<h1 style="text-align:center">Bharati Vidyapeeth's
College of Engineering, Lavale, Pune
Department of Computer Engineering</h1>

Course Outcomes (TE Computer2015 Pattern)

Semester V

310241: Theory of Computation

CO1	To design deterministic Turing machine for all inputs and all outputs.
CO2	To subdivide problem space based on input subdivision using constraints.
CO3	To apply linguistic theory.

310242: Database Management Systems

CO1	Design E-R Model for given requirements and convert the same into database tables.
CO2	Use database techniques such as SQL & PL/SQL.
CO3	Use modern database techniques such as NOSQL.
CO4	Explain transaction Management in relational
CO5	Describe different database architecture and analyses the use of appropriate architecture in real time environment.
CO6	Students will be able to use advanced database Programming concepts Big Data – HADOOP.

310243: Software Engineering and Project Management

CO1	Decide on a process model for a developing a software project.
CO2	Classify software applications and Identify unique features of various domains.
CO3	Design test cases of a software system.
CO4	Understand basics of IT Project management.
CO5	Plan, schedule and execute a project considering the risk management.
CO6	Apply quality attributes in software development life cycle.

310244: Information Systems and Engineering Economics

CO1	Understand the need, usage and importance of an Information System to an organization.
CO2	Understand the activities that are undertaken while managing, designing, planning, implementation, and deployment of computerized information system in an organization.
CO3	Further the student would be aware of various Information System solutions like ERP, CRM, Data warehouses and the issues in successful implementation of these technology solutions in any organizations.
CO4	Outline the past history, present position and expected performance of a company engaged in engineering practice or in the computer industry.
CO5	Perform and evaluate present worth, future worth and annual worth analyses on one of more economic alternatives.
CO6	To carry out and evaluate benefit/cost, life cycle and breakeven analyses on one or more economic alternatives.

310245: Computer Networks

CO1	Analyze the requirements for a given organizational structure to select the most appropriate

CO2	Demonstrate design issues, flow control and error control.
CO3	Analyze data flow between TCP/IP model using Application, Transport and Network Layer Protocols.
CO4	Illustrate applications of Computer Network capabilities, selection and usage for various sectors of user community.
CO5	Illustrate Client-Server architectures and prototypes by the means of correct standards and technology.
CO6	Demonstrate different routing and switching algorithms.

310246: Skill Development Lab

CO1	Evaluate problems and analyze data using current technologies in a wide variety of business and organizational contexts.
CO2	Create data-driven web applications
CO3	Incorporate best practices for building applications
CO4	Employ Integrated Development Environment(IDE) for implementing and testing of software solution
CO5	Construct software solutions by evaluating alternate architectural patterns

310247:Database Management System Lab

| **CO1** | Develop the ability to handle databases of varying complexities |
| **CO2** | Use advanced database Programming concepts |

310248: Computer Networks Lab

CO1	Demonstrate LAN and WAN protocol behavior using Modern Tools.
CO2	Analyze data flow between peer to peer in an IP network using Application, Transport and Network Layer Protocols.
CO3	Demonstrate basic configuration of switches and routers.
CO4	Develop Client-Server architectures and prototypes by the means of correct standards and technology.

310249: Audit Course 3

AC3 – I: Cyber Security

CO1	Compare the interrelationships among security roles and responsibilities in a modern information-driven enterprise—to include interrelationships across security do mains (IT, physical, classification, personnel, and so on)
CO2	Assess the role of strategy and policy in determining the success of information security;
CO3	Estimate the possible consequences of misaligning enterprise strategy, security policy, and security plans.

