

MET Institute of Technology, Polytechnic
Department of Computer Engineering

NBA Accredited

Course Outcomes – 'K' Scheme by MSBTE

'K' Scheme as per National Education Policy 2020

First Semester:

Course	Course Code	Course Outcomes
Basic Mathematics - 311302	311302.1	Apply the concepts of algebra to solve engineering (discipline) related problems.
	311302.2	Utilize trigonometry to solve branch specific engineering problems.
	311302.3	Solve area specific engineering problems under given conditions of straight lines.
	311302.4	Apply differential calculus to solve discipline specific problems.
	311302.5	Use techniques and methods of statistics to crack discipline specific problems.
Communication Skills (English) - 311303	311303.1	Construct grammatically correct sentences in English.
	311303.2	Compose paragraphs and dialogues on given situations.
	311303.3	Comprehend passages correctly.
	311303.4	Use contextual words in English appropriately.
	311303.5	Deliver effective presentations in English using appropriate body language.
Basic Science - 311305	311305.1	Use basic instruments to measure the physical quantities in various engineering situations.
	311305.2	Apply the basic principles of electromagnetics to solve given engineering problems.
	311305.3	Apply basic principles of thermometry and fibre optics to solve engineering problems.
	311305.4	Predict the structure, properties and behaviour of molecules and compounds based on the types of chemical bond.
	311305.5	Apply the concepts of electrochemistry and corrosion preventive measures in industry.
	311305.6	Use the appropriate engineering material and catalyst appropriately.

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Course	Course Code	Course Outcomes
Fundamentals of ICT - 311001	311001.1	Use computer system and its peripherals for given purpose.
	311001.2	Prepare Business document using Word Processing Tool.
	311001.3	Analyze Data and represent it graphically using Spreadsheet.
	311001.4	Prepare professional Slide Show presentations.
	311001.5	Use different types of Web Browsers and Apps.
	311001.6	Explain concept and applications of Emerging Technologies.
Engineering Workshop Practice (Computer Group) - 311002	311002.1	Carry-out elementary level maintenance of a PC.
	311002.2	Create partitions and format hard disk drive.
	311002.3	Install and configure Operating system.
	311002.4	Configure different types of peripheral devices.
	311002.5	Setup small Local Area Network.
	311002.6	Use diagnostic software for fault finding in Computer system.
Yoga and Meditation - 311003	311003.1	Practice basic Yoga and Pranayama in daily life to maintain physical and mental fitness.
	311003.2	Practice meditation regularly for improving concentration and better handling of stress and anxiety.
	311003.3	Follow healthy diet and hygienic practices for maintaining good health.
Engineering Graphics - 311008	311008.1	Draw geometrical figures and engineering curves.
	311008.2	Apply principles of orthographic projections for drawing given pictorial views.
	311008.3	Apply basic CAD commands for drawing different entities.
	311008.4	Use various drawing codes, conventions and symbols as per IS SP-46 in engineering drawing.
	311008.5	Draw free hand sketches of given engineering elements.

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Second Semester:

Course	Course Code	Course Outcomes
Applied Mathematics - 312301	312301.1	Solve the broad-based engineering problems of integration using suitable methods.
	312301.2	Use definite integration to solve given engineering related problems.
	312301.3	Apply the concept of differential equation to find the solutions of given engineering problems.
	312301.4	Employ numerical methods to solve programme specific problems.
	312301.5	Use probability distributions to solve elementary engineering problems.
Basic Electrical and Electronics Engineering - 312302	312302.1	Calculate and measure basic electrical quantities and parameters.
	312302.2	Use different electrical machines by making connections.
	312302.3	Use electrical safety devices in electrical circuit.
	312302.4	Use relevant diode in different electronic circuits.
	312302.5	Use BJT and FET in various electronic circuits.
	312302.6	Use various types of sensors and transducers.
Programming in C - 312303	312303.1	Develop C program using input - output functions and arithmetic expressions.
	312303.2	Develop C program involving branching and looping statements.
	312303.3	Implement Arrays and structures using C programs.
	312303.4	Develop C program using user-defined functions.
	312303.5	Write C program using pointer.
Linux Basics - 312001	312001.1	Install Linux operating system.
	312001.2	Execute general purpose commands of the Linux operating system.
	312001.3	Manage files and directories in Linux operating system.
	312001.4	Use vi editor in Linux operating system.
	312001.5	Write programs using shell script.

