

CRITERION 3	Course Outcomes and Program Outcomes	175
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### 3.1. Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (25)

#### 3.1.1 Engineering Graduates will be able to (Program Outcomes (POs)):

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** 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.
4. **Conduct investigations of complex problems:** 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.
5. **Modern tool usage:** 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.
6. **The engineer and society:** 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.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** 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.

**11. Project management and finance:** 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.

**12. Life-long learning:** 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.

### 3.1.2 Program Specific Outcomes

**PSO1:** To empower the students to understand the basic concepts of mechanical engineering. In addition to this, application of theoretical and practical skills to solve complex mechanical engineering problems with the use of advanced software tools to arrive at appropriate and cost effective solutions.

**POS2:** To develop entrepreneurship skills compatible with industrial readiness and can pursue higher studies in Mechanical Engineering or interdisciplinary programs with the concern for sustainable development of society and high regard of ethical values.

### 3.1.3 Course Outcome:

#### **ME 252 A: Foundry and Welding Engineering**

CO1: Study of casting process and its parameters.

CO2: Understand, classify and distinguish various casting processes.

CO3: Develop concepts for casting techniques used in specific applications.

CO4: Understand, classify and distinguish different welding processes.

CO5: To learn testing of welded joints and application of welding

#### **ME 303 A: Industrial Organization and Management**

CO1: Understand, classify and distinguish different type of organizations.

CO2: Develop concepts about different type of theories used in scientific management.