Dr B. R. AMBEDKAR INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

PROGRAM OUTCOMES

PO 1: Engineering Knowledge: Apply knowledge of mathematics and science, with fundamentals of Computer Science & Engineering to be able to solve complex engineering problems related to CSE.

PO 2: Problem Analysis: Identify, Formulate, review research literature and analyze complex engineering problems related to CSE and reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PO 3: Design/Development of solutions: Design solutions for complex engineering problems related to CSE and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural societal and environmental considerations.

PO 4: Conduct Investigations of Complex problems: Use research–based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern Tool Usage: Create, Select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to computer science related complex engineering activities with an understanding of the limitations.

PO 6: The Engineer and Society: Apply Reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the CSE professional engineering practice.

PO 7: Environment and Sustainability: Understand the impact of the CSE professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of, and need for sustainable development.

PO 8: Ethics: Apply Ethical Principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 9: Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary Settings.

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large such as able to comprehend and with write effective reports and design documentation, make effective presentations and give and receive clear instructions.

PO 11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.

PO 12: Life-Long Learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning the broadest context of technological change.

प्राचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

Dr B. R. AMBEDKAR INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

PROGRAM SPECIFIC OBJECTIVES

PS01: Apply mathematical concepts: To use mathematical methodologies to crack problems using suitable mathematical analysis, data structure and suitable algorithm.

PSO2: Efficient Hardware/Software Design: the ability to interpret the fundamental concepts and methodology of hardware-software design. Students can apply and investigate the functionality of hardware and software aspects of designing products/applications.

PSO3: **Specialized Software Engineering**: the ability to grasp the software development lifecycle and methodologies of software systems. Possess competent skills and knowledge of software design process to make Industry-ready Software Engineers.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

Dr B. R. AMBEDKAR INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES

1. **FIRST SEMESTER**

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	I	T101: MATHEMATICS - 1 [C101]	**CO1:** Apply calculus concepts to problems in Engineering.
			CO2: Apply concepts of Functions of several Variables for solving Engineering problems.
			CO3: Evaluate multiple integrals and their usage in Engineering field using Mathematical tools.
			CO4: Use the effective mathematical tools for the solutions of differential equations that model physical processes
2		T102 PHYSICS [C102]	**CO1**: To understand the concepts of physics and its significant contributions in the advancement of technology and invention of new products that dramatically transformed modern-day society.
			CO2: To apply different areas of physics which have direct relevance and applications to different Engineering disciplines
			CO3: To understand the concepts and applications of Ultrasonics, optics and some optical devices, Lasers and Fiber optics, Nuclear energy sources and wave mechanics
3		T103 CHEMISTRY [C103]	**CO1:** Develop basic knowledge of hardness of water and process of its removal.
			CO2: Understand composition of polymers, its classification and applications.
			CO3: Understand electrochemistry and electrochemical cells.
			CO4: Develop knowledge of corrosion and its prevention.

			CO5: Apply phase rule for one component & two component alloy systems.
4		T104 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING [C104]	**CO1:** Analyze the electrical circuits, differentiate between different AC circuits and apply the concept in the field of Engineering.
			CO2: Design electronic circuits using PN junction diode, transistor, logic gates and flip flops.
			CO3: To gain knowledge on various communication systems and network models and the use of ISDN.
5		T105 THERMODYNAMICS [C105]	**CO1:** To understand the basic concepts and definition of thermodynamics.
			CO2: To associate first law of thermodynamics with various thermal systems.
			CO3: To relate second law of thermodynamics to heat engines, heat pump and refregirator.
			CO4: To apply concepts of thermodynamics to various Gas power cycles.
			CO5: To develop an intuitive understanding of refregirations system and cycles.
6		T106 COMPUTER PROGRAMMING [C106]	**CO1:** To understand the basics of computers and information technology.
			CO2: To apply problem solving techniques.
			CO3: To develop code by using programming skills in C language.
			CO4: To apply structured programming to solve real life problems.

प्रधानाचार्य / Principal
डॉ.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

2. SECOND SEMESTER

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	II	T107 MATHEMATICS – II [C107]	**CO1**: Use of matrix algebra techniques that is needed by engineers for practical applications.
			CO2: Apply concepts of Curl, Divergence and integration of vectors in vector calculus which is needed for many application problems.
			CO3: Apply Laplace transform which is a useful technique in solving many application problems and to solve differential and integral equations.
			CO4: Use the Fourier transform techniques applied in wide variety of situations in which the functions used are not periodic.
2		T108 MATERIAL SCIENCE [C108]	**CO1**:Understand the importance of crystal systems and apply in the development of new materials and devices.
			CO2: Impart the knowledge about advanced materials so as to enable the significant contributions in the Engineering and Technology.
3		T109 ENVIRONMENTAL SCIENCE [C109]	**CO1**To understand the environment and its energy resources.
			CO2: Analyze the various ecosystems and bio-diversity and tatke necessary action to preserve them
			CO3: Analyze the cause of various pollution and give remedial measures to minimize their effects.
			CO4: Apply the knowledge to solve the various types of environmental pollution.
4		T 110 BASIC CIVIL AND MECHANICAL ENGINEERING [C110]	**CO1:**To appreciate the role of civil engineering in daily walks of life.
			CO2: To be able to differentiate the types of buildings according to national building code.

			CO3: To understand building components and their functions as well as different types of roads, bridges and dams
			CO4: To convey the basic principles of Mechanical Engineering and its relationship to other branches of engineering
			CO5: To explain the concepts of thermal systems used in power plants and narrate the methods of harnessing renewable energies
			CO6: To explain the role of basic manufacturing processes
			CO7: To develop an intuitive understanding of underlying working principles of mechanical machines and systems.
5		T 111 ENGINEERING MECHANICS [C111]	**CO1:**To understand the vector and scalar representation of forces and moments, static equilibrium of particles and rigid bodies in two dimensions
			CO2: To comprehend the effect of friction on equilibrium
			CO3: To understand the laws of motion, the kinematics of motion and the interrelationship and to learn to write the dynamic equilibrium equation
			CO4: To emphasis the concepts through solved examples
6		T112 COMMUNICATIVE ENGLISH [C112]	**CO1**To improve the LSWR skills of I B.Tech students
			CO2: To instill confidence and enable the students to communicate with ease
			CO3: To equip the students with the necessary skills and develop their language prowess

प्राचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR.B.R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

3. THIRD SEMESTER

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	III	MA T31: MATHEMATICS III [C201]	**CO1**Understand the concepts of function of a complex variable and complex integration
			CO2: Apply the complex variable ideas to solve problems occurring in the area of engineering and technology.
			CO3: Expand functions into Fourier series which are very much essential for application in engineering and technology.
2		CS T32: ELECTRONIC DEVICES AND CIRCUITS [C202]	**CO1:**Understand the operation and applications of various electronic devices like diodes, UJT, SCR, DIAC and TRIAC
			CO2: Compare the different biasing circuits used for BJT, JFET and MOSFET
			CO3: Analyze the device models of BJT, JFET and MOSFET
			CO4: Comprehend the concepts of feedback and understand the operation of amplifiers and oscillators
			CO5: Understand the characteristics of operational amplifiers and their applications
3		CS T33: OBJECT ORIENTED PROGRAMMING AND DESIGN [C203]	**CO1**Understand the concepts of Features of object oriented programming.
			CO2: Learn the programming details of object oriented programming.
			CO3: Develop C++ programs for various real time applications.
			CO4: To develop UML design diagrams using OOP concepts.
4		CS T34: DIGITAL SYSTEM DESIGN [C204]	**CO1:**Understand the binary number systems and Boolean algebra.
			CO2: Design combinational logic using only of universal gates, MSI gates and PLDs
			CO3: Design and implement sequential logic circuits of any complexity.

