

**DESCRIPTION FORM OF COURSE**

| Course Code and Name: TII111 Basic Manufacturing Processes |        |                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | Programme: Machine Techonolgy                                                                                                                                                      |      |                    |                                 |
|------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                    | Total | Credits                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| 1                                                          | 4      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4     | 4                                                                                                                                                                                  | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                                    |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                          |        | Assistant Professor Dr. Ali Kemal ASLAN                                                                                                                                                                                                                                                                                                                                                                                                  |       | E-posta : akaslan@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                             |        | The objective of this course is, introducing the manufacturing process and to teach the basic manufacturing processes to students.                                                                                                                                                                                                                                                                                                       |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies                  |        | 1. Students will be able to have knowledge about manufacturing concepts<br>2. Students will be able to learn machining and chipless manufacturing methods<br>3. Students will be able to learn detachable and non-detachable joining operations and recognize their elements.<br>4. Students will be able to have knowledge about main welding process<br>5. Students will be able to describe organization of the manufacturing process |       |                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials                 |        | -Prof. Dr. Mustafa AKKURT, “Makina Bilgisi”, Birsen Press, 1996, Ankara<br>-Course Notes                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                           |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                            |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                    |      |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semestr Course Plan</b> |                                                         |
|----------------------------|---------------------------------------------------------|
| <b>Week</b>                | <b>Syllabus</b>                                         |
| <b>1</b>                   | Basic concepts of manufacturing process                 |
| <b>2</b>                   | Conventional manufacturing processes and classification |
| <b>3</b>                   | Casting Techniques                                      |
| <b>4</b>                   | Plastic shaping methods                                 |
| <b>5</b>                   | Forging-Pressing-Rolling                                |
| <b>6</b>                   | Sheet metal processing                                  |
| <b>7</b>                   | Machining Methods                                       |
| <b>8</b>                   | Midterm Exam                                            |
| <b>9</b>                   | Lathe Processing                                        |
| <b>10</b>                  | Milling Processing                                      |
| <b>11</b>                  | Drilling and related operataions                        |
| <b>12</b>                  | Broching-Planning- Dragline                             |
| <b>13</b>                  | Grinding                                                |
| <b>14</b>                  | Precision finishing operations                          |

**DESCRIPTION FORM OF COURSE**

|                                            |        |                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                        |      |                    |                                 |
|--------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: FİZ109 PHYSICS       |        |                                                                                                                                                                                                                                                                                                                                                                                         |       | Program: Machinery                                                                                                                                                                                                                     |      |                    |                                 |
| Semester                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                   | Total | Credits                                                                                                                                                                                                                                | ECTS | Language of Course | Course Type Compulsory/Elective |
| 1                                          | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                       | 3     | 3                                                                                                                                                                                                                                      | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                    |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                                                                                                                        |      |                    |                                 |
| Course Instructor                          |        | Assoc. Prof. Dr. Sibel KORUNUR                                                                                                                                                                                                                                                                                                                                                          |       | Mail : sibelkorunur@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/enerji/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/enerji/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                             |        | The aim of this course is to introduce <b>basic physical concepts and their units</b> and to help students <b>comprehend calculations</b> .                                                                                                                                                                                                                                             |       |                                                                                                                                                                                                                                        |      |                    |                                 |
| Course Learning Outcomes and Competencies  |        | <ul style="list-style-type: none"><li>• Uses physical unit systems.</li><li>• Performs vector calculations.</li><li>• Performs calculations for <b>Velocity, Work, Energy, and Power</b>.</li><li>• Comprehends <b>Newton's laws of motion</b>.</li><li>• Explains basic electrical concepts.</li><li>• Solves simple electric circuits.</li><li>• Explains <b>Magnetism</b>.</li></ul> |       |                                                                                                                                                                                                                                        |      |                    |                                 |
| Textbooks and /or Other Required Materials |        | Serway Fen Ve Mühendislik İçin Fizik 1-2, Raymond A. Serway, Robert J. Beichner Physics-Principles with Application, Douglas Giancoli                                                                                                                                                                                                                                                   |       |                                                                                                                                                                                                                                        |      |                    |                                 |
| Method of delivery of the course           |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                        |      |                    |                                 |
| Teaching Methods and Techniques            |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                                                                        |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                               |          |           |
|--|-----------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab,<br/>Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                    | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                           |
| <b>1</b>                    | • Measurement and physical quantities, unit systems                                                       |
| <b>2</b>                    | • Scalar and vector quantities; Decomposing vectors into components, addition, and subtraction of vectors |
| <b>3</b>                    | • Vector product, scalar product                                                                          |
| <b>4</b>                    | • Moment and Equilibrium                                                                                  |
| <b>5</b>                    | • Kinematics, position, displacement, velocity, and acceleration                                          |
| <b>6</b>                    | • Horizontal and vertical motion in one dimension                                                         |
| <b>7</b>                    | • Dynamics, Newton's laws and their applications                                                          |
| <b>8</b>                    | • Concept of Work, Power, and Energy                                                                      |
| <b>9</b>                    | • Conservation of Energy                                                                                  |
| <b>10</b>                   | • Electricity-Electric Force- Electric Field                                                              |
| <b>11</b>                   | • Electricity-Electric Potential- Electric Potential Energy                                               |
| <b>12</b>                   | • Electric Current, Resistance, Series-Parallel Circuits                                                  |
| <b>13</b>                   | • Magnetic Field-Magnetic Force- Sources of Magnetic Field                                                |
| <b>14</b>                   | • Biot-Savart Law - Faraday's Law                                                                         |

