Н	М	M
18CHE360T	Principles of Membrane Separation	Н	М	Н	L	L	L	L	L	L	L	L	М	Н	Н	Н
18CHE361T	Safety & Hazard Analysis In Process Industries	Н	L	L	L	L	Н	Н	М	L	L	L	Н	Н	L	Н
18CHE362T	Fundamentals of Desalination	Н	М	Н	L	L	L	L	L	L	L	L	Μ	Н	Н	M
18CHE363T	Air Pollution Control Engineering	Н	М	М	L	L	М	М	М	L	L	L	Н	Н	М	Н
18CHE364T	Fine Chemicals Technology	Н	L	М	L	L	L	L	L	L	L	L	М	Н	М	L
18CHE365T	Waste Water Treatment	Н	L	Н	L	L	М	М	М	L	L	L	Н	Н	Н	Н
	Chemical Process Optimization	Н	Н	Н	М	L	L	L	L	L	L	L	Н	Н	Н	L
18CHE3 <mark>67T</mark>	Equilibrium Stage Operations	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н	Н	L
18CHE368T	Computational Fluid Dynamics	Н	Н	Н	М	Н	L	L	L	L	L	L	Н	Н	Н	L
18CHE369T	Biochemical Process Design	Н	Н	Н	М	М	L	L	L	L	L	L	Н	Н	Н	L
	Micro Chemical Systems	Н	Н	М	М	L	L	L	L	L	L	L	М	Н	М	L
	Electrochemical Engineering	Н	L	L	L	L	М	М	L	L	L	L	Н	Н	L	М
	Petrochemical Technology	Н	L	L	L	L	L	L	L	L	L	L	L	Н	L	М
	Food Tec <mark>hnology</mark>	Н	L	L	L	L	М	М	L	L	L	L	L	Н	L	М
	Computational Techniques in Chemical Engineering	Н	Н	Н	М	Н	L	L	L	L	L	L	L	Н	Н	L
	Introduction to Process Plant Simulation	Н	Н	Н	М	Н	L	L	L	L	L	L	L	Н	Н	L
	Massive Open Online Course - I	Н	М	М	М	М	М	М	М	М	L	L	М	Н	М	М
	Industrial Training-I	Н	М	М	М	М	М	М	М	М	L	L	М	Н	М	M
18CHP103L		Н	М	М	М	М	М	М	М	М	L	L	М	Н	М	M
18CHP104L	Massive Open Online Course - II	Н	М	М	М	М	М	М	М	М	L	L	М	Н	М	M
	Industrial Training-II	Н	М	М	М	М	М	М	М	М	L	L	М	Н	М	N
18CHP106L		Н	М	М	М	М	М	М	М	М	L	L	М	Н	М	N
	Minor Project	Н	Н	Н	М	Н	М	М	М	М	Н	М	Н	Н	Н	N
	Internship (4-6 weeks)	Н	Н	Н	М	Н	М	М	М	М	Н	М	Н	Н	Н	N
18CHP109L	Project	Н	Н	Н	М	Н	М	М	М	М	Н	М	Н	Н	Н	M
18CHP110L	Semester Internship	Н	Н	Н	М	Н	М	М	М	М	Н	М	Н	Н	Н	N
	Program Average	Н	Н	Н	Н	М	М	М	L	М	М	М	Н	Н	Н	٨

## 7. (g) Implementation Plan: B.Tech. in Chemical Engineering

	Semester – I						Semester – II				
Code	Course Title	Hou	ırs/V	Veek P	С	Code	Course Title	Hou			C
401 51140141	Chinese / French / German / Japanese/				0	18LEH101J	English	2	_	rs/ Week T P 0 2 1 0 1 2 0 4 1 2 0 0 0 0 0 0 0 0 2  rs/ Week T P 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3
18LEH10XJ	Korean	2	0	2	3		Advanced Calculus and Complex Analysis	3	1		4
8MAB101T	Calculus and Linear Algebra	3	1	0	4	18PYB101J	Physics: Electromagnetic Theory, Quantum	3	1	2	į
	Concepts in Chemistry	3	1	2	5		Mechanics, Waves and Optics	J	1	2	
8CSS101J	Programming for Problem Solving	3	0	4	5	18MES101L	Engineering Graphics and Design	1	0		
	Electrical and Electronics Eng. Workshop	1	0	4	3	18MES102J	Basic Civil and Mechanical Engineering	3			
8PDM101L	Professional Skills and Practices	0	0	2	0	18PDH101T	General Aptitude	0	0	2	
18LEM102J	Value Education	1	0	1	0	18LEM101T	Constitution of India	1	0	0	(
8GNM102L	NSS					18GNM101L	Physical and Mental Health using Yoga	0	0	2	(
18GNM103L	NCC	0	0	2	0		Total Learning Credits	•	•		2
8GNM104L	NSO										
	Total Learning Credit	s			20						
	3										
	Samastar III						Samastar IV				
	Semester – III	Hou	ire/\	Veek			Semester – IV	Ног	ire/V	Vook	
Code	Course Title	L	T	P	С	Code	Course Title	L			(
18MAR201T	Transforms and Boundary Value Problems	3	1	0	4	18MAR202T	Numerical Methods for Engineers	3	_		_
	Physical and Analytical Chemistry	3	0	2	4	18BTB101T		2			- 2
	Engineering Thermodynamics	3	0	0	3		Materials Science	3			
1001132041	Chemical Process Calculations	3	1	0	4		Mechanical operations	3			,
	Chemical Engineering Fluid Mechanics		0	0	3		Heat Transfer	4			-
		2	0	0			Principles of Mass Transfer				
I SPDH 1031	Social Engineering		U	U	2			3			- ;