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Course	Course Code	Course Outcomes
Professional Communication - 312002	312002.1	Communicate effectively (oral / spoken and Written) in various formal and informal situations minimizing the barriers.
	312002.2	Develop listening skills through active listening and note taking.
	312002.3	Write circulars, notices and minutes of the meeting.
	312002.4	Draft inquiry letter, complaint letter , Job application with resume / CV, Compose effective E - mails.
	312002.5	Write Industrial reports.
Social and Life Skills - 312003	312003.1	Enhance the ability to be fully self-aware and take challenges by overcoming all fears and insecurities and grow fully.
	312003.2	Increase self-knowledge and awareness of emotional skills and emotional intelligence at the place of study/work.
	312003.3	Provide the opportunity to realizing self-potential through practical experience while working individually or in group.
	312003.4	Develop interpersonal skills and adopt good leadership behaviour for self-empowerment and empowerment of others.
	312003.6	Set appropriate life goals with managing stress and time effectively.
Web Page Designing - 312004	312004.1	Use HTML formatting tags to present content on web page.
	312004.2	Develop web page using list and hyperlinks.
	312004.3	Develop web pages using images, colours and backgrounds.
	312004.4	Design HTML forms using table and frames.
	312004.5	Apply presentation schemes on content using CSS.
	312004.6	Publish websites on internet or intranet.

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First Year Exit:

Course	Course Code	Course Outcomes
Web Page Designing - 312004	312004.1	Use HTML formatting tags to present content on web page.
	312004.2	Develop web page using list and hyperlinks.
	312004.3	Develop web pages using images, colours and backgrounds.
	312004.4	Design HTML forms using table and frames.
	312004.5	Apply presentation schemes on content using CSS.
	312004.6	Publish websites on internet or intranet.
Exit-Internship 01 - 3110011	311011.1	Acquire essential employable skills at exit level.
	311011.2	Establish effective communication in working environment.

Third Semester:

Course	Course Code	Course Outcomes
Data Structure using C - 313301	313301.1	Perform basic operations on Arrays.
	313301.2	Apply different Searching and Sorting methods.
	313301.3	Implement basic operations on Linked List.
	313301.4	Perform operations on Stack using Array and Linked List Implementations.
	313301.5	Perform operations on Queue using Array and Linked List Implementations.
	313301.6	Create and Traverse Tree to solve problems.
Database Management System - 313302	313302.1	Explain concept of database management system.
	313302.2	Design the database for given problem.
	313302.3	Manage database using SQL.
	313302.4	Implement PL/SQL codes for given application.
	313302.5	Apply security and backup methods on database.

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Course	Course Code	Course Outcomes
Digital Techniques - 313303	313303.1	Apply number system and codes concept to interpret working of digital systems.
	313303.2	Apply Boolean laws to minimize complex Boolean function.
	313303.3	Develop combinational logic circuits for given applications.
	313303.4	Develop sequential logic circuits using Flip-flops.
	313303.5	Interpret the functions of data converters and memories in digital electronic systems.
Object Oriented Programming using C++ - 313304	313304.1	Write C++ programs using classes and objects.
	313304.2	Develop C++ programs using constructors.
	313304.3	Implement Inheritance in C++.
	313304.4	Implement Polymorphism in C++.
	313304.5	Develop C++ programs to perform file operations.
Computer Graphics - 313001	313001.1	Manipulate Visual and Geometric information of Images.
	313001.2	Develop programs in C applying standard graphics algorithms.
	313001.3	Perform and Demonstrate basic and composite graphical transformations on given object.
	313001.4	Implement various Clipping algorithms.
	313001.5	Develop programs to create Curves.
Essence of Indian Constitution - 313002	313002.1	List salient features and characteristics of the constitution of India.
	313002.2	Follow fundamental rights and duties as responsible citizen of the country.
	313002.3	Analyze major constitutional amendments in the constitution.
	313002.4	Follow procedure to cast vote using voter-id.

