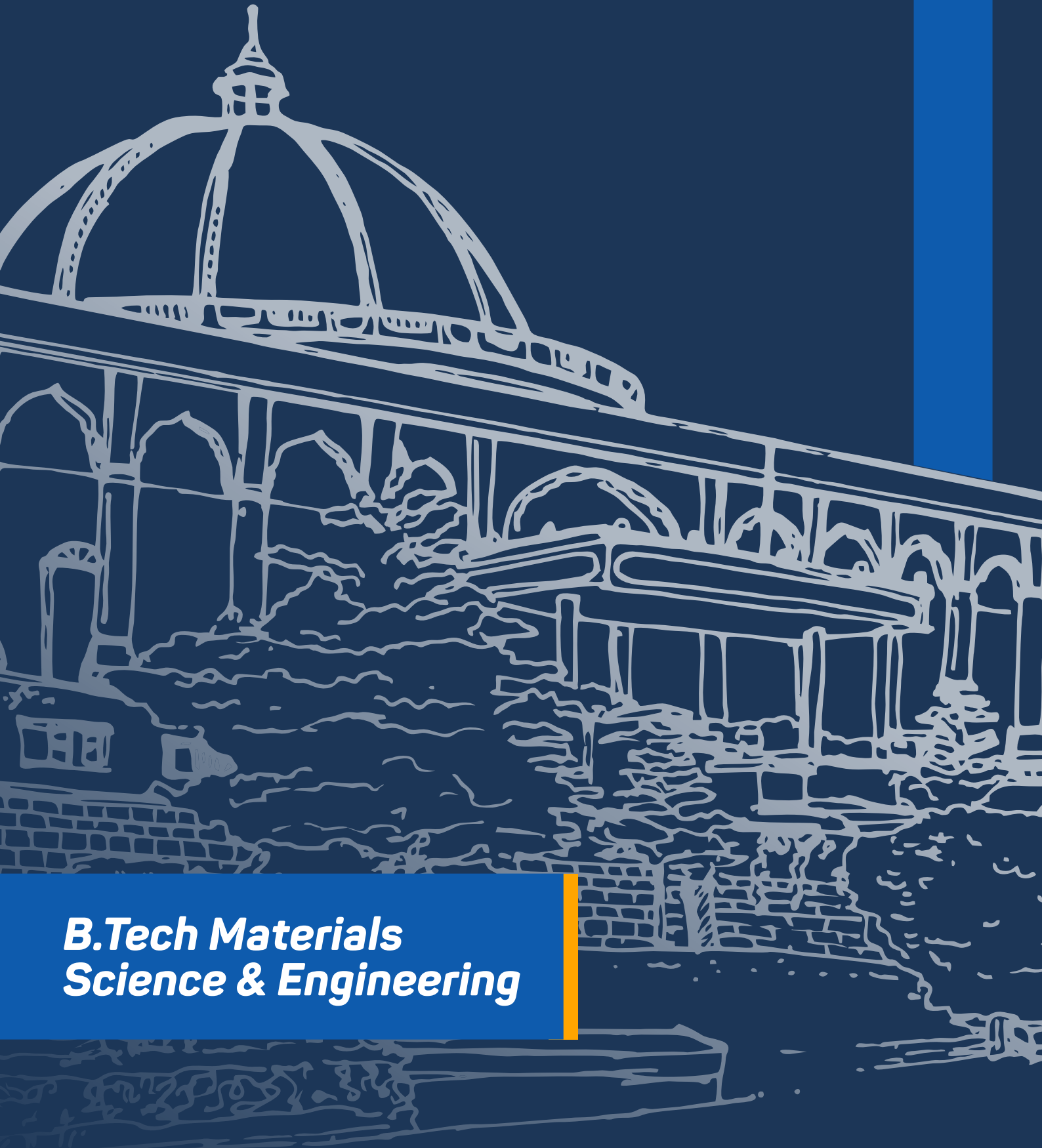




B.Tech Materials Science & Engineering

Division	Faculty of Engineering and Technology
School Name	School of Engineering & Technology
Department Name	Department of Material Science Engineering
Programme Name	B.Tech Materials Science & Engineering

Semester	Odd (I)	Even (II)	Total Credits
First Year	20	24	44
Second Year	25	23	48
Third Year	22	21	43
Fourth Year	16	14	30

+++++ COURSE BASKET +++++

Course Type	Description
Programme Core	Courses dealing with foundations, depth and breadth of the major in which student is admitted at MIT-WPU
Programme Electives	Open electives under the programme allow students to specialise in a particular area connected to their major.
University Core	Courses that reflect the core MIT-WPU values and the mission of Life Transformation of students.
University Electives	Multidisciplinary courses across the faculties at MIT-WPU and outside the programme core.