			CO4: Simulate and validate correctness of the digital circuits using VHDL packages.
			CO5: Develop any prototypes using the state of the art reconfigurable devices.
5		CS T35: DATA STRUCTURES [C205]	**CO1:**Select relevant data structures for the given problem in terms of memory and run time efficiency.
			CO2: Apply data abstraction in solving programming problems.
			CO3: Apply operations on various data structures.
6		CS T36: COMPUTER ORGANIZATION AND ARCHITECTURE [C206]	**CO1:**Understand Basics of Computers, Machine Instructions and Programs.
			CO2: Understand the implementation of concepts is done on commercial processors.
			CO3: Gain knowledge regarding the ways for increasing main memory bandwidth.
			CO4: Understands Processor implementation by both hardwired and Microprogrammed control.
			CO5: Understands relation between pipelined execution and instruction set design.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
बहाडगांव, पोर्ट ब्लेयर
Bahargaon, Port Blair - 744103

4. FOURTH SEMESTER

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	IV	MA T41: MATHEMATICS -IV [C207]	**CO1:** Understand the different types of PDE and will be able to solve problems occurring in the area of engineering and technology.
			CO2: Apply the concepts of PDE in the solving Boundary Value Problems like vibrating string (wave equation), heat equation in one and two dimensions.
			CO3: Know sampling theory and apply the same to solve practical problems in engineering and technology.
2		CS T42: MICROPROCESSORS AND MICROCONTROLLERS [C208]	**CO1:** Understanding the inner working components of the microprocessor and microcontrollers
			CO2: Developing assembly language program using 8085 instruction set
			CO3: Developing assembly language program using 8086 instruction set
			CO4: Developing assembly language program using 8051 instruction set
			CO5: Developing various I/O programs for 8085, 8086 and 8051
3		CS T43: AUTOMATA LANGUAGES AND COMPUTATION [C209]	**CO1:** An ability to apply the mathematical methodologies in various research environment
			CO2: An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
			CO3: An ability to design a system, component, or process using automata.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

4		CS T44: DESIGN AND ANALYSIS OF ALGORITHMS [C210]	**CO1:** Selection of relevant algorithm technique and combinations of relevant data structures for the given problems in terms of memory and run time efficiency.
			CO2: Apply data abstraction in solving programming problems based on Divide and Conquer Technique.
			CO3: Apply data abstraction in solving programming problems based on Dynamic Programming, Backtracking, Branch and Bound.
5		CS T45: OBJECT ORIENTED PROGRAMMING [C211]	**CO1:** An ability to conceptualize the problem in terms of object oriented features
			CO2: An ability to use the OO programming techniques in real time applications.
			CO3: An ability to design and develop a complete object oriented applications
6		CS T46: GRAPHICS AND IMAGE PROCESSING [C212]	**CO1:** The students will get acquainted Graphics and Image Processing domains.
			CO2: They will understand the major intricacies of Graphics and Image Processing.
			CO3: They will be able to convert verbal descriptions to images and vice versa.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR.B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

5. FIFTH SEMESTER

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	V	CS T51: Operating System [C301]	**CO1:** Gain the knowledge of different types of operating systems.
			CO2: A clear understanding of program, process and thread.
			CO3: Able to realize the need for Process Synchronization and the various constructs for Process Synchronization.
			CO4: Have an insight into real and virtual memory management techniques
			CO5: Gain knowledge about File systems.
2		CS T52: COMPUTER NETWORKS [C302]	**CO1:** A student should able to analyze the requirement of various hardware components and software to be developed to establish a network.
			CO2: A student should able to analyze the working conditions of a network
			CO3: Provide the solutions to improve the performance of the network.
3		CS T53: DATABASE MANAGEMENT SYSTEMS [C303]	**CO1:** Classify modern and futuristic database applications based on size and complexity
			CO2: Design a database from an Universe of Discourse, using ER diagrams
			CO3: Map ER model into Relations and to normalize the relations
			CO4: Create a physical database from a design using DDL statements with appropriate key, domain and referential integrity constraints
			CO5: Aanalyze different ways of writing a query and justify which is the effective and efficient way

			CO6: Compare and contrast various indexing strategies in different database systems and list key challenges in advanced database systems and to critique how they differ from traditional database systems.
4		CS T54: LANGUAGE TRANSLATORS [C304]	**CO1: D**esign and implement assemblers for different computer architectures
			CO2: Design and implement loaders
			CO3: Understand the major phases of compilation, particularly lexical analysis, parsing, semantic analysis, and code generation.
			CO4: Use formal attributed grammars for specifying the syntax and semantics of programming languages, and their impact on compiler design.
			CO5: Understand how the machine code translation occurs and develop system programs
5		CS T55: SOFTWARE ENGINEERING [C305]	**CO1:** Understand the fundamental knowledge in mathematics, computer science, programming and computer systems, which underpin the software engineering discipline
			CO2: Apply basic knowledge and understanding of the analysis, synthesis and design of complex systems
			CO3: Develop, maintain and evaluate large-scale software systems
			CO4: Produce efficient, reliable, robust and cost-effective software solutions
			CO5: Communicate and coordinate competently by listening, speaking, reading and writing English for technical and general purposes

प्राचार्य / Principal
डॉ.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गांव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

6. SIXTH SEMESTER

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	VI	CS T61: ENTERPRISE SOLUTIONS [C306]	**CO1:** Understand basic concepts of SAP, Oracle, PeopleSoft and Siebel.
			CO2: Write code in SAP, Oracle, PeopleSoft, and Siebel.
			CO3: Ready to cope up with industrial application development.
2		CS T62: EMBEDDED SYSTEMS [C307]	**CO1:** Understand the concepts of embedded processors with microcontrollers.
			CO2: Learn the programming details of microcontrollers.
			CO3: Develop embedded programs for various embedded processors
3		CS T63: WEB TECHNOLOGY [C308]	**CO1:**The students will get acquainted with client side and server side programming languages for web.
			CO2: They will understand the major components and protocols of internet application.
			CO3: Design an innovative application for web.
4		CS E61: OBJECT ORIENTED ANALYSIS AND DESIGN [C309]	**CO1:**Understand Object Oriented Software Development Process
			CO2: Gain exposure to Object Oriented Methodologies & UML Diagrams
			CO3: To apply Object Oriented Analysis Processes for projects
5		CS E63: E-BUSINESS [C310]	**CO1:**Understand the concepts of e-business, its infrastructure and strategy
			CO2: Appreciate business models for Business to Business (B2B) and Business to Consumer (B2C) e-commerce.
			CO3: Evaluate e-business scenarios and propose appropriate e-business investment strategies

