



BHARATI VIDYAPEETH'S COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - Computer Science and Engineering AIML

Class:- Second Year B TECH

Sem:-III

Course: Probability & Statistics (BSC-AIML301)

Course Outcomes:

Upon successful completion of this course, the student will be able to:

1. Remember the basic concepts of statistics.
2. Describe the statistical data numerically by using Lines of regression and Curve fittings.
3. Solve basic problems in probability theory, including problems involving the binomial, Poisson, and normal distributions.
4. Apply the knowledge to test the correlation, to test hypothesis, to do sample tests.
5. Define fuzzy sets and represent these sets by membership functions, convexity, Normality, support, etc.
6. Solve assignment problems by using different techniques of operation research



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Name of Department: - Computer Science and Engineering AIML

Class:-Second Year B.TECH

Sem:-III

Course: - Discrete Mathematical Structures (PCC-AIML302)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Apply logic concepts in designing a program.
2. Illustrate basic set concepts & apply operations on set.
3. Minimize the Boolean Function.
4. Apply basic concepts of probability to solve real world problem.
5. Represent data structures using graph concepts.
6. Design abstract machine, detect deadlocks.



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Name of Department: - Computer Science and Engineering AIML

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Sem:-III

Course: - Data Structures (PCC-AIML303)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Articulate the principles of procedure oriented problem solving and programming.
2. Identify the appropriate data structure for specific application.
3. Able to formulate problems and implement algorithms related with different data structure in C.
4. Chose appropriate sorting and searching algorithms.



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Name of Department: - Computer Science and Engineering AIML

Class:-Second Year B TECH

Sem:-III

Course: - Computer Networks (PCC-AIML304)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Demonstrate concepts of Computer Networks.
2. Explain OSI and TCP/IP layer architecture
3. Implement network and data link layer.
4. Demonstrate TCP protocol in detail.
5. To analyze the protocol structure using network analyzing tools.
6. Apply the principals of socket programming in the networks.



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Sem:-III

Course:- Computer Organization and Architecture (PCC-AIML305)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Recapitulate the history of computer system and the basic concepts of computer architecture and organization
2. Understand the concept of I/O organization
3. Apply the different algorithms to perform arithmetic operations
4. Articulate the design issues in the development of processor
5. Conceptualize instruction level parallelism
6. Understand the concept of memory techniques



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Class:-Second Year B TECH

Sem:-III

Course: Programming Fundamentals using C++ (PCC-AIML306)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Differentiate object-oriented programming and procedural programming
2. Use the characteristics of an object-oriented programming language in a program.
3. Construct the basic object-oriented design principles in computer problem-solving.
4. Implement the basic principles of software engineering in managing complex software project.
5. Write programs with advanced features of the C++ programming language.
6. Develop programs in the LINUX programming environment..



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Name of Department :- Computer Science and Engineering AIML

Class:-Second Year B TECH

Sem:-III

Course: - SOFT SKILLS (HM-AIML307)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Effectively use skills to communicate clearly and improve listening and writing skills.
2. Make use of techniques for self-awareness and self-development.
3. Understand the importance of teamwork and group discussion skills.
4. Apply time management and stress management skills.
5. Apply professional skills and ethics effectively being an Engineer..



BHARATI VIDYAPEETH'S COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - Computer Science and Engineering AIML

Class:-Second Year

Sem:- IV

Course: - Automata Theory (PCC-AIML-401)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Understand basic concepts of Regular Language and Regular Expressions
2. Select appropriate abstract machine to recognize a given formal language.
3. Generate complex languages by applying Union, Intersection, Complement Concatenation Kleene * operations on simple languages.
4. Apply parsing concepts for syntax analysis.
5. Be familiar with thinking analytically and intuitively for problem solving situations in the areas of theory in computer science.



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Name of Department :- Computer Science and Engineering AIML

Class:-Second Year B TECH

Sem:- IV

Course: . Fundamentals of AI (PCC-AIML402)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Identify AI problems and their features.
2. Use predicate calculus and propositional logic for knowledge representation. Describe the statistical
3. Data numerically by using correlation, regression and curve fittings.
4. Use heuristics in search based problems.
5. Use semantic networks, conceptual dependencies scripts and frames for information representation..



BHARATI VIDYAPEETH'S COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department :- Computer Science and Engineering AIML

Class:-Second Year B TECH

Sem:- IV

Course:- Advanced Computer Graphics (PCC-AIML403)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Understand 2D & 3D Transformation techniques
2. Implement Bresenham's line and circle drawing algorithms
3. Implement windowing & clipping
4. Implement Bezier curves
5. Understand Computer Animation
6. Understand illumination models and surface rendering methods.



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Sem:- IV

Course:- Operating System (PCC-AIML-404)

Course Outcomes:

1. Understand the structure, functions and services of an operating system.
2. Describe the methods of process management, process synchronization and deadlocks.
3. Demonstrate the various memory management and I/O management techniques in effective execution of programs.
4. Analyze the process scheduling, memory management and I/O management techniques.