**DESCRIPTION FORM OF COURSE**

|                                            |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
|--------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MATH 105 Mathematics |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | Program: Machinery                                                                                                                                                                                                                                             |      |                    |                                 |
| Semester                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Total | Credits                                                                                                                                                                                                                                                        | ECTS | Language of Course | Course Type Compulsory/Elective |
| 1                                          | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2     | 2                                                                                                                                                                                                                                                              | 2    | Turkish            | Compulsory                      |
| Prerequisites of Course                    |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
| Course Instructor                          |        | Dr. Gülcan ATICI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       | Mail : gatici@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=">https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=</a> |      |                    |                                 |
| Aims of Course                             |        | To provide students with sufficient mathematical knowledge to solve the problems they encounter and to develop students' ability to think analytically and produce solutions to problems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
| Course Learning Outcomes and Competencies  |        | 1. Will be able to explain numbers and number sets.<br>1.1. Explains the positive natural number power of a natural number and shows the accuracy of the properties of exponential expressions.<br>1.2. Explains the concept of prime numbers and the fact that numbers are prime to each other with examples and divides a natural number into prime factors and finds the number of its positive divisors.<br>1.3. Specifies the properties of addition and multiplication operations by performing addition, subtraction, multiplication and division operations on the set of integers.<br>2. Will be able to show the properties related to operations in modular arithmetic and be able to perform operations.<br>2.1. Explains the concept of module with examples, indicates the concept of remainder class (equivalence class) and the set of remainder classes (Z/m set) according to the division operation with integers.<br>2.2. Performs addition and multiplication operations in the set Z/m and states their properties<br>3. Will be able to explain the absolute value of a real number and state the properties related to absolute value.<br>3.1. Knows the definition and properties of absolute value.<br>3.2. Solves problems using the properties of absolute value.<br>4. Will be able to explain square root and exponential expressions, state their properties and apply them.<br>4.1. Performs four operations on square root numbers.<br>4.2. Solves problems using the properties of exponential numbers.<br>Properties related to multiplication, division and powers of exponential expressions are examined algebraically.<br>5. Will be able to explain ratio and proportion.<br>5.1. Shows the properties of proportion and solves problems related to daily life. |       |                                                                                                                                                                                                                                                                |      |                    |                                 |

|                                                   |                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | <p>5.2. Reminds the properties of ratio, proportion and proportion.</p> <p>6. Will be able to define functions.</p> <p>6.1. Finds the intervals in which the given function is defined and undefined.</p> <p>6.2. Finds the inverse of the given function.</p> <p>6.3. Defines the composite function and explains its properties.</p> |
| <b>Textbooks and /or Other Required Materials</b> | <p>1. General Mathematics , Mustafa Balcı, Balcı Publications, 2003.</p> <p>Basic Mathematics, Basri Çelik, İsmail Naci Cangül, Nisa Çelik, Osman Bizim, Metin Öztürk; Dora Publications, 2010.</p> <p>Lecture notes and presentations</p>                                                                                             |
| <b>Method of delivery of the course</b>           | Face to face, Online                                                                                                                                                                                                                                                                                                                   |
| <b>Teaching Methods and Techniques</b>            | Explanation, Demonstration, Question-Answer, Discussion                                                                                                                                                                                                                                                                                |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |
|                            | <b>Semester Final Exam</b>                | X                              | <b>60</b>                                                 |

