ODD SEM

2023-24

| SHRIDEVI | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY<br>SIRA ROAD, TUMKUR- 572 106. |
|---|---|

## DEPARTMENT OF ME

| SUBJECT | CONTROL ENGINEERING | SUBJECT CODE | 18ME71 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Identify the control system and its types , control actions |
| CO2 | Construct the system governing equations for physical models(Electrical, Thermal, Mechanical, Electro Mechanical |
| CO3 | Analyze the gain of the system using block diagram and signal flow graph |
| CO4 | Evaluate the stability of Control system in complex domain and frequency domain |
| CO5 | Employ state equations to study the Bode's plot |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | K P CHANDRAIAH | | | | | | | | | | | |
| BRANCH | ME | | | ACADEMIC YEAR | | | 2023-24 | | | | | |
| COURSE | B.E | SEMESTER | VII | SECTION | | | | | | | | |
| SUBJECT | CONTROL ENGINEERING | | | | | SUBJECT CODE | 18ME71 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | | | | | | | | | | | |
| CO2 | 2 | 2 | 1 | | | | | | | | | |
| CO3 | 2 | 2 | | | | | | | | | | |
| CO4 | 2 | 2 | 1 | | | | | | | | | |
| CO5 | 1 | 2 | 1 | | | | | | | | | |
| AVERAGE | 1.8 | 2 | 1 | | | | | | | | | |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 1.6 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 58.9 | 1.17 | | | | | | | | | | | |
| CO2 | 75.6 | 1.51 | 1.51 | 0.75 | | | | | | | | | |
| CO3 | 60.6 | 1.21 | 1.21 | | | | | | | | | | |
| CO4 | 66.8 | 1.33 | 1.33 | 0.66 | | | | | | | | | |
| CO5 | 57.7 | 0.57 | 1.15 | 0.57 | | | | | | | | | |
| AVERAGE | 63.92 | 1.15 | 1.04 | 0.66 | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 0.75 |

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## DEPARTMENT OF ME

| SUBJECT | COMPUTER AIDED DESIGN AND MANUFACTURING | SUBJECT CODE | 18ME72 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Define automation, CIM,CAD,CAM & explain differences between these concepts. Solve simple problems of transformations of entities on computer screen |
| **CO2** | Explain the basics of automated manufacturing industries through mathematical models and analyze different types of automated flow lines |
| **CO3** | Analyze the automated flowlines to reduce time and enhance productivity |
| **CO4** | Explain the use of different computer applications in manufacturing and able to prepare part program for simple jobs on CNC and Robot Programming |
| **CO5** | Visualize and appreciate the modern trends in manufacturing like additive manufacturing industry 4.0 and applications of IOT leading to smart manufacturing. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | RAVI KUMAR K R | | | | | | | | | | | |
| BRANCH | ME | | ACADEMIC YEAR | | 2023-24 | | | | | | | |
| COURSE | B.E | SEMESTER | VII | SECTION | | | | | | | | |
| SUBJECT | COMPUTER AIDED DESIGN AND MANUFACTURING | | | SUBJECT CODE | 18ME72 | | | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 3 | 2 | | | | | | | | | | |
| CO2 | 3 | 2 | | | | | | | | | | |
| CO3 | 3 | 2 | | | | | | | | | | |
| CO4 | 3 | 2 | | | | | | | | | | |
| CO5 | 3 | 2 | | | | | | | | | | |
| AVERAGE | 3 | 2 | | | | | | | | | | |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.5 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 62.26 | 1.86 | 1.24 | | | | | | | | | | |
| CO2 | 65.69 | 1.97 | 1.31 | | | | | | | | | | |
| CO3 | 49.10 | 1.47 | 0.98 | | | | | | | | | | |
| CO4 | 63.34 | 1.90 | 1.26 | | | | | | | | | | |
| CO5 | 48.48 | 1.45 | 0.96 | | | | | | | | | | |
| AVERAGE | 57.77 | 1.73 | 1.15 | | | | | | | | | | |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.44 |

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## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ME

| SUBJECT | TOTAL QUALITY MANAGEMENT | SUBJECT CODE | 18ME734 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Explain the various approaches of TQM |
| **CO2** | Infer the customer perception of quality |
| **CO3** | Analyze customer needs and perception to design feed back systems |
| **CO4** | Apply statistical tools for continuous improvement of systems |
| **CO5** | Apply the tools and technology for effective improvement of TQM |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