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

			CO4: Appreciate and understand topics related to e-business such as supply chain management, customer relationship management change management, E-procurement, and e-marketing.
			CO5: Understand sectoral and regional differences in e-business applications.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गांव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

7. SEVENTH SEMESTER

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	VII	CS T71: ARTIFICIAL INTELLIGENCE [C401]	**CO1:** Capability to develop intelligent systems
			CO2: Apply heuristic concepts to design efficient algorithms that help to attain the goals in satisfactory manner
			CO3: Design applications related to Natural Language Processing.
2		CS T72: COMPUTER HARDWARE & NETWORK TROUBLESHOOTING [C402]	**CO1:** Map the theoretical concepts of Computer Organization and Microprocessors to the Personal Computer organization.
			CO2: Develop device drivers for any of the existing or new devices that is interfaced.
			CO3: Troubleshoot any kind of systems and networking bugs in practice.
3		CS T73: PLATFORM TECHNOLOGY [C403]	**CO1:** Analyze and apply the programming skills in various application development
			CO2: Use the programming techniques, skills, and modern engineering tools necessary for engineering practice.
			CO3: Design and develop a windows and web application.
4		CS E71: SOFTWARE TESTING AND QUALITY ASSURANCE [C404]	**CO1:** Understand how to detect, classify, prevent and remove defects
			CO2: Understand how to conduct formal inspections, record and evaluate results of inspections
			CO3: Understand the effectively strategies of testing, the methods and technologies of software testing;
			CO4: Choose appropriate testing strategies and develop test cases
			CO5: Understand about software quality and software quality standards.
			CO6: Know how to choose which metrics to collect and use them to make predictions.

8. EIGHT SEMESTER

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	VIII	CS T82: ENGINEERING ECONOMICS AND MANAGEMENT [C405]	**CO1:** To develop the knowledge about Engineering Economics and their applications.
			CO2: To analyse the interest formula and their applications.
			CO3: To apply the method of comparison of Alternatives to be implemented for engineers
			CO4: To apply the concepts of General Management in professional environment.
			CO5: To prepare various financial statements using the concepts of Financial Management.
2		CS T83: INFORMATION SECURITY [C406]	**CO1:** To master information security governance, and related legal and regulatory issues
			CO2: To be familiar with how threats to an organization are discovered, analyzed, and dealt with
			CO3: To be familiar with network security threats and countermeasures
			CO4: To be familiar with network security designs using available secure solutions (such as PGP, SSL, IPSec, etc)
			CO5: To be familiar with advanced security issues and technologies (such as DDoS attack detection and containment, and anonymous communications,)

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

ELECTIVES SUBJECT

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	VI SEM	CS E68 Data Mining and Warehousing	**CO1**:Apply suitable Pre-processing techniques for data analysis
			CO2:Apply association rule mining techniques for data analysis
			CO3:Apply appropriate classification and clustering techniques for data analysis
			CO4:Design a Data warehouse system and perform business analysis with OLAP tools

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	VII SEM	NETWORK DESIGN AND MANAGEMENT [CS E62]	**CO1:**Ability to use techniques, skills, and modern networking tools necessary for network analysis, design and management.
			CO2: Ability to identify, formulate and solve network design problems
			CO3: Ability to analyze and design an enterprise network that meets desired requirements.
			CO4: Listing out the steps in a typical network design process & Describe the devices and systems that should be analyzed when gathering network requirements.
			CO5: Create a logical network design & Develop a Physical Network Design Specification.
			CO6: Design a network for a small business as well as Evaluate a large network and determine potential problems.

प्राचार्य / Principal
डा.भीमराव अंबेडकर प्रैद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	VIII SEM	CS E84: Mobile Computing [C407]	**CO1:** Gain basic knowledge in mobile computing
			CO2: Should have a broader knowledge on 3G.
			CO3: Gain the knowledge on emerging wireless network standards.
2		CS E81: CLOUD COMPUTING [C408]	**CO1:** Describe the concept, evolution, architecture ,pros and cons of Cloud Computing.
			CO2: Have knowledge of how hypervisors are used in Virtual Machines.
			CO3: To secure and perform identity management in the Cloud.
			CO4: To access and use the services in the Cloud.

PROJECT WORK

S.No.	SEMESTER	SUBJECT	COURSE OUTCOMES
1	7th & 8th	PROJECT WORK [CS PW7 & CS PW8]	**CO1:** To solve Real life Issues
			CO2: To solve Societal/Industrial Usage
			CO3: To have Novelty/Innovation in project

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

Dr. B. R. Ambedkar Institute of Technology
Department of Electronics and Communication Engineering

Program: B.Tech Electronics and Communication Engineering

Program Outcomes:

1. **Engineering Knowledge**: Apply the knowledge of science and technological practice in Electronics and Communication engineering.
2. **Problem Analysis**: Analyse the complex engineering problems by using the first principles of mathematics and engineering fundamentals.
3. **Design/Development of solutions**: Design & develop complex problems from the acquired knowledge & interpret data by analysing.
4. **Conduct Investigations of Complex problems**: Investigate & locate the faults in complex problems by using different diagnostic tools.
5. **Modern Tool Usage**: Select & use appropriate modern software in solving engineering problems.
6. **The Engineer and Society**: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal & cultural issues & the consequent responsibilities relevant to professional engineering practice.
7. **Environment and Sustainability**: Understand the impact of the professional engineering solutions in societal & environmental contexts & demonstrate the knowledge & need for sustainable development.
8. **Ethics**: Understand the role of professionals & ethical responsibilities by socio-economic pattern & comprehend personal management techniques.
9. **Individual and Teamwork**: Participate effectively in all activities as an individual & as a member or leader in student centric committee & in multidisciplinary works.
10. **Communication**: Enrich the command over English vocabulary & writing ability for effective communication & technical report writing.
11. **Project Management and Finance**: Demonstrate knowledge and understanding of the engineering & management principles & apply this to implement & manage their own/ team projects in multi-disciplinary environment.
12. **Life-Long Learning**: Involve in information search & self-learning activities.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

5/8/21
विभाग अध्यक्ष (इलेक्ट्रोनिकी) (I/C)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव, पोर्ट ब्लेयर -७४४ १०३
Pahargaon, Port Blair - 744 103

Dr. B. R. Ambedkar Institute of Technology
Department of Electronics and Communication Engineering

Program: B.Tech Electronics and Communication Engineering

Program Outcomes:

- To demonstrate knowledge and understanding of Electronics and Communication engineering concepts and apply them to the industries.
- Troubleshoot analog & digital circuits or systems for a given specification and function.
- An understanding of social-awareness & environmental-wisdom along with ethical responsibility to have a successful career and to sustain passion and zeal for real-world applications using optimal resources as an entrepreneur.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR.B.R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744 103

5/8/21
विभाग अध्यक्ष (इलेक्ट्रोनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव, पोर्ट ब्लेयर - 744 103
Pahargaon, Port Blair - 744 103

B. Tech Electronics and Communication Engineering

I Year Course Outcomes

T101 Mathematics I:

1. Solve problems of differential equation of first and second order.
2. To familiarize the students with function of several variables.
3. Know the meaning of curvature and radius of curvature.
4. Get to the bottom of beta and gamma function and their properties.
5. Solve problems on multiple integrals

T102 Physics:

1. Students will able to apply the concepts of Physics in the advancement of technology and invention of new products that dramatically transformed modern-day society.
2. Students will able to use the concepts and applications of Ultrasonics and acoustics of buildings in solving complex problems to different Engineering disciplines.
3. Students will able to apply the concepts and applications of optics and some optical devices, Lasers and Fiber optics, Nuclear energy sources and wave mechanics in solving complex problems in the Engineering and Technology field.