	Competencies in Social Skills	0	0	2	0		Chemical Engineering Laboratory - I	0			
	Entrepreneurial Skill Development				•	18PDH1021	Management Principles for Engineers	2	U	U	_ :
8CYM1011	Environmental Science	1	0	0	0	18PDM202L	Critical and Creative Thinking Skills	0	0	2	(
	Total Learning Credit	S			20	18PDM204L	Business Basics for Entrepreneurs  Total Learning Credits		Ĭ		2
	Semester – V					517.4	Semester - VI				
Code	Course Title	Ηοι	_	Veek	С	Code	Course Title	Ηοι		_	(
		L	Τ	Р				L	-		
	Chemical Engineering Thermodynamics	3	0	0	3		Transport Phenomena	3			3
	Chemical Reaction Engineering	3	0	0	3		Reactor Analysis and Catalysis	3			3
18CHC303T	Mass Transfer Applications	3	0	0	3	18CHC308T	Process Dynamics, Control and Instrumentation				3
18CHC304T	Chemical Process Technology	4	0	0	4		Chemical Engineering Laboratory - III	0			2
18CHC305L	Chemical Engineering Laboratory - II	0	0	4	2	18CHC350T	Comprehension	0	_		1
	Professional Elective – 1	3	0	0	3		Professional Elective – 3	3			3
			Λ.	1	0		Professional Flactive 4		0	0	3
	Professional Elective – 2	3	0	0	3		Professional Elective – 4	3		0	3
	Open Elective – 1	3	0	0	3		Open Elective – 2	3	0	U	
18CHP101L	Open Elective – 1 Massive Open Online Course - I	3	0	0	3	18CHP104L	Open Elective – 2 Massive Open Online Course - II	3			
18CHP102L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I					18CHP105L	Open Elective – 2 Massive Open Online Course - II Industrial Training-II				1
18CHP102L 18CHP103L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1	3	0	0	3	18CHP105L 18CHP106L	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II	3			_
18CHP102L 18CHP103L 18PDM301L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills	0	0	2	3 1	18CHP105L 18CHP106L 18PDH201T	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices	3	0	2	
8CHP102L 8CHP103L 8PDM301L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1	3	0	2	3	18CHP105L 18CHP106L 18PDH201T	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II	0	0	2	
8CHP102L 8CHP103L 8PDM301L 8PDM302L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form	3 0 0 0	0	2	3 1 0 0	18CHP105L 18CHP106L 18PDH201T	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices	0	0	2	(
18CHP102L 18CHP103L 18PDM301L 18PDM302L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management	3 0 0 0	0 0	2	3 1 0	18CHP105L 18CHP106L 18PDH201T	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge	0	0	2	(
18CHP102L 18CHP103L 18PDM301L 18PDM302L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form Total Learning Credit	3 0 0 0	0 0	2	3 1 0 0	18CHP105L 18CHP106L 18PDH201T	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits	0	0	2	
18CHP102L 18CHP103L 18PDM301L 18PDM302L 18LEM110L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form Total Learning Credit	3 0 0 0	0 0 0	2 2 2	3 1 0 0 25	18CHP105L 18CHP106L 18PDH201T 18LEM109T	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII	0 0 1	0 0 0	2 0	2
18CHP102L 18CHP103L 18PDM301L 18PDM302L 18LEM110L	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form Total Learning Credit Semester - VII Course Title	3 0 0 0 0	0 0 0 0	2 2 2 2	3 1 0 0 25	18CHP105L 18CHP106L 18PDH201T 18LEM109T	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title	0 0 1	0 0 0	2	2
18CHP102L 18CHP103L 18PDM301L 18PDM302L 18LEM110L Code	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Seminar – 1 Entrepreneurship Management Indian Art Form Total Learning Credit  Semester - VII Course Title Process Equipment Design and Drawing	3 0 0 0 0 ss	0 0 0 0 T	2 2 2 P P 2	3 1 0 0 25 C	18CHP105L 18CHP106L 18PDH201T 18LEM109T Code	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title Project	0 0 1 Hou L	0 0 0	2 0 Veek	(