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**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

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**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | AJAY HIREMATH | | | | | | | | | | | |
| BRANCH | ME | | ACADEMIC YEAR | | 2023-24 | | | | | | | |
| COURSE | B.E | SEMESTER | VII | SECTION | - | | | | | | | |
| SUBJECT | TOTAL QUALITY MANAGEMENT | | | SUBJECT CODE | 18ME734 | | | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 2 | | | | | | | | | | | |
| CO2 | 2 | 2 | | | | | | | | | | |
| CO3 | 2 | 2 | | | | | | | | | | |
| CO4 | 2 | | | | | | | | | | | |
| CO5 | 2 | 2 | | | | | | | | | | |
| AVERAGE | 2 | 2 | | | | | | | | | | |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.0 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 64.15 | 1.28 | | | | | | | | | | | |
| CO2 | 76.48 | 1.52 | 1.52 | | | | | | | | | | |
| CO3 | 53.16 | 1.06 | 1.06 | | | | | | | | | | |
| CO4 | 64.61 | 1.29 | | | | | | | | | | | |
| CO5 | 56.72 | 1.13 | 1.13 | | | | | | | | | | |
| AVERAGE | 63.02 | 1.25 | 1.23 | | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.24 |

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## DEPARTMENT OF ME

| SUBJECT | PROJECT MANAGMENT | SUBJECT CODE | 18ME745 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Understand the selection, prioritization and initiation of individual projects and strategic role of project management. |
| CO2 | Understand the work breakdown structure by integrating it with organization. |
| CO3 | Understand the activities like purchasing, acquisitions, contracting, partnering and collaborations related to performing projects. |
| CO4 | Determine project progress and results through balanced scorecard approach |
| CO5 | Draw the network diagram to calculate the duration of the project and reduce it using crashing. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, Statistics and discrete mathematics), science, and engineering for solving Engineering problems And Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering Problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

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**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve Contemporary issues and acquire lifelong learning.

| NAME OF THE COLLEGE | | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY, TUMAKURU | | | |
|---|---|---|---|---|---|
| FACULTY NAME | | AJAY HIREMATH | | | |
| BRANCH | | MECHANICAL | ACADEMIC YEAR | | 2023-24 |
| COURSE | B.E | SEMESTER | VII | SECTION | - |
| SUBJECT | PROJECT MANAGMENT | | | SUBJECT CODE | 18ME745 |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 2 | | | | | | | | | | | |
| CO2 | 2 | 2 | | | | | | | | | | |
| CO3 | 2 | 2 | | | | | | | | | | |
| CO4 | 2 | | | | | | | | | | | |
| CO5 | 2 | 2 | | | | | | | | | | |
| AVERAGE | 2 | 2 | | | | | | | | | | |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.0 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 64.15 | 1.28 | | | | | | | | | | | |
| CO2 | 76.48 | 1.52 | 1.52 | | | | | | | | | | |
| CO3 | 53.16 | 1.06 | 1.06 | | | | | | | | | | |
| CO4 | 64.61 | 1.29 | | | | | | | | | | | |
| CO5 | 56.72 | 1.13 | 1.13 | | | | | | | | | | |
| AVERAGE | 63.02 | 1.25 | 1.23 | | | | | | | | | | |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 0.83 |

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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ME

| SUBJECT | ENVIRONMENTAL PROTECTION & MANAGEMENT | SUBJECT CODE | 18CV753 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Appreciate the elements of Corporate Environmental Management systems complying to international environmental management system standards. |
| **CO2** | Lead pollution prevention assessment team |
| **CO3** | implement waste minimization options. |
| **CO4** | Develop, Implement, maintain |
| **CO5** | Audit Environmental Management systems for Organizations. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, Statistics and discrete mathematics), science, and engineering for solving Engineering problems And Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering Problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