T103 Chemistry:

1. Develop basic knowledge of hardness of water and process of its removal.
2. Understand composition of polymers, its classification and application.
3. Understand electrochemistry and electrochemical cells.
4. Develop knowledge of corrosion and its prevention.
5. Apply phase rule for one component & two component alloy systems.

T110 Basic Civil & Mechanical Engineering:

1. Distinguish the types of building according to national building code.
2. Identify the building components and their functions as well as different types of roads, bridges and dams

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

5/8/21
विभाग अध्यक्ष (इलेक्ट्रोनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव
Pahargaon, Port Blair - 744 103
I/C

3. Distinguish the various infrastructure required for transportation and water resource management
4. To explain the conceptions of internal combustion engines i.e. petrol and diesel engines and to enlighten the perceptions of low pressure boilers, boiler mountings and accessories.
5. To explicate the concepts of thermal systems used in power plants and to narrate the methods of harnessing renewable energies.
6. To develop an intuitive understanding of underlying working principle of mechanical machines and systems and to explain the role of basic manufacturing processes.

T111 Engineering Mechanics:

1. Apply fundamental mechanics theory to analyse various force system.
2. Analyse the truss using various methods and examine the friction forces acting on body
3. Determine the centroid and centre of gravity of the given body.
4. Analyse the given particles& rigid bodies by applying basic principles of kinetics & kinematics

T112 Communicative English:

1. To improve the LSWR skills of I B.Tech students
2. To instil confidence and enable the students to communicate with ease
3. To equip the students with the necessary skills and develop their language prowess

T104 Basic Electrical & Electronics Engineering:

1. To understand and gain basic knowledge about magnetic and electrical circuits, single phase and three phase power measurement and the operating principles of stationary and rotating machines.
2. To understand the basic operation, functions, and applications of PN junction diode, transistor, logic gates and flip flops.
3. To gain knowledge on various communication systems and network models and the use of ISDN

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

विभाग अध्यक्ष (इलेक्ट्रॉनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव, पोर्ट ब्लेयर -७४४ १०३
Pahargaon, Port Blair - 744 103

T105 Engineering Thermodynamics:

1. To understand the basics concepts and definition of thermodynamics.
2. To associate first law of thermodynamics with various thermal systems.
3. To relate second law of thermodynamics to heat engines, heat pump & refrigerator.
4. To apply the concepts of thermodynamics to various gas power cycles.
5. To develop an intuitive understanding of refrigeration systems and cycles.

T106 Computer Programming:

1. To introduce the basics of computers and information technology.
2. To educate problem solving techniques.
3. To impart programming skills in C language.
4. To practice structured programming to solve real life problems.

T 107 Mathematics II:

1 Develop the use of matrix algebra techniques for practical applications.
2 Find the concept of curl, divergence, gradient, and integration of vectors in vector calculus which is needed for many application problems.
3 Classify Laplace transform which is a useful technique in solving many application problems and to solve differential and integral problems.
4 Define Fourier Transform technique used in wide variety of situations in which the functions used are not periodic.

T 108 Material Science:

1. Understand the importance of crystal systems and apply in the development of new materials and devices.
2. Impart the knowledge about advanced materials so as to enable the significant contributions in the Engineering and Technology.

T109 Environmental Science:

1. Understand the Environment and its Energy Resources
2. Analyse various Ecosystems and Biodiversity's and take necessary actions to preserve them.
3. Analyse the causes of various Pollution and give remedial measures to minimize their effect.
4. Apply the knowledge to solve the various types of Environmental Pollution

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

5/8/21
विभाग अध्यक्ष (इलेक्ट्रॉनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव, पोर्ट ब्लेयर - 744 103
Pahargaon, Port Blair - 744 103

B. Tech Electronics and Communication Engineering

II Year Course Outcomes

MA T31 Mathematics-III:

1. Understand the concept of function of a complex variable and complex integration and apply these ideas to solve problems occurring in the area of engineering and technology.
2. Expand functions into Fourier series which are very much essential for application

EC T32 Electrical Engineering:

1. To identify the ways and means to solve magnetically coupled circuits.
2. To understand the different operations of DC and AC machines.
3. To analyse the utilization of different home appliances

EC T33 DATA STRUCTURES AND OOP:

1. To acquaint students with data structures used when programming for the storage and manipulation of data.
2. The concept of data abstraction and the problem of building implementation of abstract data types are emphasized.
3. To understand the concepts of object-oriented programming.
4. To expertise the programming skills through C and C++ languages.

EC T34 Electronic Devices & Circuits:

1. Analyse the different types of diodes, operation, and its characteristics
2. Design and analyse the DC bias circuitry of BJT and FET
3. Design circuits using the transistors, diodes, and oscillators

EC T35 Circuit Theory:

1. Apply theorems to obtain electrical parameters in a DC circuit.
2. .2. Analyse AC circuits using network theorems.
3. Analyse the magnetically coupled circuits of an electrical network through magnetic fields .

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाडगाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

विभाग अध्यक्ष (इलेक्ट्रॉनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाडगाँव, पोर्ट ब्लेयर -७४४ १०३
Pahargaon, Port Blair - 744 103

4. 4. Formulate the equation of graph networks.
5. Evaluate the value of voltage and current from one state to another.

EC T36 Engineering Electromagnetics:

1. Apply the basic laws of static electric field.
2. Apply the basics of Electric potential.
3. Apply the basic laws of magnetostatic field.
4. Understand the electromagnetic Induction and wave equations.
5. Understand the propagation of EM waves.

MA T41 Mathematics-IV:

1. Calculate the equation of tangent, maxima, minima, radius of curvature by differentiation.
2. Solve the given problem(s) of integration using suitable methods.
3. Apply the concept of integration to find area and volume.
4. Solve the differential equation of first order and first degree using suitable methods.
5. Utilize basic concepts of probability distribution to solve elementary engineering problems.

EC T42 Electronic Circuits and Analysis:

1. Check the various linear ICs on the basis of parameters of OP-Amp.
2. Apply apt OP-Amp configuration for the requisite application.
3. Select the relevant OP-Amp circuit for given purposes.
4. Select the apt filter circuit for given purposes.
5. Develop electronics circuits using timer IC555.
6. Develop multivibrators and oscillators for given values.

