



FACULTY OF  
ENGINEERING AND  
TECHNOLOGY



## ***B.Tech Electronics and Communication Engineering***

Division	Faculty of Engineering and Technology
School Name	School of Engineering and Technology
Department Name	Department of Electrical and Electronics Engineering
Programme Name	B.Tech. Electronics and Communication 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

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| 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 Physics                      | 3             |
| I        | PF          | Basic Electrical Engineering             | 4             |
| I        | PF          | Engineering Mechanics                    | 3             |
| I        | PF          | Programming and Problem Solving          | 3             |
| I        | PF          | Python Programming                       | 1             |
|          |             | <b>Total Credits:</b>                    | <b>22</b>     |

### 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          | Basics Electronics Engineering    | 3             |
| II       | PF          | Integral Calculus                 | 3             |
| II       | PF          | Digital Electronics               | 4             |
| II       | PF          | Engineering Chemistry             | 3             |
|          |             | <b>Total Credits:</b>             | <b>22</b>     |

### 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   | Calculus and Statistical Methods                   | 4             |
| III      | PM   | Signals and Systems                                | 3             |
| III      | PF   | Electronic Devices and Circuits                    | 4             |
| III      | PF   | Data Structures and Algorithms                     | 3             |
| III      | Program Capstone Project/<br>Seminar and Internships | Sensors and Actuators                              | 1             |
| III      | Program Capstone Project/<br>Seminar and Internships | Data Science                                       | 1             |
|          |  | <b>Total Credits:</b>                              | <b>22</b>     |

### 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   | Analog Circuits and Applications | 3             |
| IV       | PM   | Communication Systems            | 3             |
| IV       | PM   | Microcontroller and Applications | 4             |
| IV       | PM   | Control Systems                  | 3             |
| IV       | PM   | Power Converters and Machine     | 3             |
| IV       | Program Capstone Project/<br>Seminar and Internships | Object Oriented Programming      | 1             |
|          |  | <b>Total Credits:</b>            | <b>22</b>     |

### 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          | Digital Signal Processing                           | 4             |
| V        | PM          | Digital Communication                               | 3             |
| V        | PM          | IoT Architectures and Protocols                     | 3             |
| V        | PM          | Computer Networks and Security                      | 3             |
|          |             | <b>Total Credits:</b>                               | <b>22</b>     |

### 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          | Electromagnetics and Radiating Systems | 4             |
| VI       | PM          | Wireless Communication and Networks    | 4             |
| VI       | PM          | Machine Learning for Communication     | 4             |
| VI       | PM          | VLSI Design                            | 4             |
|          |             | <b>Total Credits:</b>                  | <b>22</b>     |

### 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     | Program Capstone Project/Seminar and Internships | Capstone Project           | 13            |
|          |  | <b>Total Credits:</b>      | <b>17</b>     |

## Program Electives

| Semester | Course Type | Course Name / Course Title                | Total Credits |
|----------|-------------|---|---------------|
| V        | PE - I      | Optical communication                     | 4             |
| V        | PE - I      | Optimization Techniques                   | 4             |
| V        | PE - I      | Database Management Systems               | 4             |
| V        | PE - I      | Robotics and Automation                   | 4             |
| V        | PE - I      | Embedded System Design and RTOS           | 4             |
| V        | PE - I      | Embedded System Design and RTOS           | 4             |
| V        | PE - I      | Machine Vision                            | 4             |
| VI       | PE - II     | Advanced Mobile Communication             | 4             |
| VI       | PE - II     | Deep Neural Networks                      | 4             |
| VI       | PE - II     | Full Stack Development                    | 4             |
| VI       | PE - II     | Robotics and Automation                   | 4             |
| VI       | PE - II     | Analog and Digital VLSI Design            | 4             |
| VI       | PE - II     | AI in healthcare                          | 4             |
| VII      | PE - III    | Wireless Sensor Networks                  | 4             |
| VII      | PE - III    | Natural Language Processing               | 4             |
| VII      | PE - III    | Cyber Security                            | 4             |
| VII      | PE - III    | Automotive Electronics                    | 4             |
| VII      | PE - III    | Testing and Testability                   | 4             |
| VII      | PE - III    | Augmented Reality and Virtual Reality     | 4             |
| VIII     | PE - IV     | Satellite Communication and Radar Systems | 4             |
| VIII     | PE - IV     | Edge Intelligence                         | 4             |
| VIII     | PE - IV     | Cloud Computing                           | 4             |
| VIII     | PE - IV     | e-Vehicle                                 | 4             |
| VIII     | PE - IV     | MEMS                                      | 4             |
| VIII     | PE - IV     | Autonomous Vehicle                        | 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.