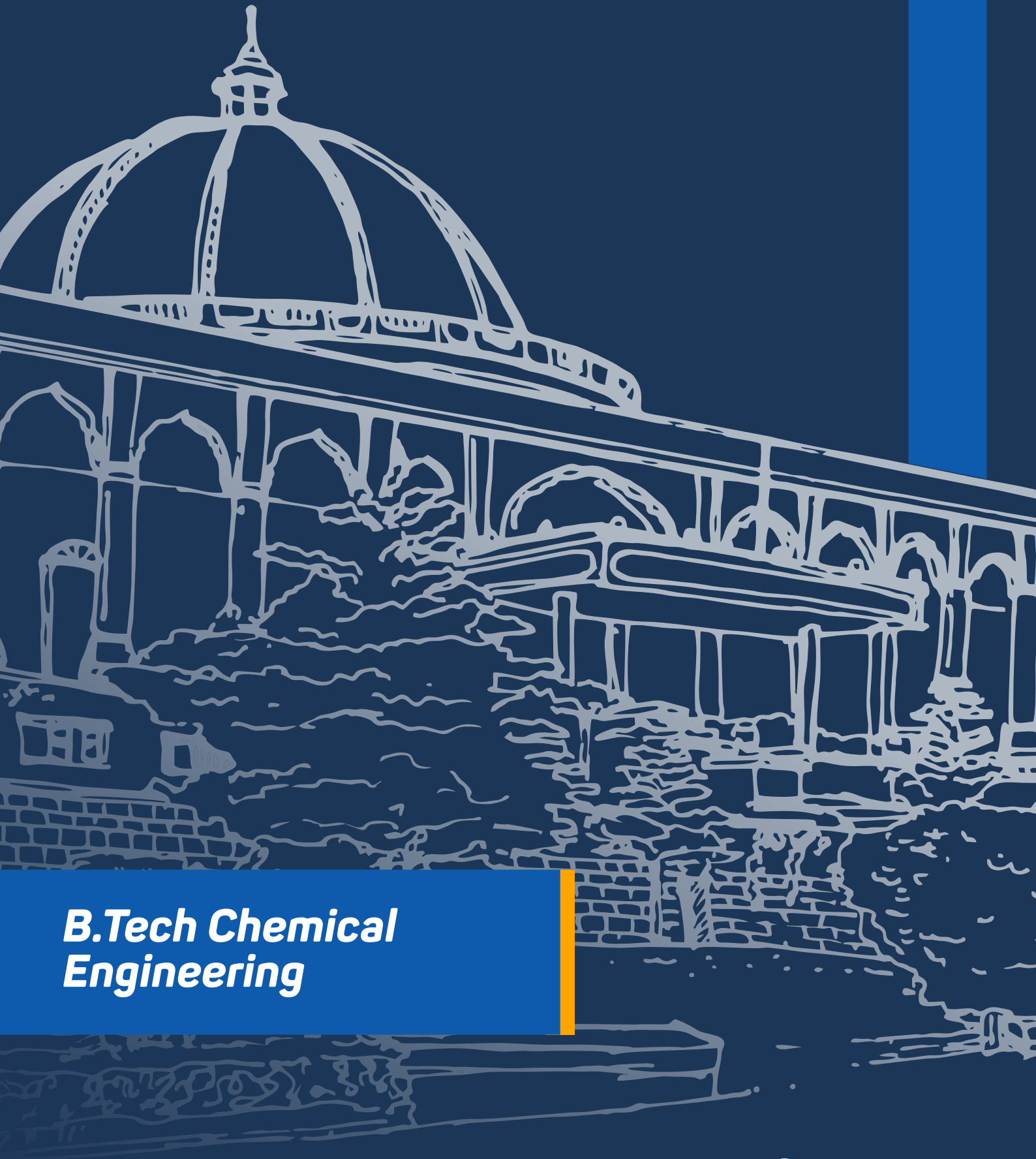
MIT-WPU
॥ विश्वशान्तिर्ध्रुवं ध्रुवा ॥

FACULTY OF ENGINEERING AND TECHNOLOGY



B.Tech Chemical Engineering

Programme Structure

mitwpu.edu.in

Division	Faculty of Engineering and Technology
School Name	School of Engineering & Technology
Department Name	Department of Chemical Engineering
Programme Name	B.Tech. Chemical Engineering

Semester	Odd (I)	Even (II)	Total Credits
First Year	22	22	44
Second Year	22	22	44
Third Year	22	22	44
Fourth Year	16	17	33

COURSE BASKET

Course Type	Description
Programme Core (PF, PM)	Courses dealing with foundations, depth and breadth of the major in which a student is admitted at MIT-WPU.
Programme Electives (PE)	Open electives under the programme allow students to specialise in a particular area connected to their major.
University Core (UC)	Courses that reflect the core MIT-WPU values and the mission of Life Transformation of students.
University Electives (UE)	Multidisciplinary courses across the faculties at MIT-WPU and outside the programme core.
PR	Includes Program Capstone Project, Problem Based Learning, Seminar, and Internships.