| <b>Semester Course Plan</b> |                          |
|-----------------------------|--------------------------|
| <b>Week</b>                 | <b>Syllabus</b>          |
| <b>1</b>                    | Numbers                  |
| <b>2</b>                    | Rational numbers         |
| <b>3</b>                    | Decimal numbers          |
| <b>4</b>                    | Exponential numbers      |
| <b>5</b>                    | Radical numbers          |
| <b>6</b>                    | Identities and factoring |
| <b>7</b>                    | Absolute value           |
| <b>8</b>                    | Midterm exam             |

|           |                                  |
|-----------|----------------------------------|
| <b>9</b>  | Simple inequalities              |
| <b>10</b> | Ratio-proportion                 |
| <b>11</b> | Operation and modular arithmetic |
| <b>12</b> | Problems                         |
| <b>13</b> | Graph types and problems         |
| <b>14</b> | Functions                        |

**DESCRIPTION FORM OF COURSE**

| Course Code and Name: MAL115 Material Technology 1 |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       | Program: Machinery                                                                                                                                                                                                                 |      |                    |                                 |
|----------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                           | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Total | Credits                                                                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| Fall Semester                                      | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3     | 3                                                                                                                                                                                                                                  | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                            |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                  |        | Assoc. Prof. Dr. Yakup SAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       | Mail : yakupsay@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                     |        | <ul style="list-style-type: none"><li>To introduce the fundamental types of engineering materials, including metallic, ceramic, polymeric, and composite materials, and to elucidate their key properties.</li><li>To provide a comprehensive understanding of atomic structure, crystal lattices, and crystallographic defects that govern material behavior.</li><li>To explain deformation mechanisms and mechanical properties of materials under various loading conditions.</li><li>To familiarize students with standard mechanical testing methods such as tensile, compression, bending, torsion, fatigue, and hardness tests, and to develop skills in interpreting test results.</li><li>To emphasize the significance of material selection and performance in engineering design and applications.</li><li>To enable students to apply materials science principles in analyzing and solving engineering problems related to material behavior and performance</li></ul> |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies          |        | <ul style="list-style-type: none"><li>Classify and describe the fundamental types of engineering materials, including metals, ceramics, polymers, and composites.</li><li>Explain atomic structure, interatomic bonding, crystal lattice types, and crystallographic defects and their influence on material properties.</li><li>Analyze deformation mechanisms and relate them to mechanical behavior under different loading conditions.</li><li>Interpret and evaluate results from mechanical tests such as tensile, compression, bending, torsion, fatigue, and hardness tests.</li><li>Apply materials science principles to select appropriate materials for engineering applications based on structure-property relationships.</li></ul>                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials         |        | Prof. Dr. Hüseyin Uzun, "Malzeme Bilgisi" [in Turkish], Nobel Akademik Yayıncılık.<br>Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                   |        | Face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                    |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                    |      |                    |                                 |



| Evaluation Criteria |                                       | If yes, please mark<br>(X) | Percentage (%)<br>Contribution to the<br>Overall Average |
|---------------------|---------------------------------------|----------------------------|----------------------------------------------------------|
|                     | 1. Midterm Exam                       | X                          | 40                                                       |
|                     | 2. Midterm Exam                       |                            |                                                          |
|                     | 3. Midterm Exam                       |                            |                                                          |
|                     | Oral Exam                             |                            |                                                          |
|                     | Practical Exam (Lab,<br>Project etc.) |                            |                                                          |
|                     | Semester Final Exam                   | X                          | 60                                                       |

| Semester Course Plan |                                                  |
|----------------------|--------------------------------------------------|
| Week                 | Syllabus                                         |
| 1                    | Introduction to Engineering Materials            |
| 2                    | Metallic Materials                               |
| 3                    | Ceramic Materials                                |
| 4                    | Polymeric Materials                              |
| 5                    | Composite Materials                              |
| 6                    | Atomic Structure and Interatomic Bonds           |
| 7                    | Midterm Exam                                     |
| 8                    | Unit Cells and Crystal Structures                |
| 9                    | Crystal Defects                                  |
| 10                   | Deformation Mechanisms                           |
| 11                   | Mechanical Properties of Materials               |
| 12                   | Tensile Test and Engineering Stress-Strain Curve |
| 13                   | Compression, Bending, Torsion, and Fatigue Tests |
| 14                   | Hardness Tests and Material Selection            |
| 15                   | Final Exam                                       |