AC3 – II: Professional Ethics and Etiquettes

CO1	understand the basic perception of profession, professional ethics, various moral issues & uses of ethical theories
CO2	Understand various social issues, industrial standards, code of ethics and role of professional ethics in engineering field.
CO3	Follow Ethics as an engineering professional and adopt good standards & norms of engineering practice.
CO4	apply ethical principles to resolve situations that arise in their professional lives

AC3 – III: Emotional Intelligence
CO1	Expand your knowledge of emotional patterns in yourself and others
CO2	Discover how you can manage your emotions, and positively influence yourself and others
CO3	Build more effective relationships with people at work and at home
CO4	Positively influence and motivate colleagues, team members, managers
CO5	Increase your leadership effectiveness by creating an atmosphere that engages others
CO6	EI behaviors and supports high performance

AC3 – IV: MOOC-learn New Skill
CO1	learner will acquire additional knowledge and skill.

AC3 – V: Foreign Language(Japanese Module 3)
CO1	Have ability of basic communication.
CO2	Have the knowledge of Japanese script.
CO3	Get introduced to reading, writing and listening skills for language Japanese.
CO4	Develop interest to pursue professional Japanese Language course

Semester VI

310250: Design and Analysis of Algorithms
CO1	Formulate the problem.
CO2	To perform analysis of Algorithms with Time and Space Complexity.
CO3	Analyze the asymptotic performance of algorithms.
CO4	Decide and apply algorithmic strategies to solve given problem.
CO5	Find optimal solution by applying various methods.

310251: Systems Programming and Operating System
CO1	Analyze and synthesize system software
CO2	Use tools like LEX & YACC.
CO3	Implement operating system functions.

310252: Embedded Systems and Internet of Things
CO1	Implement an architectural design for IoT for specified requirement.
CO2	To solve the given societal challenge using IoT.
CO3	Choose between available technologies and devices for stated IoT challenge.

310253: Software Modeling and Design
CO1	Analyze the problem statement (SRS) and choose proper design technique for designing web-based/ desktop application.
CO2	Design and analyze an application using UML modeling as fundamental tool.
CO3	Apply design patterns to understand reusability in OO design.
CO4	Decide and apply appropriate modern tool for designing and modeling.
CO5	Decide and apply appropriate modern testing tool for testing web-based/desktop application.

310254: Web Technology
CO1	To analyze given assignment to select sustainable web development design methodology.
CO2	To develop web based application using suitable client side and server side web technologies.

CO3 To develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management.

310255: Seminar and Technical Communication

CO1 To be familiar with basic technical writing concepts and terms, such as audience analysis, jargon, format, visuals, and presentation.

CO2 To improve skills to read, understand, and interpret material on technology.

CO3 Improve communication and writing skills.

310256: Web Technology Lab

CO1 develop web based application using suitable client side and server side web technologies

CO2 develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management

310257: System Programming &Operating System Lab

CO1 Understand the internals of language translators

CO2 Handle tools like LEX & YACC.

CO3
Understand the Operating System internals and functionalities with implementation point of view

310258: Embedded Systems & Internet of Things Lab

CO1 Design the minimum system for sensor based application

CO2 Solve the problems related to the primitive needs using IoT

CO3 Develop full fledged IoT application for distributed environment

310259: Audit Course 4

AC4- I Digital and Social Media Marketing

CO1 Create editorial calendars to manage content distribution.

CO2 Use Social Listening tools to create timely, relevant content.

CO3 Create Social Media policies that combine business objectives with appropriate use of social media channels and content.

AC4-II Green Computing

CO1 Understand the concept of green IT and relate it to sustainable development.

CO2 Apply the green computing practices to save energy.

CO3
Discuss how the choice of hardware and software can facilitate a more sustainable operation,

CO4 Use methods and tools to measure energy consumption

AC4-III Sustainable Energy Systems

CO1 To demonstrate an overview of the main sources of renewable energy.

CO2 To understand benefits of renewable and sustainable energy systems.

AC4-IV Leadership and Personality Development

CO1 Enhanced holistic development of students and improve their employability skills

AC4 – V: Foreign Language(Japanese Module 4)

CO1 Have ability of basic communication.

CO2 Have the knowledge of Japanese script.

CO3 Get introduced to reading, writing and listening skills for language Japanese.

| **CO4** | Develop interest to pursue professional Japanese Language course |