

Study Scheme & Syllabus of

Master of Technology in Chemical Engineering

(M. Tech. Chemical Engineering)

Batch 2018 onwards



By

Department of Academics

IK Gujral Punjab Technical University

IK Gujral Punjab Technical University
Master of Technology in Chemical Engineering

The Programme Specific Outcomes (PSO) of M. Tech. Chemical Engineering:

Curriculum of chemical engineering is intended to prepare graduates to attain the following program specific outcomes:

1. An ability to address multifaceted industrial and technological problems through cutting-edge knowledge and exposure to contemporary concepts and techniques in chemical engineering
2. An ability to apply the knowledge to design and develop different sustainable chemical processes for various industrial processes
3. An ability to adopt and/or apply chemical engineering principles to carry out the advanced research in the relevant threshold areas

IK Gujral Punjab Technical University
Master of Technology in Chemical Engineering

Master of Technology (Chemical Engineering)

It is a Post Graduate (PG) Programme of 2 years duration (4 semesters)

Eligibility for Admission: As per AICTE norms.

First Semester

Contact Hrs: 24

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
MTCH101-18	Core-1	Mathematical and Statistical Methods in Chemical Engineering	3	0	0	40	60	100	3
MTCH102-18	Core-2	Advanced Separation Processes	3	0	0	40	60	100	3
MTCHXXV-18	Program Specific Elective	Elective I One (from the list of Electives I)	3	0	0	40	60	100	3
MTCHXYX-18	Program Specific Elective	Elective II One (from the list of Electives II)	3	0	0	40	60	100	3
MTCH103-18	Lab-1	Laboratory 0I: Process Modeling and Simulation laboratory	0	0	4	60	40	100	2
MTCH104-18	Lab-2	Laboratory II Advanced separation processes	0	0	4	60	40	100	2
MTCH105-18		Research Methodology and IPR	2	0	0	40	60	100	2
MTCHXXX-18	Audit-1	Audit course	2	0	0	40	60	100	0
TOTAL Credits			16	0	8	360	440	800	18

Second Semester

Contact Hrs.:26

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
MTCH201-18	Core-3	Advanced transport phenomena	3	0	0	40	60	100	3
MTCH202-18	Core-4	Advanced Reaction Engineering	3	0	0	40	60	100	3
MTCHXXX-18	Program Specific Elective	Elective III One (from the list of Electives III)	3	0	0	40	60	100	3
MTCHXXX-18	Program Specific Elective	Elective IV One (from the list of Electives IV)	3	0	0	40	60	100	3
MTCH203-18	Lab-3	Advanced Chemical Reaction Engineering-Lab	0	0	4	60	40	100	2
MTCH204-18	Lab-4	Advanced Chemical Engineering Laboratory	0	0	4	60	40	100	2
MTCH205-18		Mini Project	0	0	4	60	40	100	2
MTCHXXX-18	Aud-2	Audit course 2	2	0	0	40	60	100	0
TOTAL			14	0	12	380	420	800	18

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Third Semester

Contact Hrs. : 26

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
MTCHXXX-18	Program Specific Elective	Elective V One (from the list of Electives V)	3	0	0	40	60	100	3
MTCHXXX-18	Open Elective Any One	1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Waste to Energy	3	0	0	40	60	100	3
MTCH301-18	Dissertation	Dissertation Phase –I	0	0	20	60	40	100	10
TOTAL			6	0	20	140	160	300	16

Fourth Semester

Contact Hrs.: 32

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
MTCH401-18	Dissertation	Dissertation Phase –II	0	0	32	--	--	S/US	16
TOTAL			0	0	32	--	--		16

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Audit course 1 & 2

MTCH112-18 English for Research Paper Writing

MTCH113-18 Disaster Management

MTCH114-18 Sanskrit for Technical Knowledge

MTCH115-18 Value Education

MTCH116-18 Constitution of India

MTCH117-18 Pedagogy Studies

MTCH118-18 Stress Management by Yoga

MTCH119-18 Personality Development through Life Enlightenment Skills.

List of Elective-I

MTCH106-18 : Process Design and Synthesis

MTCH107-18 : Chemical Reactor Analysis

MTCH108-18 : Fluidization Engineering

List of Elective-II

MTCH109-18 : Industrial Pollution Control

MTCH110-18 : Application of Nanotechnology in Chemical Engineering

MTCH111-18 : Chemo informatics

List of Elective-III

MTCH207-18 : Modern concepts in Catalysis and Surface Phenomenon

MTCH208-18 : Advanced Downstream Processes

MTCH209-18 : Computational Fluid Dynamics

MTCH210-18 : Bioprocess Engineering

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List of Elective-IV

MTCH211-18: Process Intensification

MTCH212-18: Phase transitions in Process Equipment

MTCH213-18: Micro and Nano fluidics

MTCH214-18: Process Integration

MTCH215-18: Transport in porous Media

MTCH216-18: Micro Flow Chemistry and Process Technology

MTCH217-18: Process Plant Design & Flow sheeting

List of Elective-V

MTCH302-18: Design of Experiments and Parameter Estimation

MTCH303-18: Computer Aided Design

MTCH304-18: Cleaner Production

List of Open Elective

MTCH305-18: Business Analytics

MTCH306-18 Industrial Safety

MTCH307-18 Operations Research

MTCH308-18 Cost Management of Engineering Projects

MTCH309-18 Composite Materials

MTCH310-18 Waste to Energy