**DESCRIPTION FORM OF COURSE**

|                                                |        |                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                                                                     |      |                    |                                 |
|------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MTR113 Technical Drawing |        |                                                                                                                                                                                                                                                                                                                                                                                                |       | Program: Machinery                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                       | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                          | Total | Credits                                                                                                                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| 1                                              | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                              | 4     | 3                                                                                                                                                                                                                                   | 5    | Turkish            | Compulsory                      |
| Prerequisites of Course                        |        | There are no prerequisites for this course.                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Instructor                              |        | Assoc. Prof. Dr. Yahya TAŞGIN                                                                                                                                                                                                                                                                                                                                                                  |       | Mail : yahyatasgin@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                 |        | The aim of this course is to provide students with the ability to read technical drawings, apply drawing rules, create technical drawings in accordance with standards, and accurately represent machine elements.                                                                                                                                                                             |       |                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies      |        | <ul style="list-style-type: none"><li>• Explains the rules and standards of technical drawing.</li><li>• Draws basic geometric constructions and projections.</li><li>• Applies dimensioning and sectioning rules.</li><li>• Creates part and assembly drawings.</li><li>• Reads and interprets technical drawings.</li><li>• Uses computer-aided drawing software at a basic level.</li></ul> |       |                                                                                                                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials     |        | Albayrak, M., Technical Drawing for Mechanical Engineering, Nobel Publishing.<br>Giesecke, F. E. et al., Technical Drawing with Engineering Graphics, Pearson.<br>AutoCAD / SolidWorks Training Notes.                                                                                                                                                                                         |       |                                                                                                                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course               |        | Face-to-face instruction.                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                |        | Lecture, question-answer.                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                                                                                                                     |      |                    |                                 |

|  |                        | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|--|------------------------|-------------------------|----------------------------------------------------|
|  | <b>1. Midterm Exam</b> | X                       | 40                                                 |

|                            |                                           |          |           |
|----------------------------|-------------------------------------------|----------|-----------|
| <b>Evaluation Criteria</b> | <b>2. Midterm Exam</b>                    |          |           |
|                            | <b>3. Midterm Exam</b>                    |          |           |
|                            | <b>Oral Exam</b>                          |          |           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|                            | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                         |
|-----------------------------|-------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                         |
| <b>1</b>                    | Definition and importance of technical drawing, drawing tools           |
| <b>2</b>                    | Letters, lines, and scales                                              |
| <b>3</b>                    | Basic geometric constructions                                           |
| <b>4</b>                    | Projection methods                                                      |
| <b>5</b>                    | Projection drawing applications                                         |
| <b>6</b>                    | Sectioning methods                                                      |
| <b>7</b>                    | Dimensioning techniques                                                 |
| <b>8</b>                    | Midterm Exam                                                            |
| <b>9</b>                    | Perspective drawing                                                     |
| <b>10</b>                   | Part drawings                                                           |
| <b>11</b>                   | Assembly drawings                                                       |
| <b>12</b>                   | Standard machine elements                                               |
| <b>13</b>                   | Introduction to computer-aided technical drawing (AutoCAD / SolidWorks) |
| <b>14</b>                   | General review and project presentation                                 |
| <b>15</b>                   | Final Exam                                                              |