EC T43 Signals and Systems:

1. Understand the concepts of continuous time and discrete time signals and systems including their classification and properties.
2. Analyze the frequency domain representation of continuous time signals and discrete time signals.
3. Analyze the behavior of continuous time systems and Discrete time systems.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाडगांव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

5/8/21
विभाग अध्यक्ष (इलेक्ट्रोनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाडगाँव, पोर्ट ब्लेयर 744 103
Pahargaon, Port Blair - 744 103

EC T44 Linear and Digital Control Systems:

1. Understand the concepts of control systems and mathematical modeling of electrical systems and mechanical systems.
2. Study the concept of time response of control systems.
3. Study the concept of frequency response of control systems.
4. Study the concept of stability of control systems.
5. Understand the concepts of digital control systems

EC T45 Digital Circuits:

1. Apply the fundamentals of number systems.
2. Apply the concept of Boolean algebra and simplification of Boolean Function.
3. Design the combinational logic circuits.
4. Design the sequential logic circuits.
5. Use of semiconductor memories.

EC T46 Electronics and Communication Systems:

1. To understand the fundamentals of Amplitude Modulation & Demodulation.
2. To acquire knowledge on fundamentals of Frequency Modulation & Demodulation.
3. To gain better understanding of various disturbances happening in communication.
4. To frame ideas on working of RADAR.
5. To acquire knowledge of Television and its communication system.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रैद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाडगाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

18/21
विभाग अध्यक्ष (इलेक्ट्रानिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाडगाँव, पोर्ट ब्लेयर -७४४ १०३
Pahargaon, Port Blair - 744 103

B. Tech Electronics and Communication Engineering

III Year Course Outcomes

MA T51 Mathematics-V:

1. Students will have proper understanding of the concepts and important results in Probability and Random Processes.
2. Apply Probability models to Engineering problems.
3. Understand the basic principles of random variables and random processes needed in applications such as signal processing, digital communications, speech processing, data modelling, etc.

EC T52 Data Communication Networks:

1 Students will be able to use Understand the OSI network model and the associate layers.
2 Students will be able to Perform lab experiments on Data and Traffic management.
3 Students will be able to understand the Knowledge of IEEE standards
4 Will be able to configure the wireless network security.

EC T53 Microprocessors and Microcontrollers:

1. 1.Draw block diagram architecture of 8085.
2. Draw the interfacing circuits of 8085
3. Draw block diagram architecture of 8086.
4. Draw block diagram architecture of 8051
5. 5.Draw design circuits using 8051

EC T54 System Design using Integrated Circuits:

1. To gain knowledge on Linear IC Operational Amplifier IC 741 and to understand its applications in the field of Engineering.
2. To acquire knowledge in other Linear IC's like IC555 and PLL565 and their related applications.
3. To acquire knowledge of the different Digital IC Families, their Standards and to compare the characteristics related to them.
4. To completely understand the design of Synchronous and Asynchronous Sequential Logic circuits.

5/8/21

विभाग अध्यक्ष (इलेक्ट्रोनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744 103

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

5. To understand the steps involved in the design of the Processor and Control Unit.

EC T55 Transmission Lines and Waveguides:

1. To introduce the various types of transmission lines and to discuss the losses associated.
2. To give thorough understanding about impedance transformation and matching.
3. To use the Smith chart in problem solving.

EC E02: Consumer Electronics:

1. To introduce the fundamental principles of equipment used by consumers.
2. To introduce the theory and applications of various types of microphones.
3. To impart knowledge on the various television systems and standards in use.
4. To introduce the concepts of audio & video signal processing and telecommunications.
5. To introduce the students to the basic principle of working of commonly used home appliances.

EC E06: VLSI Design

1. To know about the operating principles of MOS Transistors.
2. To study about the construction of NMOS, CMOS and Bi-CMOS based logic gates.
3. To learn techniques of chip design using programmable devices.
4. To learn the concepts of designing VLSI subsystems.
5. To learn the concepts of modelling a digital system using Verilog HDL.

EC T61 Digital Communication:

1. Analyse the various filters and receivers.
2. Understand the basic types of modulation.
3. Analyse the basic concepts of spread spectrum technology.
4. Understand the concept of synchronization.
5. Analyse the different encryption standards.

EC T62 Wireless Communication:

1. To introduce the concepts of wireless /mobile communications using cellular environment.
2. To make the students to know about the various propagation models, coding and multi access techniques used in the mobile communication.
3. To introduce various wireless networks systems and standards.

EC T63 Digital Signal Processing:

1. Knowledge of advantages of Digital Signal Processing
2. Understand theory and applications of IIR and FIR Filters.
3. Analysis of various types of errors that affects signal during digital signal processing.
4. Understand the concepts of Power Spectral Density estimation for random signals and applications of multirate sampling.
5. Knowledge of DSP processors and architectures.

EC T64 Antennas & Wave Propagation:

1. To give insight of the radiation phenomena.
2. To give a thorough understanding of the radiation characteristics of different types of antennas.
3. To create awareness about the different types of propagation of radio waves at different frequencies.

EC E66 Mobile Computing:

1 To introduce the concepts of wireless /mobile communications using cellular environment.
2 To make the students to know about the various propagation models, coding and multi access techniques used in the mobile communication.
3 To introduce various wireless networks systems and standards.

5/8/21

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

विभाग अध्यक्ष (इलेक्ट्रोनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव, पोर्ट ब्लेयर-UNV 103
Pahargaon, Port Blair - 744 103

I/C

B. Tech Electronics and Communication Engineering

IV Year Course Outcomes

EC T71 Microwave and Optical Engineering:

1. To learn the principles, operation, performance and applications of various microwave tubes and semiconductor devices.
2. To understand the operation and applications of microwave components. To become familiar with the concepts of S-parameters and also to derive the S matrix of different microwave components.
3. To learn the techniques of microwave and antenna measurements
4. To gain an insight of the light propagation in optical fibers, to understand the signal degradation in optical fibers and to study the operation of different optical sources, detectors and amplifiers.
5. To design an optical fiber link and study the principles of WDM and optical networks.

EC T72 Embedded Systems:

1. Maintain microcontroller-based system.
2. Select appropriate family of microcontroller for different application.
3. Interface relevant hardware for given application.
4. Develop programme for given application.
5. Integrate hardware and software for embedded system for given application.

EC E25 Medical Electronics:

1. To gain knowledge about the various electrical and non-electrical physiological Parameters
2. To study the methods of recording and also the method of transmitting these Parameters.
3. To study about the various assist devices used in the hospitals.
4. To gain knowledge about equipment used for physical medicine.
5. To understand the various recently developed diagnostic and therapeutic.

EC E16 Satellite Communication Systems:

1. Introduce the basic concept of Satellite Communication.
2. To elaborate the concept and various features of Satellite communication link design model and parameters.
3. To study on various applications and services of Satellite Communication.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

विभाग अध्यक्ष (इलेक्ट्रॉनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाड़गाँव, पोर्ट ब्लेयर -७४४ १०३
Pahargaon, Port Blair - 744 103

4. Understand the concept of laser satellite communication
5. Application of satellite services in networks

EC E22 RF Circuit Design

1. To introduce concepts of RF spectrum, RF filters and their realisation for making RF integrated chips
2. To make students to understand about the various RF Amplifiers and its low noise stabile designs for latest wireless broadband communications
3. Understand the various other application of RF such as RF mixers, RF Oscillators, PLLs, Hybrid Directional couplers.

EC T81 Professional Ethics:

1. To analyse the need for moral and ethics in professional life
2. To apply their learning for solving various ethical issues in their work environment
3. To develop their technical knowledge through good cooperation and management.