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| NAME OF THE COLLEGE | | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY, TUMAKURU | | | |
|---|---|---|---|---|---|
| FACULTY NAME | | SRILAXMI | | | |
| BRANCH | | MECHANICAL | ACADEMIC YEAR | | 2023-24 |
| COURSE | B.E | SEMESTER | VII | SECTION | - |
| SUBJECT | ENVIRONMENTAL PROTECTION & MANAGEMENT | | SUBJECT CODE | | 18CV753 |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO2 | 3 | 2 | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | - | 2 |
| CO3 | 3 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| CO4 | 3 | 2 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO5 | 3 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| AVERAGE | 3 | 1.6 | 1 | 1.2 | 1 | 1.8 | 2.2 | 1 | 1 | 1 | 1 | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 1.52 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 62 | 1.86 | 1.24 | 0.62 | 0.6 | - | 1.24 | 1.86 | 0.62 | 0.62 | 0.62 | 0.62 | 1.24 |
| CO2 | 66 | 1.98 | 1.32 | 0.66 | 1.3 | - | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | - | 1.32 |
| CO3 | 49 | 1.47 | 0.98 | 0.49 | 0.5 | 0.49 | 0.98 | 0.98 | 0.49 | 0.49 | 0.49 | 0.49 | 0.98 |
| CO4 | 63 | 1.89 | 1.26 | 0.63 | 0.6 | - | 1.26 | 1.89 | 0.63 | 0.63 | 0.63 | 0.63 | 1.26 |
| CO5 | 48 | 1.44 | 0.96 | 0.48 | 0.5 | 0.48 | 0.96 | 0.96 | 0.48 | 0.48 | 0.48 | 0.48 | 0.96 |
| AVERAGE | 57.6 | 1.73 | 1.15 | 0.58 | 0.7 | 0.49 | 1.02 | 1.27 | 0.58 | 0.58 | 0.58 | 0.56 | 1.15 |
| Final attainment level | | | | | | | | | | | | | 0.86 |

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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY
## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ME

| SUBJECT | MECHANICS OF MATERIAL | SUBJECT CODE | BME301 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Understand the concepts of stress and strain in simple and compound bars. |
| **CO2** | Explain the importance of principal stresses and principal planes & Analyse cylindrical pressure vessels under various loading. |
| **CO3** | Apply the knowledge to understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment. |
| **CO4** | Evaluate stresses induced in different cross-sectional members subjected to shear loads. |
| **CO5** | Apply basic equation of simple torsion in designing of circular shafts & Columns. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | DR. NARENDRA VISWANATH | | | | |
| BRANCH | ME | ACADEMIC YEAR | 2023-24 | | |
| COURSE | B.E | SEMESTER | III | SECTION | - |
| SUBJECT | MECHANICS OF MATERIAL | SUBJECT CODE | BME301 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | | | | | | | | | | |
| CO2 | 3 | 3 | | | | | | | | | | |
| CO3 | 3 | 2 | 3 | | | | | | | | | |
| CO4 | 3 | 3 | | | | | | | | | | |
| CO5 | 2 | 2 | 2 | | | | | | | | | |
| AVERAGE | 2.8 | 2.6 | 2.5 | | | | | | | | | |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.63 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 51.03 | 1.53 | 1.53 | | | | | | | | | | |
| CO2 | 60.08 | 1.80 | 1.80 | | | | | | | | | | |
| CO3 | 48.09 | 1.44 | 0.96 | 1.44 | | | | | | | | | |
| CO4 | 56.42 | 1.69 | 1.69 | | | | | | | | | | |
| CO5 | 42.94 | 0.84 | 0.84 | 0.84 | | | | | | | | | |
| AVERAGE | 62.53 | 1.46 | 1.36 | 1.14 | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.32 |

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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY
## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ME

