



**Bharati Vidyapeeth's**  
**College of Engineering Lavale, Pune-412115**  
**Department of Computer Engineering**

**Course Outcomes (SE 2015 Pattern)**

**Semester III**

**210241: Discrete Mathematics**

1. Solve real world problems logically using appropriate set, function, and relation models and interpret the associated operations and terminologies in context.
2. Analyze and synthesize the real world problems using discrete mathematics.

**210242: Digital Electronics & Logic Design**

1. Realize and simplify Boolean Algebraic assignments for designing digital circuits using K-Maps.
2. Design and implement Sequential and Combinational digital circuits as per the specifications.
3. Apply the knowledge to appropriate IC as per the design specifications.
4. Design simple digital systems using VHDL.
5. Develop simple embedded system for simple real world application.

**210243: Data Structures and Algorithms**

1. To discriminate the usage of various structures in approaching the problem solution.
2. To design the algorithms to solve the programming problems.
3. To use effective and efficient data structures in solving various Computer Engineering domain problems.
4. To analyze the problems to apply suitable algorithm and data structure.
5. To use appropriate algorithmic strategy for better efficiency.

**210244: Computer Organization and Architecture**

1. Demonstrate computer architecture concepts related to design of modern processors, memories and I/Os.
2. Analyze the principles of computer architecture using examples drawn from commercially available computers.
3. Evaluate various design alternatives in processor organization.

**210245: Object Oriented Programming**

1. Analyze the strengths of object oriented programming.
2. Design and apply OOP principles for effective programming.
3. Develop programming application using object oriented programming language C++
4. Percept the utility and applicability of OOP.

**210249: Soft Skills**

1. Effectively communicate through verbal/oral communication and improve the listening skills
2. Write precise briefs or reports and technical documents.
3. Actively participate in group discussion / meetings / interviews and prepare & deliver presentations.

4. Become more effective individual through goal/target setting, self motivation and practicing creative thinking.
5. Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter personal relationships, conflict management and leadership quality.

### **210250 Audit Course 1**

#### **AC1-II: Humanities and Social Sciences**

1. Making engineering and technology students aware of the various issues concerning man and society.
2. These issues will help to sensitize students to be broader towards the social, cultural, economic and human issues, involved in social changes .
3. Able to understand the nature of the individual and the relationship between the self and the community
4. Understanding major ideas, values, beliefs, and experiences that have shaped human history and cultures.

#### **AC1-III: Environmental Studies**

1. Comprehend the importance of ecosystem and biodiversity
2. To correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and prevention
3. Identify different types of environmental pollution and control measures
4. To correlate the exploitation and utilization of conventional and non-conventional resources

#### **AC1-IV: Smart Cities**

1. Better understanding of the dynamic behavior of the urban system by going beyond the physical appearance and by focusing on representations, properties and impact factors.
2. Exploration of the city as the most complex human-made organism with a metabolism that can be modeled in terms of stocks and flows .
3. Knowledge about data-informed approaches for the development of the future city, based on crowd sourcing and sensing.
4. Knowledge about the latest research results in for the development and management of future cities .
5. Understanding how citizens can benefit from data-informed design to develop smart and responsive cities.

#### **AC1-V: Foreign Language- Japanese (Module 1)**

1. To have ability of basic communication.
2. To have the knowledge of Japanese script.
3. To get introduced to reading , writing and listening skills
4. To develop interest to pursue professional Japanese Language course.

### **Semester IV**

#### **207003: Engineering Mathematics III**

1. Solve higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits.
2. Solve problems related to Fourier transform, Z-Transform and applications to Signal and Image processing.
3. Apply statistical methods like correlation, regression analysis and probability theory for analysis and prediction of a given data as applied to machine intelligence.
4. Perform vector differentiation and integration to analyze the vector fields and apply to compute line, surface and volume integrals.

5. Analyze conformal mappings, transformations and perform contour integration of complex functions required in Image processing, Digital filters and Computer graphics.

### **210251: Computer Graphics**

1. Apply mathematics and logic to develop Computer programs for elementary graphic operations.

2. Develop scientific and strategic approach to solve complex problems in the domain of Computer Graphics.

3. Develop the competency to understand the concepts related to Computer Vision and Virtual reality.

4. Apply the logic to develop animation and gaming programs.

### **210252: Advanced Data Structures**

1. To apply appropriate advanced data structure and efficient algorithms to approach the problems of various domain.

2. To design the algorithms to solve the programming problems.

3. To use effective and efficient data structures in solving various Computer Engineering domain problems.

4. To analyze the algorithmic solutions for resource requirements and optimization.

5. To use appropriate modern tools to understand and analyze the functionalities confined to the data structure usage.

### **210253: Microprocessor**

1. To apply the assembly language programming to develop small real life embedded application.

2. To understand the architecture of the advanced processor thoroughly to use the resources for programming.

3. To understand the higher processor architectures descended from 80386 architecture.

### **210254: Principles of Programming Languages**

1. To analyze the strengths and weaknesses of programming languages for effective and efficient program development.

2. To inculcate the principles underlying the programming languages enabling to learn new programming languages.

3. To grasp different programming paradigms.

4. To use the programming paradigms effectively in application development.

### **210258: Audit Course 2**

#### **AC2-I: Water Management**

1. Understanding of the global water cycle and its various processes.

2. Understanding of climate change and their effects on water systems .

3. Understanding of Drinking treatment and quality of groundwater and surface water .

4. Understanding of the Physical, chemical, and biological processes involved in water treatment and distribution.

#### **AC2-II: Intellectual Property Rights and Patents**

1. Understand the fundamental legal principles related to confidential information, copyright, patents, designs, trademarks and unfair competition.

2. Identify, apply and assess principles of law relating to each of these areas of intellectual property.

3. Apply the appropriate ownership rules to intellectual property you have been involved in creating.

**AC2-III : The Science of Happiness**

1. Ability to understand what happiness is and why it matters to you.
2. Ability to learn how to increase your own happiness.
3. Understanding of the power of social connections and the science of empathy.
4. Ability to understand what is mindfulness and its real world applications.

**AC2-IV: Stress Relief: Yoga and Meditation**

1. Students understanding of philosophy and religion as well as daily life issues will be challenged and enhanced.
2. Enhances the immune system.
3. Intellectual and philosophical understanding of the theory of yoga and basic related Hindu scriptures will be developed.
4. Powers of concentration, focus, and awareness will be heightened.

**AC2-V: Foreign Language ( Japanese) Module 2**

1. To have ability of basic communication.
2. To have the knowledge of Japanese script.
3. To get introduced to reading, writing and listening skills for language Japanese.
4. To develop interest to pursue professional Japanese Language course.