**DESCRIPTION FORM OF COURSE**

|                                                  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                  |      |                    |                                 |
|--------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TDI 103 Turkish Language I |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       | Program: Machinnery                                                                                                              |      |                    |                                 |
| Semester                                         | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total | Credits                                                                                                                          | ECTS | Language of Course | Course Type Compulsory/Elective |
| Fall Semester                                    | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2     | 2                                                                                                                                | 2    | Turkish            | Compulsory                      |
| Prerequisites of Course                          |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                  |      |                    |                                 |
| Course Instructor                                |        | Lecturer Seval PERK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       | Mail : sperk@munzur.edu.tr<br>Web :<br>www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/Çocuk Gelişimi/Sayfalar/akadro.aspx |      |                    |                                 |
| Aims of Course                                   |        | It aims to show students the characteristics and rules of the Turkish Language with examples; to provide them with the skills and habits of expressing their feelings, thoughts, plans, impressions, observations, and experiences correctly and effectively in words and writing; to develop their vocabulary through written and spoken texts; to teach them the rules of correctly understanding the texts they read or the programs they listen to; and to develop their language skills, which are the basis of communication between individuals and masses.                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                  |      |                    |                                 |
| Course Learning Outcomes and Competencies        |        | 1. Will be able to have general information about the concept of language.<br>1.1. Definition and birth of language; culture, thought and communication.<br>1.2. Understands the differences between written language and spoken language.<br>2. Will be able to gain correct and planned writing skills.<br>2.1. Learns the details of paper layout and paragraph information.<br>2.2. Gains competence in written communication by doing writing studies.<br>3. Will be able to have information about spelling rules and punctuation marks.<br>3.1. Uses punctuation marks correctly in the text.<br>3.2. Eliminates ambiguity in written communication by learning the details of spelling rules.<br>4. Will be able to have general information about the rules of petition.<br>4.1. Learns how to write a petition correctly.<br>4.2. Applies the rules in official correspondence. |       |                                                                                                                                  |      |                    |                                 |
| Textbooks and /or Other Required Materials       |        | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                                                                                  |      |                    |                                 |
| Method of delivery of the course                 |        | Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                  |      |                    |                                 |
| Teaching Methods and Techniques                  |        | Explanation, Question-Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                  |      |                    |                                 |

|  |  |                                |                                                           |
|--|--|--------------------------------|-----------------------------------------------------------|
|  |  | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|--|--|--------------------------------|-----------------------------------------------------------|

|                            |                                           |   |           |
|----------------------------|-------------------------------------------|---|-----------|
| <b>Evaluation Criteria</b> | <b>1. Midterm Exam</b>                    | X | <b>40</b> |
|                            | <b>2. Midterm Exam</b>                    |   |           |
|                            | <b>3. Midterm Exam</b>                    |   |           |
|                            | <b>Oral Exam</b>                          |   |           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |   |           |
|                            | <b>Semester Final Exam</b>                | X | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                             |
| <b>1</b>                    | • Definition and Function of Language (Dilin Tanımı ve İşlevi)              |
| <b>2</b>                    | • Languages/Birth of Language (Diller/Dilin Doğuşu)                         |
| <b>3</b>                    | • Written Language and Spoken Language (Yazılı Dil ve Konuşulan Dil)        |
| <b>4</b>                    | • Paper Layout and Paragraph Information (Kağıt Düzeni ve Paragraf Bilgisi) |
| <b>5</b>                    | • Paragraph Plan (Paragraf Planı)                                           |
| <b>6</b>                    | • Writing and Writing Plan (Yazma ve Yazma Planı)                           |
| <b>7</b>                    | • Writing Practices (Yazma Uygulamaları)                                    |
| <b>8</b>                    | • <b>Midterm exam</b> (Vize Sınavı)                                         |
| <b>9</b>                    | • Writing Rules (Yazım Kuralları)                                           |
| <b>10</b>                   | • Writing Rules (Yazım Kuralları)                                           |
| <b>11</b>                   | • Punctuation Marks (Noktalama İşaretleri)                                  |
| <b>12</b>                   | • Punctuation Marks (Noktalama İşaretleri)                                  |
| <b>13</b>                   | • Petition (Dilekçe)                                                        |
| <b>14</b>                   | • Writing Studies (Yazma Çalışmaları)                                       |
| <b>15</b>                   | • <b>Final exam</b> (Final Sınavı)                                          |