| SUBJECT | MANUFACTURING PROCESS | SUBJECT CODE | BME302 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Describe the casting process and prepare different types of cast products. Acquire knowledge on Pattern, Core, Gating, Riser system and to use Jolt, Squeeze, and Sand Slinger Moulding machines. |
| **CO2** | Compare the Gas fired pit, Resistance, Coreless, Electrical and Cupola Metal Furnaces. Compare the Gravity, Pressure die, Centrifugal, Squeeze, slush and Continuous Metal mold castings. |
| **CO3** | Understand the Solidification process and Casting of Non-Ferrous Metals. |
| **CO4** | Describe the Metal Arc, TIG, MIG, Submerged and Atomic Hydrogen Welding processes etc. used in manufacturing. |
| **CO5** | Describe the methods of different joining processes and thermal effects in joining process. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | RAVI KUMAR K R | | | | |
| BRANCH | ME | ACADEMIC YEAR | 2023-24 | | |
| COURSE | B.E | SEMESTER | III | SECTION | - |
| SUBJECT | MANUFACTURING PROCESS | SUBJECT CODE | BME302 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | | | | | | | | | | |
| CO2 | 3 | 2 | | | | | | | | | | |
| CO3 | 3 | 2 | | | | | | | | | | |
| CO4 | 3 | 2 | | | | | | | | | | |
| CO5 | 3 | 2 | | | | | | | | | | |
| AVERAGE | 3 | 2 | | | | | | | | | | |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.5 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 62.26 | 1.86 | 1.24 | | | | | | | | | | |
| CO2 | 65.69 | 1.97 | 1.31 | | | | | | | | | | |
| CO3 | 49.10 | 1.47 | 0.98 | | | | | | | | | | |
| CO4 | 63.34 | 1.90 | 1.26 | | | | | | | | | | |
| CO5 | 48.48 | 1.45 | 0.96 | | | | | | | | | | |
| AVERAGE | 57.77 | 1.73 | 1.15 | | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.44 |

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|---|---|

## DEPARTMENT OF ME

| SUBJECT | MATERIAL SCIENCE & ENGINEERING | SUBJECT CODE | BME303 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Understand the atomic arrangement in crystalline materials and describe the periodic arrangement of atoms in terms of unit cell parameters. |
| CO2 | Understand the importance of phase diagrams and the phase transformations. |
| CO3 | Explain various heat treatment methods for controlling the microstructure. |
| CO4 | Correlate between material properties with component design and identify various kinds of defects |
| CO5 | Apply the method of materials selection, material data and knowledge sources for computeraided selection of materials. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | AJAY HIREMATH | | | | |
| BRANCH | ME | ACADEMIC YEAR | 2023-24 | | |
| COURSE | B.E | SEMESTER | III | SECTION | - |
| SUBJECT | MATERIAL SCIENCE & ENGINEERING | SUBJECT CODE | BME303 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 2 | | | | | | | | | | | |
| CO2 | 2 | 2 | 1 | | | | | | | | | |
| CO3 | 2 | 2 | | | | | | | | | | |
| CO4 | 2 | 2 | 1 | | | | | | | | | |
| CO5 | 1 | 2 | 1 | | | | | | | | | |
| AVERAGE | 1.8 | 2 | 1 | | | | | | | | | |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 1.6 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 58.9 | 1.17 | | | | | | | | | | | |
| CO2 | 75.6 | 1.51 | 1.51 | 0.75 | | | | | | | | | |
| CO3 | 60.6 | 1.21 | 1.21 | | | | | | | | | | |
| CO4 | 66.8 | 1.33 | 1.33 | 0.66 | | | | | | | | | |
| CO5 | 57.7 | 0.57 | 1.15 | 0.57 | | | | | | | | | |
| AVERAGE | 63.92 | 1.15 | 1.04 | 0.66 | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 0.75 |

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|---|---|

## DEPARTMENT OF ME

| SUBJECT | BASIC THERMODYNAMICS | SUBJECT CODE | BME304 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Understand the concepts of stress and strain in simple and compound bars. |
| **CO2** | Explain the importance of principal stresses and principal planes & Analyse cylindrical pressure vessels under various loading. |
| **CO3** | Apply the knowledge to understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment. |
| **CO4** | Evaluate stresses induced in different cross-sectional members subjected to shear loads. |
| **CO5** | Apply basic equation of simple torsion in designing of circular shafts & Columns. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | PROF THARA | | | | |
| BRANCH | ME | ACADEMIC YEAR | 2023-24 | | |
| COURSE | B.E | SEMESTER | III | SECTION | - |
| SUBJECT | BASIC THERMODYNAMICS | SUBJECT CODE | BME304 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | | | | | | | | | | |
| CO2 | 3 | 3 | | | | | | | | | | |
| CO3 | 3 | 2 | 3 | | | | | | | | | |
| CO4 | 3 | 3 | | | | | | | | | | |
| CO5 | 2 | 2 | 2 | | | | | | | | | |
| AVERAGE | 2.8 | 2.6 | 2.5 | | | | | | | | | |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.63 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 51.03 | 1.53 | 1.53 | | | | | | | | | | |
| CO2 | 60.08 | 1.80 | 1.80 | | | | | | | | | | |
| CO3 | 48.09 | 1.44 | 0.96 | 1.44 | | | | | | | | | |
| CO4 | 56.42 | 1.69 | 1.69 | | | | | | | | | | |
| CO5 | 42.94 | 0.84 | 0.84 | 0.84 | | | | | | | | | |
| AVERAGE | 62.53 | 1.46 | 1.36 | 1.14 | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.32 |