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Sem:- IV

Course: - Software Engineering (PCC-AIML-405)

Course Outcomes:

Upon successful completion of this course, the student will be able to –

1. Comprehend systematic methodologies of SDLC (Software Development Life Cycle)
2. Discriminate competing and feasible system requirements indicating correct real world problem scope and prepare stepwise system conceptual model using stakeholder analysis and requirement validation.
3. Prepare SRS document for a project
4. Apply software design and development techniques
5. Develop a quality software project through effective team-building, planning, scheduling and risk
6. Understand testing methods at each phase of SDLC.



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Sem:-IV

Course:- Python Programming (PCC-AIML406)

Course Outcomes:

After the completion of this course, a successful student will be able to do the following:

1. Summarize the basic concepts in python
2. Identify the data structures to solve a problem
3. Demonstrate the use of Object Oriented concepts in problem solving
4. Apply Python concepts in web application.
5. Use networking and multithreading concepts to solve a problem



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Sem:-IV

Course:- Mini Project (PW-AIML407)

After the completion of this course, a successful student will be able to do the following:

Course Outcomes:

1. Define the problem statement.
2. Organize, Plan and prepare the detailed project activities.
3. Construct Flowchart, System Architecture based on the project description
4. Implement the solution for their problem.
5. Understand testing methods at each phase of SDLC



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Sem:-IV

Course:- Environmental Studies (MC-AIML408)

After the completion of this course, a successful student will be able to do the following:

Course Outcomes:

1. Get acquainted with the scope and multidisciplinary nature of environmental science with the overall aim of sustainable development.
2. Understand the importance of ecosystems in the view of its conservation.
3. Know the values of natural resources with associated problems for sustainable lifestyles.
4. Familiarize the basics of Biodiversity and concerned issues in the context of Western Ghats.
5. Make aware of the pollution issues with its mitigation measures.
6. Understand the social issues accompanied by environmental issues in the light of role of Indian culture and movements in conservation of the environment.
7. Recognize the significance of policies and legislation in environmental protection.
8. Acquire problem solving attitude through actual experiential learning in the form of field work and projects



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Class:-Third Year B Tech

Sem:- V

Course:- Internet of Things (PCC-AIML501)

Course Outcomes:

Upon successful completion of this course, the students will be able to -

1. Understand basic concepts of IoT
2. Describe fundamental mechanisms of Internet of Things
3. Learn and implement RFID technology in various applications
4. Write programs for basic applications using raspberry pi
5. Understand and implement different communication technologies in IoT systems
6. Analyze the components needed to prototyping of various IoT application



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Class:-Third Year B Tech

Sem:- V

Course:- Computer Algorithm (PCC-AIML502)

Course Outcomes:

Upon successful completion of this course, the students will be able to -

1. Understand and demonstrate algorithm design methods with analysis.
2. Analyze algorithm space and time complexity by using recurrence relation
3. Devise algorithm for given problem statement using various methods
4. Create solution using search and traversal techniques
5. Categorize the problem to determine polynomial and non-polynomial based on its nature
6. Understand and demonstrate basic concepts of parallel algorithms



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Class:-Third Year B Tech

Course:- Cloud Computing (PCC-AIML503)

Sem -V

Upon successful completion of this course, the students will be able to -

Course Outcomes

1. Understand the concepts of cloud computing
2. Illustrate architecture and programming in cloud
3. Study the virtualization of cloud computing services
4. Illustrate Data-Intensive Computations in Cloud Computing
5. To evaluate in-depth analysis of Service in Cloud Computing capabilities
6. Define the platforms for development of cloud applications



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Class:- Third Year B Tech

Course Name: Project Management (PCC-AIML504)

Sem:-V

Upon successful completion of this course, the students will be able to –

Course Outcomes:

1. Understand project characteristics and various stages of a project
2. Understand the conceptual clarity about project organization and feasibility analyses
3. Analyze the learning and understand techniques for Project planning, project risk, scheduling and Execution
4. Resolve IT related crises using project management
5. Manage the phases and infrastructure people of IT projects
6. Understand risk monitoring and control



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Sem:-V

Course Name: Information Security (OEC-AIML505)

Upon successful completion of this course, the students will be able to –

Course Outcomes:

1. Learn classical encryption techniques
2. Understand principles of Crypto-systems
3. Compare and analyze various security services and mechanisms
4. Apply and use the features of PGP, S/MIME, DSA, IPSec, SSL in their profession
5. Take precautions of their personal computing system from possible threats and attacks
6. Explore newer vulnerabilities and provide the solutions to them



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Class:- Third Year B Tech

Sem:-V

Course:- E-Commerce & Digital Marketing (OEC-AIML505)

Upon successful completion of this course, the students will be able to -

Course Outcomes

1. Identify the importance of the e-commerce and digital marketing for business success
2. Learn basics of B2C, B2B with process model
3. Create a digital marketing plan, starting from the SWOT analysis and defining a target group
4. Identifying digital channels, business tools used in social networking
5. Create E-business web site and E-commerce website
6. Demonstrate the optimization of web site using business tools