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Fourth Semester:

Course	Course Code	Course Outcomes
Environmental Education and Sustainability - 314301	314301.1	Identify the relevant Environmental issues in specified locality.
	314301.2	Provide the green solution to the relevant environmental problems.
	314301.3	Conduct SWOT analysis of biodiversity hotspot.
	314301.4	Apply the relevant measures to mitigate the environmental pollution.
	314301.5	Implement the environmental policies under the relevant legal framework.
Java Programming - 314317	314317.1	Develop java program using classes and objects.
	314317.2	Develop java program for implementing code reusability concept.
	314317.3	Develop program to implement multithreading and exception handling.
	314317.4	Develop java program for implementing event handling using window-based application components.
	314317.5	Implements network programming in java.
	314317.6	Develop java program for managing database.
Data Communication and Computer Network - 314318	314318.1	Analyze the functioning of Data Communication and Computer Network.
	314318.2	Select relevant Transmission Media and Switching Techniques as per need.
	314318.3	Analyze the Transmission Errors with respect to IEEE standards.
	314318.4	Configure different TCP/IP services.
	314318.5	Implement relevant Network Topology using Networking Devices.
Microprocessor Programming - 314321	314321.1	Analyze the functional block diagram of 8086 microprocessor.
	314321.2	Use program development tools and assembler directives.
	314321.3	Use instructions in different addressing modes.
	314321.4	Develop an assembly language program for a given task using assembler.
	314321.5	Use procedures and macros to develop an assembly language program for a given problem.

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Course	Course Code	Course Outcomes
Python Programming - 314004	314004.1	Develop python programs using control flow statements.
	314004.2	Perform operations on various data structures in Python.
	314004.3	Develop packages to solve given problem using python.
	314004.4	Apply object-oriented approach to solve given problem using python.
	314004.5	Use relevant built-in python package to develop application.
UI/UX Design - 314005	314005.1	Explain design thinking concept.
	314005.2	Interpret user requirements.
	314005.3	Select appropriate visual design for given problem.
	314005.4	Create interactions using design tool.
	314005.5	Create innovative design prototype for given applications.

Second Year Exit:

Course	Course Code	Course Outcomes
Exit Industrial Training (Full Time) - 312021	312021.1	Gain hands-on experience in applying theoretical concepts to real-world tasks, improving their understanding and problem-solving abilities and readiness for the workforce.
	312021.2	Boosts students' self-confidence and encourages them to pursue ambitious career goals. to earn a livelihood for a better status in society.
	312021.3	Interact with industry professionals during training to build valuable connections for job opportunities.
Second Year Exit Course (Online) - 312022	312022.1	Demonstrate required skills and readiness relevant to their discipline (e.g., mechanical, civil, electrical, software engineering, hotel management textiles etc.) to join the workforce.
	312022.2	Practice the skills of using industry specific software, tools, machines, methodologies etc. required at the work place of an employer and earn livelihood.
	312022.3	Work collaboratively as professional in group as member and leader to complete the tasks of employers.

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Fifth Semester:

Course	Course Code	Course Outcomes
Operating System - 315319	315319.1	Explain the services and components of an Operating System.
	315319.2	Describe the different aspects of Process Management in an Operating System.
	315319.3	Implement various CPU Scheduling algorithms and evaluate their effectiveness.
	315319.4	Analyze the Memory Management techniques used by an Operating System.
	315319.5	Apply techniques for effective File Management in an Operating System.
Software Engineering - 315323	315323.1	Select suitable software development process model.
	315323.2	Prepare software requirement specification.
	315323.3	Construct different Software design models.
	315323.4	Apply different planning and cost estimation techniques for a software product.
	315323.5	Apply project management techniques in software development.
	315323.6	Use quality assurance principles in software development.
Entrepreneurship Development and Startups - 315002	315002.1	Identify one's entrepreneurial traits.
	315002.2	Use information collected from stakeholder for establishing/setting up/founding starts up.
	315002.3	Use support systems available for Starts up.
	315002.4	Prepare project plans to manage the enterprise effectively.
Seminar and Project Initiation Course - 315003	315003.1	Identify topics of seminar presenting to the large gathering at the institute/conference.
	315003.2	Collect relevant and updated research-based data and information to prepare a paper of seminar presentation.
	315003.3	Apply presentation skills.
	315003.4	Create conducive environment for learning and discussion through seminar presentation.
	315003.5	Identify a problem statement and establish the action plan for the successful completion of the project.