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|---|---|

## DEPARTMENT OF ME

| SUBJECT | WASTE HANDLING & MANAGEMENT | SUBJECT CODE | BME306D |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Appreciate the elements of Corporate Environmental Management systems complying to international environmental management system standards. |
| CO2 | Lead pollution prevention assessment team |
| CO3 | implement waste minimization options. |
| CO4 | Develop, Implement, maintain |
| CO5 | Audit Environmental Management systems for Organizations. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, Statistics and discrete mathematics), science, and engineering for solving Engineering problems And Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering Problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| NAME OF THE COLLEGE | | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY, TUMAKURU | | | |
|---|---|---|---|---|---|
| FACULTY NAME | | POOJA | | | |
| BRANCH | | MECHANICAL | ACADEMIC YEAR | | 2022-23 |
| COURSE | B.E | SEMESTER | III | SECTION | - |
| SUBJECT | WASTE HANDLING & MANAGEMENT | | | SUBJECT CODE | BME306D |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO2 | 3 | 2 | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | - | 2 |
| CO3 | 3 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| CO4 | 3 | 2 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO5 | 3 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| AVERAGE | 3 | 1.6 | 1 | 1.2 | 1 | 1.8 | 2.2 | 1 | 1 | 1 | 1 | 2 |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 1.52 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 62 | 1.86 | 1.24 | 0.62 | 0.6 | - | 1.24 | 1.86 | 0.62 | 0.62 | 0.62 | 0.62 | 1.24 |
| CO2 | 66 | 1.98 | 1.32 | 0.66 | 1.3 | - | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | - | 1.32 |
| CO3 | 49 | 1.47 | 0.98 | 0.49 | 0.5 | 0.49 | 0.98 | 0.98 | 0.49 | 0.49 | 0.49 | 0.49 | 0.98 |
| CO4 | 63 | 1.89 | 1.26 | 0.63 | 0.6 | - | 1.26 | 1.89 | 0.63 | 0.63 | 0.63 | 0.63 | 1.26 |
| CO5 | 48 | 1.44 | 0.96 | 0.48 | 0.5 | 0.48 | 0.96 | 0.96 | 0.48 | 0.48 | 0.48 | 0.48 | 0.96 |
| AVERAGE | 57.6 | 1.73 | 1.15 | 0.58 | 0.7 | 0.49 | 1.02 | 1.27 | 0.58 | 0.58 | 0.58 | 0.56 | 1.15 |
| | | | | | | | | | | | | Final attainment level | 0.86 |

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2023-24

# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ME

| SUBJECT | ENERGY ENGINEERING | SUBJECT CODE | 18ME81 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Understand the construction and working of steam generators and their accessories. |
| CO2 | Identify renewable energy sources and their utilization. |
| CO3 | Understand principles of energy conversion |
| CO4 | Understand principles of energy conversion from alternate sources including wind, geothermal, |
| CO5 | Understand principles of energy conversion from alternate sources ocean, biomass, nuclear, hydel and tidal. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, Statistics and discrete mathematics), science, and engineering for solving Engineering problems And Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering Problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| NAME OF THE COLLEGE | | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY, TUMAKURU | | | |
|---|---|---|---|---|---|
| FACULTY NAME | | Prof. K.P. Chandraiah | | | |
| BRANCH | | MECHANICAL | ACADEMIC YEAR | | 2023-24 |
| COURSE | B.E | SEMESTER | VIII | SECTION | - |
| SUBJECT | ENERGY ENGINEERING | | | SUBJECT CODE | 18ME81 |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 1 | 1 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO2 | 2 | 2 | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | - | 2 |
| CO3 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| CO4 | 2 | 1 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO5 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| AVERAGE | 1.6 | 1.4 | 1 | 1.2 | 1 | 1.8 | 2.2 | 1 | 1 | 1 | 1 | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 1.35 |