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Sem:-V

Course:- . Java Programming (PCC-AIML506)

Upon successful completion of this course, the students will be able to -

Course Outcomes

1. Articulate the principle of object-oriented problem solving & programming
2. Illustrate code reusability, security and abstraction using inheritance, package and interface
3. Develop reliable and user-friendly applications using exception handling and file handling
4. Create desktop apps using SWING and event handling
5. Use and also illustrate multithreading concepts & collection framework
6. Apply network programming concept & will be able to use JDBC for database connectivity



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Class: Third Year B Tech

SEM:V

Course: Business English (HM-
AIML507

Upon successful completion of this course, the students will be able to -

Course Outcomes (COs)

1. Learn to communicate with others in practical, business oriented situations
2. Learn to express themselves in English with greater fluency, accuracy and confidence
3. Learn to handle themselves in English in a variety of business contexts, from negotiating, to using the telephone, to making presentations, to socializing
4. Enhance the skills of listening, speaking, pronunciation skills, as well as business vocabulary
5. Acquire the communicative competencies crucial for appropriate work place behavior



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Class:- Third Year B Tech

Sem:-VI

Course:- . Introduction to Machine Learning (PCC-AIML601)

Upon successful completion of this course, the students will be able to -

Course Outcomes

1. Explain Machine Learning concepts
2. Analyze the Machine Learning model
3. Design solution using Classification and Decision trees algorithm
4. Explain supervised machine learning algorithm for classification problems
5. Describe unsupervised learning techniques
6. Explain neural network useful for machine learning.



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Sem:-VI

Course:- Feature Engineering (PCC-AIML602)

Course Outcomes

Upon Completion of this course, students will be able to-

1. Explain basics of feature engineering
2. Explain representation and generation of feature engineering
3. Describe Features of Text and Categorical Data
4. Explain Feature Selection
5. Explain Feature Transformations
6. Explain Feature Learning



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Class:- Third Year B Tech

Sem:-VI

Course:- Database Engineering (PCC - AIML603)

Upon successful completion of this course, the students will be able to -

Course Outcomes

1. Understand fundamental concepts of database systems and E-R Diagrams
2. Study and apply SQL queries to manage database
3. Analyze & construct good database design
4. Know data storage and indexing technique
5. Understand transaction concepts and concurrency control techniques
6. Learn concept of failures in database, appropriate recovery and security techniques



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Sem:- VI

Course:- System Programming and Compiler Construction (PCC-AIML604)

Upon successful completion of this course, the students will be able to -

Course Outcomes

On completion of the course, student will be able to

1. Understand the basics of system programs, Assemblers, Macros, Linkers, Loaders.
2. Understand the basics of system programs like editors, compiler, assembler, linker, loader, interpreter and debugger.
3. Understand the compiler phases and compiler construction tools
4. Understand Lexical analysis and various parsing techniques.
5. Apply Syntax directed translations and Syntax Directed definitions to generate intermediate code.
6. Understand code optimizing techniques



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Sem:- VI

Course: Cyber Security (OEC - AIML606)

Upon successful completion of this course, the students will be able to -

Course Outcomes

On completion of the course, student will be able to-

1. Explain the cyber security concepts.
2. Describe the cyber security vulnerabilities and prevention techniques.
3. Explain the different rules and regulations under I.T.ACT.
4. Explain the concepts of digital forensiAIML & incident management tools.



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Sem:- VI

Course: Human Computer Interaction (OEC-AIML605)

Course Outcomes

On completion of the course, student will be able to-

1. Explain the capabilities of both humans and computers from the viewpoint of human information processing
2. Explain principles of User Interface
3. Apply an interactive design process and universal design principles for designing HCI systems
4. Describe and use HCI design principles, standards and guidelines
5. Apply windows based UI interfaces
6. Analyze and identify user models, user support, socio-organizational issues and stakeholder
7. requirement of HCI systems.



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Sem:- VI

Course: R Programming (PCC-AIML606)

Course Outcomes

On completion of the course, student will be able to-

1. Write more efficient code using parallel R and vectorization
2. Create artful graphs to visualize complex data sets and functions
3. Find new packages for text analysis, image manipulation, and perform statistical analysis of the same
4. Interface R with C/C++ and Python for increased speed or functionality
5. Develop interfacing of R to other Language
6. Understand Correlation, Regression and implement important statistical terminologies using R



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Sem:- VI

Course: Domain Specific Mini-project (PW - AIML608)

Course Outcomes

On completion of the course, student will be able to-

1. To identify and analyze the problem in detail to define its scope with problem specific data
2. To know various techniques to be implemented for selected problem
3. To analyze the problem and prepare SRS and design document
4. To write code and carry out testing
5. To write a report covering details of the project and give presentation on a project
6. To include professional and ethical behavior.