

**Annexure 1**

**Structure of B. Tech Integrated - Civil Engineering**

<b><u>Semester I</u></b>	<b><u>Semester II</u></b>
Communication Skills	Mathematics - II
Mathematics - I	Physics-II
Physics-I	Chemistry-II
Chemistry-I	Workshop Practice- II
Basics of Computer System	Computer Programming
Engineering Drawing-I	Engineering Drawing-II
Workshop Practice-I	Fundamentals of Engineering Mechanics
	Elements of Electrical Engineering

<b><u>Semester III</u></b>	<b><u>Semester IV</u></b>
Engineering Mathematics-I*	Engineering Mathematics-II*
Engineering Chemistry*	Engineering Physics*
Constitution of India*	Numerical Techniques*
Engineering Mechanics**	Strength of Materials
Building Materials and Construction	Surveying - I
Engineering Geology	Fluid Mechanics

\* Common to all Programmes

\*\* Common with Mechanical Engineering

<b><u>Sr. No.</u></b>	<b><u>Semester V</u></b>	<b><u>Semester VI</u></b>
1.	Engineering Mathematics-III*	Engineering Mathematics-IV*
2.	Surveying - II	Geotechnical Engineering - I
3.	Hydraulic Engineering	Hydraulic Machinery
4.	Concrete Technology	Highway and Railway Engineering
5.	Building Design and Drawing - I	Building Design and Drawing - II
6.	Fundamentals of Structural Analysis	Structural Analysis - I

\* Common to All

<b><u>Sr. No.</u></b>	<b><u>Semester VII</u></b>	<b><u>Semester VIII</u></b>
1.	Irrigation Engineering	Environmental Engineering - I
2.	Geotechnical Engineering - II	Limit State Design of Reinforced Concrete Structures
3.	Transportation Engineering	Building Utilities and Services
4.	Theory of Reinforced Concrete and Pre-stressed Concrete	Construction Techniques and Machinery
5.	Structural Analysis - II	Quantity Surveying

6.	Presentation and Communication Techniques	Entrepreneurship and Management
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Sr. No.	Semester IX	Semester X
1.	Environmental Engineering - II	Design of concrete Structures
2.	Design of Steel Structures	Project Management
3.	Administration of Contracts	Project - II
4.	Project - I	Elective - III
5.	Elective - I	Elective - IV
6.	Elective - II	-----

Elective I Subject	Elective -III
Design of prestressed concrete structures	Design of Bridge Structures
Industrial waste treatment	Environmental Impact assessment and Audit
Ground water Hydrology	Design of Hydraulic Structures
Advanced Structural Analysis	Advanced Structural Mechanics
Elective II Subject	Elective -IV
Structural Dynamics	Earthquake Engineering
Advanced Numerical Techniques	Finite Element Analysis
Soil Dynamics	Geotechnical Earthquake Engineering
Pavement subgrade and materials	Pavement Design and Construction
Rock Mechanics	Disaster Management

**Sixth year of the course is for the Industry Internship.**

**Structure for B. Tech Integrated-Mechanical Engineering**

<b><u>Semester I</u></b>	<b><u>Semester II</u></b>
Communication Skills	Mathematics-II
Mathematics-I	Physics-II
Physics-I	Chemistry-II
Chemistry-I	Workshop Practice-II
Basics of Computer System	Computer Programming
Engineering Drawing-I	Engineering Drawing-II
Workshop Practice-I	Fundamentals of Engineering Mechanics
	Elements of Electrical Engineering
<b><u>Semester III</u></b>	<b><u>Semester IV</u></b>
Engineering Mathematics-I*	Engineering Mathematics-II*
Engineering Chemistry*	Engineering Physics*
Constitution of India*	Numerical Techniques*
Manufacturing Processes - I	Manufacturing Processes-II
Engineering Mechanics**	Machine Drawing and Computer Graphics
Engineering Thermodynamics	Strength of Materials
	Machine Shop
*Common to all Programmes	
**Common with Civil Engineering	
<b><u>Semester V</u></b>	<b><u>Semester VI</u></b>
Engineering Mathematics-III*	Engineering Mathematics-IV*
Strength of Materials-II	Fluid Mechanics
Theory of Machines-I	Thermal Engineering
Industrial Electronics	Materials Engineering
Mechanical Measurement and Metrology	Environmental Engineering and Management Systems
	Theory of Machines - II
<b><u>Semester VII</u></b>	<b><u>Semester VIII</u></b>
Heat Transfer	I. C. Engines
Fluid Machinery	Presentation and Communication Techniques
Design of Machine Elements - I	CAD/CAM/CAE
Industrial Engineering	Design of Machine Element - II
Vibration Engineering	Manufacturing Management
Theory of Machines - III	Mechatronics and Controls

