



Progressive Education Society's

Modern College of Engineering, Shivajinagar, Pune-05.

Department of Artificial Intelligence and Machine Learning

**COURSE OUTCOMES (SE AIML 2020 PATTERN
SYLLABUS)**

C201 : Discrete Mathematics

C201.1	Formulate and apply formal proof techniques and solve the problems with logical reasoning.
C201.2	Analyze and evaluate the combinatorial problems by using probability theory.
C201.3	Apply the concepts of graph theory to devise mathematical models.
C201.4	Analyze types of relations and functions to provide solution to computational problems.
C201.5	Identify techniques of number theory and its application.
C201.6	Identify fundamental algebraic structures.

C202 : Data Structures and Algorithms

C202.1	Perform basic analysis of algorithms with respect to time and space complexity.
C202.2	Select appropriate searching and/or sorting techniques in the application development.
C202.3	Implement abstract data type (ADT) and data structures for given application.
C202.4	Design algorithms based on techniques like brute -force, divide and conquer, greedy, etc.
C202.5	Apply implement learned algorithm design techniques and data structures to solve problems.
C202.6	Design different hashing functions and use files organizations.

C203 : Computer Network

C203.1	Understand data/signal transmission over communication media.
C203.2	Understand basics of computer networking and compare functions of OSI and TCP/IP model using concepts of communication theory.
C203.3	Analyze data link layer services, different access techniques, and Ethernet standards.
C203.4	Understand the network layer services, apply skills of subnetting, supernetting and routing mechanisms.
C203.5	Illustrate services and protocols used at transport layer.
C203.6	Understand and learn the different application layer protocols.





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C204 : Object Oriented Programming

C204.1	Differentiate various programming paradigms.
C204.2	Identify classes, objects, methods, and handle object creation, initialization, and Destruction to model real-world problems.
C204.3	Identify relationship among objects using inheritance and polymorphism principles.
C204.4	Handle different types of exceptions and perform generic programming.
C204.5	Use of files for persistent data storage for real world application.
C204.6	Apply appropriate design patterns to provide object-oriented solutions.

C205 : Software Engineering

C205.1	Classify various software application domains.
C205.2	Analyze software requirements by using various modeling techniques.
C205.3	Translate the requirement models into design models.
C205.4	Apply planning and estimation to any project.
C205.5	Use quality attributes and testing principles in software development life cycle.
C205.6	Discuss recent trends in Software engineering by using CASE and agile tools.

C206 : Data Structures and Algorithms Laboratory

C206.1	Analyze algorithms and to determine algorithm correctness and time efficiency class.
C206.2	Implement abstract data type (ADT) and data structures for given application.
C206.3	Design algorithms based on techniques like brute -force, divide and conquer, greedy, etc.).
C206.4	Solve problems using algorithmic design techniques and data structures.
C206.5	Analyze of algorithms with respect to time and space complexity.

C207: Object Oriented Programming Laboratory

C207.1	Differentiate various programming paradigms.
C207.2	Identify classes, objects, methods, and handle object creation, initialization, and destruction to model real-world problems.
C207.3	Identify relationship among objects using inheritance and polymorphism.
C207.4	Handle different types of exceptions and perform generic programming.
C207.5	Use file handling for real world application.
C207.6	Apply appropriate design patterns to provide object-oriented solutions.





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C208: Computer System Laboratory

C208.1	Implement small size network and its use of various networking commands.
C208.2	Understand and apply of networking and simulation tool i.e packet tracer.
C208.3	Configure the various routing and switching protocols using packet tracer.
C208.4	Configure various client/server environments to use application layer protocols.
C208.5	Explore use of protocols in various wired applications.

C209: Soft Skill Laboratory

C209.1	Introspect about individual's goals, aspirations by evaluating one's SWOC and think creatively.
C209.2	Develop effective communication skills including Listening, Reading, Writing and Speaking.
C209.3	Constructively participate in group discussion, meetings and prepare and deliver Presentations.
C209.4	Write precise briefs or reports and technical documents.
C209.5	Practice professional etiquette, present oneself confidently and successfully handle personal interviews .
C209.6	Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter-personal relationships, conflict management and leadership quality.

C210(C): Mandatory Audit Course- Japanese Module -I

C210 (C).1	Converse with simple sentences in Japanese.
C210 (C).2	Recognize and read simple sentences in Japanese.
C210 (C).3	Write simple sentences in Japanese.
C210 (C).4	Be aware about Japanese society and people.

C211: Applied Mathematics

C211.1	Solve Linear differential equations, essential in modelling and design of computer-based systems.
C211.2	Apply concept of Fourier transform and Z-transform and its applications to continuous and discrete systems and image processing.
C211.3	Apply Statistical methods like correlation & regression analysis and probability





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	theory for data analysis and predictions in machine learning.
C211.4	Solve Algebraic & Transcendental equations and System of linear equations using numerical techniques.
C211.5	Obtain Interpolating polynomials, numerical differentiation and integration, numerical solutions of ordinary differential equations used in modern scientific computing.