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	Engineering Chemistry	3
I	PF	Engineering Mechanics	3
I	PF	Programming and Problem Solving	3
I	PF	Engineering Graphics	3
		Total Credits:	20

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	Introduction to Materials Science and Engineering	4
II	PF	Engineering Physics	3
II	PF	Ideas and Innovations in Manufacturing	1
II	PF	Integral Calculus	4
II	PF	Basics of Electrical and Electronics Engineering	3
		Total Credits:	24

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	PM	Mechanics of Materials	3
III	PM	Synthesis of Materials	3
III	PM	Structure and Property Relationship	3
III	PM	Chemical Engineering Principles	4
III	PF	Inorganic and Organic Chemistry	4
III	PF	Impact of AI in Materials Science and Engineering	2
		Total Credits:	25

SEMESTER - IV

Semester	Course Type	Course Name / Course Title	Total Credits
IV	UC	Rural Immersion	1
IV	UC	Life Transformation Skills	1
IV	UE	University Electives - II	3
IV	PM	Materials Characterization	4
IV	PM	Thermodynamics and Kinetics of Materials	3
IV	PM	Polymers	3
IV	PM	Electronics, Optical and Magnetic Properties of Materials	3
IV	PF	Differential Equations and Transform Techniques	3
IV	PM	Indian Knowledge System (Sci. & Tech.)	2
		Total Credits:	23

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	Introduction to Materials Modelling and Simulation	4
V	PM	Functional Materials -I	4
V	PM	Biomaterials	4
V	Program Capstone Project/Seminar and Internships	Seminar	1
		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	PM	Functional Materials -II	4
VI	PM	Materials Processing and Manufacturing Techniques	4
VI	PM	Materials Design and Simulation	4
VI	Program Capstone Project/Seminar and Internships	Materials Development Laboratory	3
		Total Credits:	21

Semester - VII

Semester	Course Type	Course Name / Course Title	Total Credits
VII	PE	Program Elective - III	4
VII	Program Capstone Project/Seminar and Internships	Internship	12
		Total Credits:	16

Semester - VIII

Semester	Course Type	Course Name / Course Title	Total Credits
VIII	PE	Program Elective - IV	4
VIII	PM	Materials Life Cycle	2
VIII	Program Capstone Project/Seminar and Internships	Capstone Project	8
		Total Credits:	14

Program Electives

Semester	Course Type	Course Name / Course Title	Total Credits
V	PE - I	Polymer Blends and Composites	4
V	PE - I	Nanomaterials and Nanotechnology	4
V	PE - I	Materials for Sensors and Actuators	4
V	PE - I	Computational Materials Modelling -I	4
V	PE - I	Introduction to Biomaterials Engineering	4
VI	PE - II	Polymer Rheology and Processing	4
VI	PE - II	Advanced Materials Characterization	4
VI	PE - II	Self-Healing Materials	4
VI	PE - II	Computational Materials Modelling -II	4
VI	PE - II	Biodegradable Materials	4
VII	PE - III	Product Design Using Polymers	4
VII	PE - III	Product Design Using Nano Materials	4
VII	PE - III	Materials for Remote Sensing and Robotics	4
VII	PE - III	Materials Processing Simulation	4
VII	PE - III	Biocomposites	4
VIII	PE - IV	Polymers for Advanced Applications	4
VIII	PE - IV	Processing and Applications of Nanomaterials	4
VIII	PE - IV	Intelligent Materials	4
VIII	PE - IV	Product Design and Failure Analysis	4
VIII	PE - IV	Biomedical Materials	4

*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.