

Machinery Program- Program Outcomes

1. **Basic Science and Engineering Knowledge:** Uses knowledge and principles acquired in basic science and engineering courses such as Mathematics I-II , Physics , and Engineering Science I-II to solve technical problems.
2. **Mechanics and Strength Application:** Analyzes machine parts using knowledge of stress, buckling, bending, and force-affected elements learned in Strength of Materials and Machine Elements courses.
3. **Material Selection and Technology:** Understands the structural properties and heat treatments of materials, and performs appropriate material selection using knowledge from Materials Technology I-II and Heat Treatment Technologies (elective).
4. **CAD Proficiency:** Draws and designs part/assembly drawings in 2D/3D drawing software using the rules of Technical Drawing , Machine Occupational Drawing , and Computer Aided Drawing courses.
5. **Manufacturing Processes Knowledge:** Knows and applies different production methods such as machining, non-machining, casting, forging, sheet metal, and gear manufacturing through Basic and Advanced Manufacturing Processes (I-II) courses.
6. **CNC Programming and Operation:** Acquires knowledge about G/M codes, tool path generation, and simulation, and safely programs and operates CNC machines through CNC Lathe and CNC Milling Technology courses.
7. **Welding Technology:** Knows welding methods (Arc, TIG, MIG/MAG) and welding seams, defects, and inspection methods through the Welding Technology course.
8. **Hydraulics-Pneumatics Systems:** Comprehends the circuit elements, diagrams, and troubleshooting methods of Hydraulic-Pneumatic systems and applies these systems.
9. **Modern and Unconventional Machining:** Understands the principles and applications of modern production techniques such as Unconventional Manufacturing Methods and CNC Electro Erosion.
10. **Quality Control and Measurement:** Acquires skills in optical/photogrammetric measurement, data optimization, quality control, and inspection through Reverse Engineering and Quality Control courses.
11. **System and Facility Knowledge:** Understands the design, projecting, and operation principles of fundamental systems in industrial facilities through Heating Systems , Air Conditioning and Refrigeration Systems , and Factory Installation Drawings (elective).
12. **Management and Organization:** Acquires knowledge about production systems, inventory and capacity planning, facility layout, and management techniques through the Manufacturing Management (elective) course.
13. **Occupational Communication and Language:** Develops written and oral communication skills through Turkish Language I-II courses ; gains foreign language proficiency to follow technical documents through the Occupational Foreign Language (elective) course.
14. **Ethical and Legal Awareness:** Understands concepts of professional ethics and morality and acts with a sense of professional responsibility through the Professional Ethics (elective) course.
15. **Historical Awareness and Values:** Possesses adequate awareness about the country's history, national struggle, and the fundamental philosophy of the republic through Atatürk's Principles and Revolution History I-II courses.
16. **Individual Work and Responsibility:** Develops awareness of taking individual responsibility, working effectively in multidisciplinary teams, and lifelong learning for professional development through internship applications and group/applied courses.