Semester I

Semester	Course Type	Course Name / Course Title	Total Credits
I	UC	Indian Constitution	1
I	UC	Environment and Sustainability	1
I	UC	Yoga - I	1
I	UC	Social Leadership Development Program	1
I	UC	Financial Literacy	1
I	PF	Linear Algebra and Differential Calculus	3
I	PF	Physical Chemistry	3
I	PF	Engineering Graphics	3
I	PF	Engineering Mechanics	3
I	PF	Programming and Problem Solving	3
I	PF	Introduction to Cell and Molecular Biology	2
		Total Credits:	**22**

Semester II

Semester	Course Type	Course Name / Course Title	Total Credits
II	UC	Yoga - II	1
II	UC	Co-creation	1
II	UC	AI for everyone	2
II	UC	Foundation of Peace	2
II	UC	Indian Knowledge System (General)	2
II	UC	Sports	1
II	PF	Engineering Physics	3
II	PF	Ideas and Innovations in Manufacturing	1
II	PF	Integral Calculus	3
II	PF	Basics of Electrical and Electronics Engineering	3
II	PF	**Introduction to Chemical Engineering Practices**	**3**
		Total Credits:	**22**

Semester - III

Semester	Course Type	Course Name / Course Title	Total Credits
III	UC	Spiritual and Cultural heritage: Indian Experience	2
III	UC	Research Innovation Design Entrepreneurship (RIDE)	1
III	UE	University Electives - I	3
III	PF	Inorganic and Organic Chemistry	4
III	PM	Mechanics of Materials	3
III	PM	Fluid Mechanics	3
III	PM	Chemical Technology	4
III	PF	Material and Energy Balance Calculations	2
		Total Credits:	**22**

SEMESTER - IV

Semester	Course Type	Course Name / Course Title	Total Credits
IV	PF	Differential Equations and Transform Techniques	3
IV	PM	Mechanical Operations	4
IV	PM	Process Heat Transfer	4
IV	PM	Chemical Engineering Thermodynamics	3
IV	PR	Introduction to Biochemical Engineering	1
IV	PF	Indian Knowledge System (Sci. & Tech.)	2
IV	UC	Rural Immersion	1
IV	UE	University Elective – II	3
IV	UC	Life Transformation Skills	1
		Total Credits:	**22**

Semester - V

Semester	Course Type	Course Name / Course Title	Total Credits
V	UC	Managing Conflicts Peacefully: Tools and Techniques	2
V	UE	University Electives - III	3
V	PE	Program Elective - I	4
V	PM	Mass Transfer	4
V	PM	Numerical Methods in Chemical Engineering	3
V	PM	Chemical Reaction Engineering	4
V	PR	Mini Project	2
		Total Credits:	**22**

Semester - VI

Semester	Course Type	Course Name / Course Title	Total Credits
VI	UC	National Academic Immersion Program	2
VI	PE	Program Elective - II	4
VI	PR	Seminar	1
VI	PM	Process Dynamics and Control	3
VI	PM	Transport Phenomena	2
VI	PM	Process Equipment Design	3
VI	PM	Separation Processes	3
VI	PR	Process Modeling and Simulation	2
VI	PR	Process and Piping Engineering	2
		Total Credits:	**22**

Semester - VII

Semester	Course Type	Course Name / Course Title	Total Credits
VII	PE	Program Elective - III	4
VII	PR	Internship	12
		Total Credits:	**16**

Semester - VIII

Semester	Course Type	Course Name / Course Title	Total Credits
VIII	PE	Program Elective - IV	4
VIII	PM	Plant Design and Project Economics	3
VIII	PM	Applications of AI in Chemical Engineering	2
VIII	PR	Capstone Project	8
		Total Credits:	**17**

Program Electives

Semester	Course Type	Course Name / Course Title	Total Credits
V	PE - I	Refinery Operations	4
V	PE - I	Polymer materials and manufacturing	4
V	PE - I	Environment and Ecology	4
V	PE - I	Principles of Energy Engineering	4
V	PE - I	Metabolic Engineering	4
VI	PE - II	Petrochemical Processes	4
VI	PE - II	Polymer testing and characterization	4
VI	PE - II	Air pollution control technologies	4
VI	PE - II	Sustainable energy systems	4
VI	PE - II	Biocatalysis	4
VII	PE - III	Refinery Process Design	4
VII	PE - III	Polymer Rheology and processing	4
VII	PE - III	Water and Wastewater treatment	4
VII	PE - III	Data analytics in energy engineering	4
VII	PE - III	Bioprocess Engineering	4
VIII	PE - IV	Natural Gas Technology	4
VIII	PE - IV	Polymer waste management and recycling	4
VIII	PE - IV	Solid waste management	4
VIII	PE - IV	Energy Resources, Economics and Policies	4
VIII	PE - IV	Process Intensification in Bioprocesses	4

University Electives

Semester	Course Type	Course Name / Course Title	Total Credits
III	UE-I	Sustainable Materials	3
III	UE-I	Solar, Wind and Hydro Energy	3
III	UE-I	Polymer Materials	3
III	UE-I	Air Pollution Control	3
IV	UE-II	Sustainable Processing	3
IV	UE-II	Bioenergy	3
IV	UE-II	Polymer Processing	3
IV	UE-II	Wastewater Treatment	3
V	UE-III	Life Cycle Analysis of Materials	3
V	UE-III	Fuel Cells	3
V	UE-III	Polymer Testing and Characterization	3
V	UE-III	Solid Waste Management	3

*Modifications to the programmes and courses are contingent upon adherence to university guidelines and procedures. Any proposed changes must undergo a thorough review process, including consultation with relevant academic departments, approval from the appropriate administrative bodies, and compliance with accreditation standards.

Additionally, consideration will be given to feedback from students, faculty, and other stakeholders to ensure that modifications align with the overall educational objectives and mission of the university. The implementation of any approved changes will be communicated transparently to the university community, and appropriate measures will be taken to facilitate a smooth transition for all affected parties.