**CO AND PO ATTAINMENT**

| | CO % | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 60 | 1.8 | 0.6 | 0.6 | 0.6 | - | 1.2 | 1.8 | 0.6 | 0.6 | 0.6 | 0.6 | 1.2 |
| CO2 | 65 | 1.95 | 1.3 | 0.65 | 1.31 | - | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | - | 1.3 |
| CO3 | 47 | 1.41 | 0.94 | 0.47 | 0.48 | 0.47 | 0.94 | 0.94 | 0.47 | 0.47 | 0.47 | 0.47 | 0.94 |
| CO4 | 64 | 1.92 | 0.64 | 0.64 | 0.53 | - | 1.28 | 1.92 | 0.64 | 0.64 | 0.64 | 0.64 | 1.28 |
| CO5 | 43 | 1.29 | 0.43 | 0.43 | 0.47 | 0.47 | 0.86 | 0.86 | 0.43 | 0.43 | 0.43 | 0.43 | 0.86 |
| AVERAGE | 55.8 | 1.67 | 0.78 | 0.56 | 0.68 | 0.47 | 0.99 | 1.23 | 0.56 | 0.56 | 0.56 | 0.54 | 1.12 |
| Final attainment level | | | | | | | | | | | | | 0.81 |

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## DEPARTMENT OF ME

| SUBJECT | AUTOMOBILE ENGINEERING | SUBJECT CODE | 18ME824 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | To identify the different parts of an automobile and it's working |
| **CO2** | To understand the working of transmission and braking systems. |
| **CO3** | To comprehend the working of steering and suspension systems |
| **CO4** | To learn various types of fuels and injection systems |
| **CO5** | To know the cause of automobile emissions, its effects on environment and methods to reduce the emissions. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, Statistics and discrete mathematics), science, and engineering for solving Engineering problems And Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering Problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** 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.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| NAME OF THE COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY, TUMAKURU | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | Prof. Ravikumar K R | | | | | | | | | | | |
| BRANCH | MECHANICAL | | | ACADEMIC YEAR | | | 2023-24 | | | | | |
| COURSE | B.E | SEMESTER | | VIII | SECTION | | - | | | | | |
| SUBJECT | AUTOMOBILE ENGINEERING | | | | | SUBJECT CODE | 18ME824 | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 1 | 1 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO2 | 2 | 2 | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | - | 2 |
| CO3 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| CO4 | 2 | 1 | 1 | 1 | - | 2 | 3 | 1 | 1 | 1 | 1 | 2 |
| CO5 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 |
| AVERAGE | 1.6 | 1.4 | 1 | 1.2 | 1 | 1.8 | 2.2 | 1 | 1 | 1 | 1 | 2 |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 1.35 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 60 | 0.6 | 0.6 | 0.6 | 0.6 | - | 1.2 | 1.8 | 0.6 | 0.6 | 0.6 | 0.6 | 1.2 |
| CO2 | 74 | 1.48 | 1.48 | 0.74 | 1.31 | - | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | - | 1.48 |
| CO3 | 50 | 0.5 | 1 | 0.5 | 0.48 | 0.5 | 1 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 1 |
| CO4 | 63 | 1.26 | 0.63 | 0.63 | 0.53 | - | 1.26 | 1.89 | 0.63 | 0.63 | 0.63 | 0.63 | 1.26 |
| CO5 | 50 | 1 | 0.5 | 0.5 | 0.47 | 0.47 | 1 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 1 |
| AVERAGE | 59.4 | 0.97 | 0.84 | 0.59 | 0.68 | 0.49 | 1.04 | 1.29 | 0.59 | 0.59 | 0.59 | 0.56 | 1.19 |
| | | | | | | | | | | | | Final attainment level | 0.79 |

FACULTY

HOD

PRINCIPAL
SIET. TUMKUR.
PRINCIPAL