EC T82 Industrial Management &Engineering Economics:

1. To create the knowledge about Engineering Economics and their applications.
2. To apply the interest formula and their applications.
3. To formulate the method of comparison to be implemented for engineers.
4. To analyse the concepts of General Management.
5. To apply the concepts of Financial Management.

EC E20 Cellular Mobile Communication:

1. To understand the fundamentals of cellular communications.
2. To acquire knowledge on mobility and its procedures involved in mobile communication.
3. To gain better understanding of GSM technology and its real time application.
4. To frame ideas on working of various protocols involved in wireless communication.
5. To look forward on emerging technologies and its benefits.

EC E21 Opto Electronic Devices:

1. An ability to understand the concepts in Opto Electronic devices and its configuration.
2. An ability to understand the concepts of opto electronic modulation and Switching devices.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रैयोगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाडगाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

3/8/21
विभाग अध्यक्ष (इलेक्ट्रोनिकी)
H.O.D (ELECTRONICS) I/C
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R Ambedkar Institute of Technology
पहाडगाँव, पोर्ट ब्लेयर - 744 103
Pahargaon, Port Blair - 744 103

EC E12 Telecommunication Switching and Networks:

1. Introduce the concepts of multiplexing such as FDM, TDM and SONET/SDH.
2. Introduce the concepts of digital switching.
3. Introduce the concepts of network synchronization control and management.
4. Introduce the concepts of digital subscriber access.
5. Introduce the concepts of traffic analysis.

EC E14 Cryptography and Network Security:

1. Students will be able to use Understand the OSI network model and the associate layers.
2. Students will be able to understand encryption techniques.
3. Students will be able to understand various cryptography algorithms.
4. Will be able to configure the wireless network security.
5. Will be able to configure the system security.

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाडगाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

विभाग अध्यक्ष (इलेक्ट्रॉनिकी)
H.O.D (ELECTRONICS)
डा. भीमराव अंबेडकर प्रौद्योगिकी संस्थान
Dr. B.R. Ambedkar Institute of Technology
पहाडगाँव, पोर्ट ब्लेयर -७४४ १०३
Pahargaon, Port Blair - 744 103

Program Outcomes (B.Tech Civil), DBRAIT

1. ***Engineering knowledge:*** Apply the knowledge of mathematics, science, engineering fundamentals, and civil engineering to the solution of complex Civil engineering problems.
2. ***Problem analysis:*** Identify, formulate, review research literature, and analyse complex problems using principles of mathematics, natural sciences and civil engineering.
3. ***Design/development of solutions:*** Design solutions for complex civil Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. ***Conduct investigations of complex problems:*** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for the complex civil engineering problems.
5. ***Modern tool usage:*** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex civil engineering activities with an understanding of the limitations.
6. ***The engineer and society:*** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional civil engineering practice.
7. ***Environment and sustainability:*** Understand the impact of the professional civil engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. ***Ethics:*** Apply ethical principles and commit to professional ethics and responsibilities and norms of the civil engineering practice.
9. ***Individual and team work:*** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. ***Communication:*** Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. ***Project management and finance:*** Demonstrate the knowledge and the required understanding of the Civil engineering and management principles and apply these to

Principal 5/8/2021
प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रैद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

HOD(Civil)
विभागाध्यक्ष (असैन)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R.A. INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair

one's own work, as a member or leader in a team, to manage projects in multidisciplinary environments.

12. ***Life-long learning***:Have the ability to engage in independent and life-long learning in the context of changing technological scenario in the field of civil engineering

Program Specific Outcome, B.Tech (Civil Programme)

PSO1. Able to analyze and design components of structural system.

PSO2. Able to analyze and design cost effective pavements.

PSO3. Able to analyze and propose eco – friendly practices in preserving / recycling natural resources.

Program Educational Objectives (PEOs) B.Tech (Civil Programme)

The Program Educational Objectives (PEOs) of the department are given below: -

PEO1: Execute construction work in both public and private sector or became successful entrepreneurs in the field of Civil Engineering.

PEO2: Pursue higher education for continuous up gradation for their professional skills.

PEO3: Exhibit leadership and social responsibility skill for sustainable development.

Principal
प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रैद्योगिकी संस्थान
DR.B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

HOD(Civil)
विभाग अध्यक्ष (नागर)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R. A. INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair

Course outcomes B.Tech Civil Programme - I -Year

COURSE	CO#	STATEMENT
C101.MATHEMATICS	C101.1	Find slope ,curvature,radius of curvature and maximum and minimum value os functions related to different problems.
	C101.2	Apply beta and gamma function and their properties.
	C101.3	solve the problems on partial differential equation
	C101.4	solve the differential equation of first and higher order
	C101.5	solve problems on multiple integrals
C102.PHYSICS	C102.1	Students will able apply the concepts of physics in the advancement of technology and invention of new product that dramatically transform modern0society
	C102.2	Students will able to use the concept and application of ultra sonic and acoustic of buikding in solving complex problem to different engineering disciplines
	C102.3	Students will able to apply the concept and application of optics and some optical device, laser and fibre optics, Nuclear energy source and wave mechanics in solving complex problems in the Engineering ang Technology field.
C103.CHEMISTRY	C103.1	Develop basic knowledge of hardness of water and process of its removal.
	C103.2	Understand composition of polymers, its classification and applications
	C103.3	Understand electrochemistry and electrochemical cells
	C103.4	Develop knowledge of corrosion and its prevention
	C103.5	Apply phase rule for one component & two component alloy systems
C104.BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	C104.1	Students will able to use basic Electronic devices and apply them in the designing of new circuits
	C104.2	Students will able to apply the knowledge digital electronics in the Engineering and Technology field
	C104.3	Students will able to determine the types of communication for solving complex problems in the Engineering field.
C105. ENIGNEERING THERMODYNAMICS	C105.1	To understand the basics concepts of the thermodynamic principles.
	C105.2	To establish the relationship of these properties to thermal system behaviours and thermodynamic laws
	C105.3	To develop methodologies for predicting the system behaviour when it is applied to heat engines, heat pump and refrigerator
	C105.4	To establish the importance of laws of thermodynamics applied to thermal systems such as petrol engines, diesel engines and gas turbines
	C105.5	To develop an intuitive understanding of refrigeration, air conditioning and heat pump

Principal

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

HOD(Civil)

विभाग अध्यक्ष (नागर)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R. A. INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair

COURSE	CO#	STATEMENT
C106.COMPUTER PROGRAMMING	C106.1	Student should understood computer hardware,software's and need of programming language
	C106.2	Student should understood different constructs of programming in C
	C106.3	Student should understand about modular programming and Derived data types in C
	C106.4	Student should learn about user defined data types
	C106.5	Student should learn about file handling in C
C107.MATHEMATICS- II	C107.1	Apply matrix algebra techniques for practical applications
	C107.2	Understand the concept of curl, divergence and integration of vectors in vector calculus and apply these concepts in application problems
	C107.3	Use the technique of laplace transform in solving application problems and solve differential and integral equations
	C107.4	Know fourier transform techniques and use these techniques in variety of situation in which the functions are not periodic
C108.MATERIAL SCIENCE	C108.1	Understand the importance of crystal systems and apply in the development of new materials and devices.
	C108.2	Impart the knowledge about advanced materials so as to enable the significant contributions in the Engineering and Technology.
C109.ENVIRONMENTAL SCIENCE	C109.1	Understand the environment and energy resources
	C109.2	Differntiate between ecosystems and biodiversity
	C109.3	List out the various types of pollution and its factors
	C109.4	Apply the knowledge to solve the various types of environmental pollution
C110. BASIC CIVIL & MECHANICAL ENGINEERING	C110.1	Identify types of building and construction materials.
	C110.2	Analyze and evaluate various building components according to their function.
	C110.3	Apply the knowledge of surveying while setting out roads, bridges, dams, water supply systems.
	C110.4	To explain the conceptions of internal combustion engines i.e. petrol and diesel engines and to enlighten the perceptions of low pressure boilers, boiler mountings and accessories.
	C110.5	To explicate the concepts of thermal systems used in power plants and to narrate the methods of harnessing renewable energies.
	C110.6	To develop an intuitive understanding of underlying working principle of mechanical machines and systems and to explain the role of basic manufacturing processes
C111.ENGINEERING MECHANICS	C111.1	Analyse various force system fundamental using concepts of engineering mechanics
	C111.2	Determine the forces in truss members using different methods
	C111.3	Find the centre of gravity of various compoents in engineering systems
	C111.4	Analyse the motion of reigid bodies and particles by applying basic principles of kinematics and kinetics

Principal

HOD(Civil)

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

विभाग अध्यक्ष (नागर)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R. A. INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair

COURSE	CO#	STATEMENT
C112.COMMUNICATIVE ENGLISH	C112.1	Understand the importance of communication and techniques to overcome barriers to it
	C112.2	Apply reading skills with technical and non0technical material.
	C112.3	Learn effective writing skills.
	C112.4	Make business correspondences and resume
	C112.5	Excelling oral communication through debate, GD, Extempore etc.

Course outcomes B.Tech Civil Programme - II -Year

COURSE	CO	STATEMENT
C201.MATHEMATICS- III	C201.1	Understand and use the concept and important results in complex analysis
	C201.2	Understand and use the concept and important results in fourier series
	C201.3	Apply the concept of complex and fourier series in solving scientific and engineering related problems
C202.GEOSCIENCE ENGINEERING	C202.1	Acquire knowledge of plate tectonics earthquakes and landforms.
	C202.2	Determine the role of minerals on properties of rock and soils.
	C202.3	Assess the suitability of rock for construction.
	C202.4	Discuss the relevance of geological formation in engineering construction.
	C202.5	Determine the suitability of project site from geological consideration
C203.BUILDING TECHNOLOGY	C203.1	Distinguish various basic building material based on their applications.
	C203.2	Illustrate the importance of various finishing materials .
	C203.3	Recommend suitable preservation methods for the building various components .
	C203.4	Describe various ancillary systems in building
	C203.5	Choose appropriate modern techniques for sustainable construction
C204.MECHANICS OF SOLIDS - I	C204.1	Explain relationship between stress and strain and its application on various materials
	C204.2	Draw shear force and bending moment diagram and evaluate bending stress in beam.
	C204.3	Calculate shear stress and complex stresses.
	C204.4	Apply torsion theory to evaluate stress and strain of thin cylinders and shells.
	C204.5	Apply various theories for the analysis of column and walls.
C205. MECHANICS OF FLUIDS	C205.1	List the variouis properties of fluid with solving complex engineering problems .
	C205.2	Analyse the variouys flows in fluid kinematics
	C205.3	Elaborate the boundary layer theory with its application
	C205.4	Measure the flow through various devices
	C205.5	Perform dimensional analysis by various methods
C206. SURVEYING-I	C206.1	Understand the basic concepts of surveying and able to solve problem associated with linear, angular measurements and error corrections.
	C206.2	To learn various methods of taking levels, reducing levels and contours.
	C206.3	To understand various concepts related to Theodolite surveying.

Principal

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Paharyaon, Port Blair - 744103

HOD(Civil)

विभाग अध्यक्ष (नागर)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R. A. INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Paharyaon, Port Blair

COURSE	CO	STATEMENT
	C206.4	To learn about the setting out preliminary works and different methods of measuring areas and volumes of irregular figures.
	C206.5	To learn about the concepts related to Tacheometry.
C207. MATHEMATICS-IV	C207.1	Understand the different types of PDE and will be able to solve problems occuring in engineering and technology
	C207.2	Understandand use the various methods of solving PDE and its application in engineering problems
	C207.3	Know sampling theory and apply to solve practical problems in engineering and technology
C208. CONCRETE TECHNOLOGY	C208.1	Comprehend Engineering properties of materials, Cement, Aggregates, Admixtures
	C208.2	Explain the hydration mechanism of Cement
	C208.3	Explain the properties of fresh and Hardened concrete
	C208.4	Design concrete mixes
C209. ENVIRONMENTAL ENIGNEERING -I	C209.1	Determine the total discharge required for a community .
	C209.2	Decide the best suited source of water for a community.
	C209.3	Verify water standards required for drinking, trade purposes and swimming pools
	C209.4	Identify the contaminants and removed by physical, chemical and biological process .
	C209.5	Design the water distribution system
C210. MECHANICS OF SOLIDS-II	C210.1	Using suitable analysis / method evaluate slope and deflection of beams
	C210.2	Using suitable analysis / method evaluate deflection in frmaes / tursses
	C210.3	Using three moment theorem, determines the shear force and bending moment at various sections in continuous beams
C211.HYDRAULIC & HM	C210.4	Determine stresses in a section subjected to unsymmetrical bending
	C210.5	Determine the Principal strians at a point in a section
	C211.1	Determine most economical section.
	C211.2	Calculate the parameters of channel flow.
	C211.3	Determine forces acting on jet.
	C211.4	Select the suitable turbines.
	C211.5	Select the suitable pumps.
C212. SURVEYI NG-II	C212.1	Determine the Reduced level of elevated points using the Principle of Trignomentric survey.
	C212.2	Determine the horizontal distance between stations using principles of tacheometry
	C212.3	Set out different horizontal curves as required.
	C212.4	Evaluate areas in the field using Principles of Triangulation
	C212.5	Apply modern surveying methods for various measurements in the field.

