



**Savitribai Phule Pune University**  
**Bachelor of Computer Engineering**  
**Program Outcomes (POs)**

**Learners are expected to know and be able to–**

<b>PO1</b>	<b>Engineering knowledge</b>	Apply the knowledge of mathematics, science, Engineering fundamentals, and an Engineering specialization to the solution of complex Engineering problems.
<b>PO2</b>	<b>Problem analysis</b>	Identify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics natural sciences, and Engineering sciences.
<b>PO3</b>	<b>Design / Development of Solutions</b>	Design solutions for complex Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and Environmental considerations.
<b>PO4</b>	<b>Conduct Investigations of Complex Problems</b>	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
<b>PO5</b>	<b>Modern Tool Usage</b>	Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modeling to complex Engineering activities with an understanding of the limitations.
<b>PO6</b>	<b>The Engineer and Society</b>	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
<b>PO7</b>	<b>Environment and Sustainability</b>	Understand the impact of the professional Engineering solutions in societal and Environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
<b>PO8</b>	<b>Ethics</b>	Apply ethical principles and commit to professional ethics and responsibilities and norms of the Engineering practice.
<b>PO9</b>	<b>Individual and Team Work</b>	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
<b>PO10</b>	<b>Communication Skills</b>	Communicate effectively on complex Engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
<b>PO11</b>	<b>Project Management and Finance</b>	Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary Environments.
<b>PO12</b>	<b>Life-long Learning</b>	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes (PSO)**

<b>PSO1</b>	<b>Professional Skills-</b> The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying complexities.
<b>PSO2</b>	<b>Problem-Solving Skills-</b> The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.
<b>PSO3</b>	<b>Successful Career and Entrepreneurship-</b> The ability to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.



<b>Savitribai Phule Pune University</b> <b>Fourth Year of Computer Engineering (2019 Course)</b> <b>410246: Laboratory Practice III</b>		
<b>Teaching Scheme:</b> <b>Practical: 04</b> <b>Hours/Week</b>	<b>Credit</b> <b>02</b>	<b>Examination Scheme:</b> <b>Term work: 50 Marks</b> <b>Practical: 50 Marks</b>
<b>Companion Course:</b> Design and Analysis of Algorithms (410241), Machine Learning(410242), Blockchain Technology(410243)		
<b>Course Objectives:</b> <ul style="list-style-type: none"> <li>● Learn effect of data preprocessing on the performance of machine learning algorithms</li> <li>● Develop in depth understanding for implementation of the regression models.</li> <li>● Implement and evaluate supervised and unsupervised machine learning algorithms.</li> <li>● Analyze performance of an algorithm.</li> <li>● Learn how to implement algorithms that follow algorithm design strategies namely divide and conquer, greedy, dynamic programming, backtracking, branch and bound.</li> <li>● Understand and explore the working of Blockchain technology and its applications.</li> </ul>		
<b>Course Outcomes:</b> After completion of the course, students will be able to CO1: Apply preprocessing techniques on datasets. CO2: Implement and evaluate linear regression and random forest regression models. CO3: Apply and evaluate classification and clustering techniques. CO4: Analyze performance of an algorithm. CO5: Implement an algorithm that follows one of the following algorithm design strategies: divide and conquer, greedy, dynamic programming, backtracking, branch and bound. CO6: Interpret the basic concepts in Blockchain technology and its applications		