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Course	Course Code	Course Outcomes
Internship (12 Weeks) - 315004	315004.1	Observe time/resource management and industrial safety aspects.
	315004.2	Acquire professional experience of industry environment.
	315004.3	Establish effective communication in working environment.
	315004.4	Prepare report of assigned activities and accomplishments.
Advance Computer Network - 315321	315321.1	Analyze the packet structure of IPv4 and IPv6.
	315321.2	Configure Static and Dynamic Routing Protocols Using Simulators.
	315321.3	Illustrate functions of Transport layer protocols.
	315321.4	Implement Application layer protocols on a network.
	315321.5	Work with various Wireless Networking Technologies.
Cloud Computing - 315325	315325.1	Use basic Cloud based applications.
	315325.2	Explain Virtualization in Cloud Computing.
	315325.3	Maintain storage system and services in Cloud.
	315325.4	Apply Security in Cloud Computing.
	315325.5	Use various Cloud Platforms.
Data Analytics - 315326	315326.1	Elaborate the fundamental concepts of Data Analytics.
	315326.2	Apply appropriate statistical techniques to analyze and interpret complex Datasets.
	315326.3	Analyze numerical data by creating pivot table.
	315326.4	Represent data in terms of various types of charts.
	315326.5	Visualize the data using a Python library.

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Sixth Semester:

Course	Course Code	Course Outcomes
Management - 315301	315301.1	Use relevant management skills to handle work situation.
	315301.2	Apply appropriate techniques of product, operations and project management.
	315301.3	Use comprehensive tools of recent management practices.
	315301.4	Plan suitable marketing strategy for a product/service.
	315301.5	Utilize supply chain and human resource management techniques for effective management.
Emerging Trends In Computer Engineering And Information Technology - 316313	316313.1	Elaborate the role of Artificial Intelligence ,Machine Learning and Deep Learning in various domains.
	316313.2	Compare the architecture of IoT in Local environment vs Cloud Environment.
	316313.3	Explain the functioning of Blockchain Technology in various applications considering different challenges.
	316313.4	Explain characteristics of different Immersive Technologies.
	316313.5	Identify the appropriate Model of Digital Forensic Investigation for given situation.
Software Testing - 316314	316314.1	Explain various software testing methods.
	316314.2	Prepare test cases for different levels of testing.
	316314.3	Prepare test plan for a given application.
	316314.4	Create defect report for a given application.
	316314.5	Apply automation testing tools to test software.
Client Side Scripting - 316005	316005.1	Develop web page using client side scripting technology.
	316005.2	Design dynamic web pages using AngularJS.
	316005.3	Implement the built-in functions and objects in AngularJS.
	316005.4	Develop web application using React.
	316005.5	Apply event handling in React Framework.

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Course	Course Code	Course Outcomes
Mobile Application Development - 316006	316006.1	Interpret the features of android operating system.
	316006.2	Use after configuring Android development environment.
	316006.3	Develop android applications using UI components and layouts.
	316006.4	Create database driven Android applications.
	316006.5	Develop advanced Android applications that requires relevant permissions for security.
Capstone Project - 316004	316004.1	Elaborate the identified field problem from the perspective of project work at institute.
	316004.2	Conduct feasibility & viability analysis (using data collection, experiments, Simulation , Coding) to validate required resources, cost, support of the project work.
	316004.3	Apply the acquired knowledge and skills in providing solutions to the real field/industrial problems.
	316004.4	Present Project and its output/ findings / achievements along with its exhibits.
Digital Forensic And Hacking Techniques - 316315	316315.1	Explain digital forensics investigation process.
	316315.2	Apply various Digital Forensic Investigation Models.
	316315.3	Apply digital Evidence collecting and handling techniques.
	316315.4	Identify various types of cyber attacks.
	316315.5	Apply Tools and Techniques for Ethical Hacking.
Machine Learning - 316316	316316.1	Explain the role of machine learning in AI and data science.
	316316.2	Implement data preprocessing.
	316316.3	Implement feature engineering techniques to prepare data for machine learning models.
	316316.4	Apply supervised learning models to train and evaluate.
	316316.5	Apply unsupervised learning models to train and evaluate.
Network And Information Security - 316317	316317.1	Identify types of Cyber attacks and threats.
	316317.2	Apply multi-factor user authentication and access control.
	316317.3	Implement encryption/decryption techniques.
	316317.4	Use tools and techniques to prevent cyber attacks.
	316317.5	Apply security on Network and Database.