Principal
प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रैद्योगिकी संस्थान
DR B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

HOD(Civil)
विभाग अध्यक्ष (नागर)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R.A. INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair

Course outcomes B.Tech Civil Programme - III -Year

COURSE	CO	STATEMENT
C301. DESIGN OF RCC STRUCTURES	C301.1	Explain various design principles, properties and behavior of concrete structures.
	C301.2	Design various beams and slabs by applying limit state method.
	C301.3	Design compression members under various loading conditions.
	C301.4	Design footings and staircases and explain design principles of fire resistant structures.
	C301.5	Design brick masonry walls.
C302.STRUCTURAL ANALYSIS - I	C302.1	Analyse indeterminate beams using consistent deformation method
	C302.2	Analyse indeterminate plane trusses using consistent deformation method
	C302.3	Analyse indeterminate beams and frames using slope deflection method
	C302.4	Analyse indeterminate beams and frames using moment distribution method
	C302.5	Analyse indeterminate beams and frames using Kani's method
C303.GEOTECHNICAL ENGINEERING - I	C303.1	Evaluate Index properties of soil
	C303.2	Classify soil according to IS
	C303.3	Assess effect of water on soil
	C303.4	Calculate stress on soil
	C303.5	Determine consoilidation of soil
	C303.6	Evalaute soil strength parameters
C304. ENVIRONMENTAL ENGINEERING - II	C304.1	Explain the different types of sewerage system
	C304.2	Describe the sewage characteristics
	C304.3	Discuss about the methods and requirements of sewage transportation
	C304.4	Design the components of sewage treatment plant
	C304.5	Elaborate about the methods of sewage disposal and reuse
C305.TRANSPORTATION ENGINEERING - I	C305.1	To carry out the geometric design of the pavement
	C305.2	To select suitable materials for construction of highway pavements
	C305.3	Analyse a pavement
	C305.4	Design a pavement as per suitable IRC codes
	C305.5	Discuss construction and maintenance techniques of pavement
C306. STRUCTURAL ANALYSIS -II	C306.1	Analyse arches and cables of bridges under various loading conditions
	C306.2	Construct influence line diagrams showing the variation of moving loads
	C306.3	Construct influence line diagrams for indeterminate structures
	C306.4	Analyze structural components by applying plastic theory
	C306.5	Demonstrate the matrix methods of structural analysis
C307.GEOTECHNICAL ENGINEERING -II	C307.1	Compute lateral earth pressure on retaining structures.
	C307.2	Select appropriate shallow foundation.
	C307.3	Analyze load carrying capacity on pile
	C307.4	Conduct details soil investigation.

Principal

प्राचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR.B.R.AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

HOD(Civil)

विभाग अध्यक्ष (सिविल)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R. A. INSTITUTE OF TECHNOLOGY
पहाड़गाँव, पोर्ट ब्लेयर
Pahargaon, Port Blair

COURSE	CO	STATEMENT
	C307.5	Analyze given slope
C308.TRANSPORTATION ENGINEERING -II	C308.1	Distinguish among components of a railway based on its functional requirement
	C308.2	carry out geometric design of railway track
	C308.3	Differentiate the components of railway crossings
	C308.4	Prepare a airport plan
C525.DESIGN & CONSTRUCTION of PREFABRICATED STRUCTURES	C252.1	Demonstrate manufacturing and erection techniques of precast concrete
	C525.2	Analysis and design of individual precast units.
	C525.3	Design of Precast concrete columns and its connections
	C525.4	Illustrate the application of prefabrication techniology
C509.ADVANCE DESIGN OF REINFORCED CONCRETE STRUCTURES	C509.1	Design an earth retaining structures using earth pressure theory to resist lateral loads
	C509.2	Analyse structural components using advanced theories and codal provision
	C509.3	Design structure to store Engineering materials
	C509.4	Design formworks for various structural components

Course outcomes B.Tech Civil Programme - IV -Year

COURSE	CO	STATEMENT
C401. DESIGN OF STEEL STRUCTURES	C401.1	Design various tension members and its connections applying limit state design
	C401.2	Design various compression members and its connections.
	C401.3	Design various flexure members and its connections.
	C401.4	Design various built up beams and its connections
	C401.5	Design eccentric joints of steel members.
C402.HYDROLOGY & WATER RESOURCE ENGINEERING	C402.1	Discuss various physical process in the hydrology cycle.
	C402.2	Estimate effective rainfall and flood magnitude.
	C402.3	Evaluate yield from ground water resource.
	C402.4	Estimate runoff for effective management using probabilistic methods.
	C402.5	Propose engineering methods of flood management and water conservation.
C502.COASTAL AND OFFSHORE STRUCTURES	C 502.1	Analyze the requirements of various harbour
	C 502.2	Identify the various components of harbour
	C 502.3	Asses the various harbour structure
	C 502.4	Classify the various offshore structure
	C 502.5	List the various method of construction of offshore structures
C505.CONSTRUCTION METHODS & EQUIPMENTS	C505.1	Choose suitable excavation methods depending upon site conditions.
	C505.2	Elucidate various equipments and methods used in foundation.
	C505.3	Describe various methods and equipments for super structure works.
	C505.4	Discuss various methods and equipments used in bridge construction.
	C505.5	Illustrate different methods and equipment's used in construction of pavements and tunnels.

Principal
प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

HOD(Civil)
विभाग अध्यक्ष (नागर)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R. A. INSTITUTE OF TECHNOLOGY
पहाड़गाव, पोर्ट ब्लेयर
Pahargaon, Port Blair

COURSE	CO	STATEMENT
C520.FAILURE ASSESSMENT & REHABILITATION OF STRUCTURES	C520.1	Assess the structure with respect to safety
	C520.2	Explain the deterioration process
	C520.3	Examine the structural and non-structural cracks
	C520.4	Select repair materials and methodology
	C520.5	Monitor strucutures and corrosion occurred in structures
C403. CONSTRUCTION MANAGEMENT	C403.1	Describe the functions of construction management
	C403.2	Apply principles of organisation
	C403.3	Design network techniques for projects
	C403.4	Implement types of contract for construction projects
	C403.5	Assess the legal and safety requirements in construction projects
C523.ENVIRONMENTAL IMPACT ASSESSMENT	C523.1	Identify the various impacts of developmental projects on environment
	C523.2	Choose appropriate technologies to quantify the impact
	C523.3	Identify mitigation measures to safeguard the environment.
C514.ADVANCED STRUCTURAL ANALYSIS	C514.1	Apply the concepts of mechanics to formulate different matrices.
	C514.2	Analyze the structural systems by using matrix methods
	C514.3	Apply the concepts of finite element techniques to solve complex structural problems
C526.EARTHQUAKE RESISTANT DESIGN OF STRUCTURES	C526.1	Identify various parameter s of earthquake
	C526.2	Formulate the equation of motion for a single degree of freedom system
	C526.3	Illustrate the structural system requirements of buildings
	C526.4	Recommend confining reinforcement for a given beam or coloumn as per IS 13920
	C526.5	Design the structures safe against earthquake loads using codal provisions
C515.GROUND WATER HYDROLOGY	C515.1	Identify rock/soil properties affecting ground water flow
	C515.2	Analyse various methods to carry out pumping tests to assess aquifer characteristics
	C515.3	Examine groundwater exploration, design, construction, development and completion of wells.
C506.GEOTECHNICAL PROCESS & APPLICATIONS	C506.1	Justify the needs for various compaction techniques
	C506.2	Illustrate the various drainage methods
	C506.3	Design grouting for ground improvement
	C506.4	Design a ground improvement process by using appropriate soil stabilization methods
	C506.5	Design the suitable solution for improving the ground using geo-synthetics

Principal

प्रधानाचार्य / Principal
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B R AMBEDKAR INSTITUTE OF TECHNOLOGY
पहाड़गांव, पोर्ट ब्लेयर
Pahargaon, Port Blair - 744103

HOD(Civil)

विभागाध्यक्ष (सिविल)
HOD (CIVIL)
डा.भीमराव अंबेडकर प्रौद्योगिकी संस्थान
DR. B.R. A. INSTITUTE OF TECHNOLOGY
पहाड़गांव, पोर्ट ब्लेयर
Pahargaon, Port Blair