18CHP102L 18CHP103L 18PDM301L 18PDM302L 18LEM110L Code 18CHC401J 18CHC402T	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form Total Learning Credit  Semester - VII Course Title Process Equipment Design and Drawing Process Economics and Project Management	3 0 0 0 0 ss	0 0 0 0 T 0	2 2 2 2 Week P 2 0	3 1 0 0 25 C	18CHP105L 18CHP106L 18PDH201T 18LEM109T Code	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title	0 0 1	0 0 0	2 2 0	2
18CHP102L 18CHP103L 18PDM301L 18PDM302L 18LEM110L Code 18CHC401J 18CHC402T	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form Total Learning Credit  Semester - VII Course Title Process Equipment Design and Drawing Process Economics and Project Management Process Modeling and Simulation	3 0 0 0 0 ss	0 0 0 0 T 0 0	2 2 2 2 P 2 0 2 2	3 1 0 0 25 C 3 3 3	18CHP105L 18CHP106L 18PDH201T 18LEM109T Code	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title Project	0 0 1 Hou L	0 0 0	2 0 Veek	(
18CHP102L 18CHP103L 18PDM301L 18PDM302L 18LEM110L Code 18CHC401J 18CHC402T	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form  Total Learning Credit  Semester - VII  Course Title  Process Equipment Design and Drawing Process Modeling and Simulation Professional Elective – 5	Hou   L   2   3   2   3   3	0 0 0 0 T 0 0	2 2 2 2 2 Veek P 2 0 2	3 1 0 0 25 C 3 3 3 3	18CHP105L 18CHP106L 18PDH201T 18LEM109T Code	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title Project	0 0 1 Hou L	0 0 0	2 0 Veek	(
8CHP102L  8CHP103L  8PDM301L  8PDM302L  8LEM110L    COde  8CHC401J  8CHC403J	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form Total Learning Credit  Semester - VII Course Title Process Equipment Design and Drawing Process Economics and Project Management Process Modeling and Simulation Professional Elective – 5 Open Elective – 3	3 0 0 0 0 ss	0 0 0 0 T 0 0	2 2 2 2 P 2 0 2 2	3 1 0 0 25 C 3 3 3	18CHP105L 18CHP106L 18PDH201T 18LEM109T Code	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title Project	0 0 1 Hou L	0 0 0	2 0 Veek	2
8CHP102L 8CHP103L 8PDM301L 8PDM302L 8LEM110L Code 8CHC401J 8CHC403J	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form  Total Learning Credit  Semester - VII  Course Title  Process Equipment Design and Drawing Process Modeling and Simulation Professional Elective – 5	Hou   L   2   3   3   3   3	0 0 0 0 T 0 0 0	2 2 2 2 2 P 2 0 2 0	1 0 0 25 C C 3 3 3 3 3	18CHP105L 18CHP106L 18PDH201T 18LEM109T Code	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title  Project Semester Internship	0 0 1 Hou L	0 0 0	2 0 Veek	2
8CHP102L 8CHP103L 8PDM301L 8PDM302L 8LEM110L Code 8CHC401J 8CHC402T 8CHC403J	Open Elective – 1 Massive Open Online Course - I Industrial Training-I Seminar – 1 Analytical and Logical Thinking Skills Entrepreneurship Management Indian Art Form Total Learning Credit  Semester - VII Course Title Process Equipment Design and Drawing Process Economics and Project Management Process Modeling and Simulation Professional Elective – 5 Open Elective – 3	Hou   L   2   3   2   3   3	0 0 0 0 T 0 0	2 2 2 2 2 Veek P 2 0 2	3 1 0 0 25 C 3 3 3 3	18CHP105L 18CHP106L 18PDH201T 18LEM109T Code	Open Elective – 2 Massive Open Online Course - II Industrial Training-II Seminar - II Employability Skills and Practices Indian Traditional Knowledge Total Learning Credits  Semester - VIII Course Title Project	0 0 1 Hou L	0 0 0	2 0 Veek	2