C212: Operating System

C212.1	Describe the role of Modern Operating Systems and make use of shell commands to build shell scripts.
C212.2	Describe the concept of thread and process management, compare different process scheduling algorithms, and justify what algorithm to use in given scenario.
C212.3	Explain synchronization and deadlock; analyze classical IPC problems, also infer the existence of deadlock in the system.
C212.4	Apply the concepts of various memory management techniques.
C212.5	Make use of concept of I/O management and File system.
C212.6	Understand the concepts of different system softwares.

C213 : Fundamental of Artificial Intelligence and Machine Learning

C213.1	Evaluate Artificial Intelligence (AI) methods and describe their foundations.
C213.2	Analyze and illustrate how search algorithms play vital role in problem solving, inference, perception, knowledge representation and learning.
C213.3	Demonstrate knowledge of reasoning and knowledge representation for solving real world problems.
C213.4	Recognize the characteristics of machine learning that makes it useful to real-world problems.
C213.5	Apply the different supervised learning methods of support vector machine and tree based models.
C213.6	Use different linear methods for regression and classification with their optimization through different regularization techniques.

C214 : Database Management System

C214.1	Apply fundamental elements of database management systems.
C214.2	Design ER-models to represent simple database application scenarios.





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C214.3	Formulate SQL queries on data for relational databases.
C214.4	Improve the database design by normalization & to incorporate query processing.
C214.5	Apply ACID properties for transaction management and concurrency control.
C214.6	Analyze various database architectures and technologies.

C215 : Computer Graphics

C215.1	Apply mathematical and logical aspects for developing elementary graphics operations like scan conversion of points, lines, circle, and apply it for problem solving.
C215.2	Employ techniques of geometrical transforms to produce, position and manipulate Objects in 2 dimensional and 3-dimensional space respectively.
C215.3	Describe mapping from a world coordinates to device coordinates, clipping, and projections in order to produce 3D images on 2D output device.
C215.4	Apply concepts of rendering, shading, animation, curves and fractals using computer graphics tools in design, development and testing of 2D, 3D modeling applications.
C215.5	Perceive the concepts of virtual reality.

C216 : Operating System Laboratory

C216.1	To apply the basics of Linux commands.
C216.2	To build shell scripts for various applications.
C216.3	To implement basic building blocks like processes, threads under the Linux.
C216.4	To develop various system programs for the functioning of OS concepts in user space like concurrencycontrol, CPU Scheduling, Memory Management and Disk Scheduling in Linux.
C216.5	To develop system programs for Inter Process Communication in Linux.

C217 : Computer Graphics Laboratory

C217.1	Apply line& circle drawing algorithms to draw the objects.
C217.2	Apply polygon filling methods for the object.
C217.3	Apply the 2D transformations on the object.
C217.4	Implement the curve generation algorithms.
C217.5	Demonstrate the animation of any object using animation principles.

C218: Database Management System Laboratory

C218.1	Install and configure database systems.
C218.2	Analyze database models & entity relationship models
C218.3	Design and implement a database schema for a given problem-domain





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C218.4	Implement relational database systems.
C218.5	Populate and query a database using SQL DDL / DML / DCL commands.
C218.6	Design a backend database of any one organization: CASE STUDY

C219: Project Based Learning- II

C219.1	Design solution to real life problems and analyze its concerns through shared cognition.
C219.2	Apply learning by doing approach in PBL to promote lifelong learning.
C219.3	Tackle technical challenges for solving real world problems with team efforts.
C219.4	Collaborate and engage in multi-disciplinary learning environments.

C220: Code Of Conduct

C220.1	Understand the basic perception of profession, professional ethics, various moral and social issues, industrial standards, code of ethics and role of professional ethics in engineering field.
C220.2	Aware of professional rights and responsibilities of an engineer, responsibilities of an engineer for safety and risk benefit analysis.
C220.3	Understand the impact of the professional Engineering solutions in societal and Environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
C220.4	Acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives.

C221(A) : Mandatory Audit Course 4 – Japanese Module II

C221 (A).1	Have Japanese Communicative competence for primitive Social conversation in Japanese
C221 (A).2	Comprehend Grammar of Japanese Script
C221 (A).3	Translate simple sentences from Japanese to English and vice a versa
C221 (A).4	Be aware about Japanese society and people





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C222(A) : Mandatory Audit Course 4 – Language Study Japanese Module II

C222 (A).1	Have Japanese Communicative competence for primitive Social conversation in Japanese
C222(A).2	Comprehend Grammar of Japanese Script
C222 (A).3	Translate simple sentences from Japanese to English and vice a versa
C222 (A).4	Be aware about Japanese society and people

C223(A) : Mandatory Audit Course 4 – Intellectual Property Right

C223 (A).1	Have Japanese Communicative competence for primitive Social conversation in Japanese
C223 (A).2	Comprehend Grammar of Japanese Script
C223 (A).3	Translate simple sentences from Japanese to English and vice a versa
C223 (A).4	Be aware about Japanese society and people