<b>Semester IX</b>	<b>Semester X</b>
Refrigeration and Air Conditioning	Production Design & Development
Finite Element Method	Project Part II
Project Part I	Total Quality Management
Design of Mechanics Systems	Engineering Economics & Accounting
<b>Elective I Subject</b>	<b>Elective II Subject</b>
Tribology	Dynamic System Modeling and Analysis
Non Conventional Energy Sources	Rapid Prototyping and Tooling
Advanced Turbomachinery	Reliability Engineering
Automobile Engineering	Computational Fluid Dynamics
Introduction to Nano-Technology	Robotics
Project Management	Operations Research

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**Structure for B. Tech Integrated-Electronics and Telecommunication Engineering**

<b>Semester I</b>	<b>Semester II</b>
Communication Skills	Mathematics - II
Mathematics - I	Physics-II
Physics-I	Chemistry-II
Chemistry-I	Workshop Practice- II
Basics of Computer System	Computer Programming
Engineering Drawing-I	Engineering Drawing-II
Workshop Practice-I	Fundamentals of Engineering Mechanics
	Elements of Electrical Engineering
<b>Semester III</b>	<b>Semester IV</b>
Engineering Mathematics-I*	Engineering Mathematics-II*
Engineering Chemistry*	Engineering Physics*
Constitution of India*	Numerical Techniques*
Computer Programming -II**	Digital Logic and Design
Electrical Technology	Basic Electronics**
Electronic Materials and Components**	Environmental Studies
*Common to all Programmes	
**Common with Computer Engineering	
<b>Semester V</b>	<b>Semester VI</b>
Engineering Mathematics-III*	Engineering Mathematics-IV*
Electrical Networks Analysis and Synthesis	Probability and Random Processes
Electromagnetic Field Theory	Basic Control System
Advanced Electronics	Electrical and Electronic Instrumentation
Principles of Communication Engineering	Analog Integrated Circuits and Applications
Signals and Systems	Electronic Circuit Design
	Study of Emerging Technologies
<b>Semester VII</b>	<b>Semester VIII</b>
Microprocessor based systems	Programming in JAVA
Antenna and Wave Propagation	Computer communication Networks
Fundamentals of Microwave Engineering	Microcontrollers & Embedded Systems
Digital Signal Processing	TV and Video Engineering

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Digital Communication	Industrial Economics & Management
Implementing of Technology	RF Circuit Design
Professional Ethics	Minor project
<b>Semester IX</b>	<b>Semester X</b>
Optical Fiber Communication	Digital Voice Communication
Wireless Communication Technology	Satellite Communication and Radar
Project Phase I	Project Phase II
Elective I	Elective-III
Elective II	Elective-IV
<b>Elective I (Any One)</b>	<b>Elective III (Any One)</b>
Image Processing	Broadband Technology
Advanced Microcontroller	Network Design and Planning
Robotics	Data Encryption and Network Security
<b>Elective II (Any One)</b>	<b>Elective IV (Any One)</b>
Introduction to Automation	Speech Processing
Industrial Electronics and Applications	Fuzzy Logic and Neural Networks
VLSI Design and Technology	Mobile Computing

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Professional Ethics	Project Workshop
Elective-I	Elective-II
<b>Semester IX</b>	<b>Semester X</b>
System Security	Distributed Computing
Intelligent System	Mobile Computing
Data Warehousing & Mining	Business Intelligence & Data Analytics
Project -I	Project -II
Elective -III	Elective -IV
<b>Elective I Subject</b>	<b>Elective II Subject</b>
Advanced Computer Networks	Introduction to Cloud Computing
Advanced Database Management System	Embedded System
Unix Programming	Advanced Image Processing
Information Storage & Management	Software Architecture
Operation Research	Advanced Computer Architecture
<b>Elective -III</b>	<b>Elective -IV</b>
Robotics	E- Commerce
Parallel Computing	Principles of Compiler Design
Soft Computing	Human Computer Interface
Software Quality Assurance & Testing	
Data Science and Big Data Analytics	

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