**DESCRIPTION FORM OF COURSE**

|                                                  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
|--------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------|
| Course Code and Name: YDI 107 Foreign Language I |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       | Program: Machinnery |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Semester                                         | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Total | Credits             | ECTS                                                                                                                                                                                                                                                                                     | Language of Course | Course Type Compulsory/Elective |
| 1                                                | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2     | 2                   | 4                                                                                                                                                                                                                                                                                        | English            | Compulsory                      |
| Prerequisites of Course                          |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Course Instructor                                |        | Lecturer Dr. Eda TAYŞI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                     | Mail : <a href="mailto:edataysi@munzur.edu.tr">edataysi@munzur.edu.tr</a><br>Web : <a href="http://munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/yabanciKultur/Pages/akadro_en.aspx">http://munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/yabanciKultur/Pages/akadro_en.aspx</a> |                    |                                 |
| Aims of Course                                   |        | To provide students with basic English knowledge and to enable them to use it in daily life.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Course Learning Outcomes and Competencies        |        | 1. Will be able to introduce himself, his environment and his family with basic level of English.<br>1.1. Introduces himself verbally.<br>1.2. Expresses himself in writing.<br>2. Will be able to speak English with anyone at a basic level.<br>2.1. Speaks at A2 level.<br>2.2. Understands what he hears at A2 level.<br>3. Will be able to introduce the objects around him and make comparisons.<br>3.1. Makes definitions at A2 level.<br>3.2. Makes comparisons at A2 level.<br>4. Will be able to express his needs and desires at a basic level.<br>4.1. Requests his desires at a basic level in English.<br>4.2. Expresses himself in written and oral form.<br>5. Will be able to talk about current and past events and write with simple sentence structures.<br>5.1. Expresses himself in written and oral form.<br>Understands what is said at a basic level. |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Textbooks and /or Other Required Materials       |        | Hutchinson,T. TABOR, C.QUINTANA, J. EADIE, K. English For Life. Oxford University Press<br>Azar, B. Basic English Grammar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Method of delivery of the course                 |        | Online, face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Teaching Methods and Techniques                  |        | Explanation, Question-Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                             |
|----------------------|---------------------------------------------|
| Week                 | Syllabus                                    |
| 1                    | Introduction to Course                      |
| 2                    | Countries & Nationalities                   |
| 3                    | Present Simple Tense                        |
| 4                    | Present Simple Tense (Negatives& questions) |
| 5                    | Common verb phrases                         |
| 6                    | Wh- question words                          |
| 7                    | Possessive -s Family Members                |
| 8                    | Midterm exam                                |
| 9                    | Around Home (household objects)             |
| 10                   | Singular/Plural Nouns a/ an/ the            |
| 11                   | This/that/these/those                       |
| 12                   | Colours and common adjectives               |
| 13                   | Can/ Can't                                  |
| 14                   | Present Continuous Tense                    |
| 15                   | Final exam                                  |

**DESCRIPTION FORM OF COURSE**

|                                                                                   |               |                                                                                                                                                                                                                                                                                                                                                          |              |                           |                                                                                                                                                                                                                                                    |                           |                                        |
|-----------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------|
| <b>Course Code and Name: AIT101 Atatürk's Principles and Revolution History-I</b> |               |                                                                                                                                                                                                                                                                                                                                                          |              | <b>Program: Machinery</b> |                                                                                                                                                                                                                                                    |                           |                                        |
| <b>Semester</b>                                                                   | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                                             | <b>Total</b> | <b>Credits</b>            | <b>ECTS</b>                                                                                                                                                                                                                                        | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Fall Semester                                                                     | 2             | 0                                                                                                                                                                                                                                                                                                                                                        | 2            | 2                         | 2                                                                                                                                                                                                                                                  | Turkish                   | Compulsory                             |
| <b>Prerequisites of Course</b>                                                    |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                                              |              |                           |                                                                                                                                                                                                                                                    |                           |                                        |
| <b>Course Instructor</b>                                                          |               | Lecturer Adem KIZKAPAN                                                                                                                                                                                                                                                                                                                                   |              |                           | <b>Mail :</b> akizkapan@munzur.edu.tr<br><b>Web :</b><br><a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx</a> |                           |                                        |
| <b>Aims of Course</b>                                                             |               | It aims to let the student who attends the courses to acquire the ability of classification, description, explanation, analysis of the current social and individual problems in Turkey by taking rationality and science, norms of modernity into account with respect to the Kemalist thought and the Turkish Revolution                               |              |                           |                                                                                                                                                                                                                                                    |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>                                  |               | 1.Have knowledge about the developments in European History, and Ottoman modernization<br>2. Have knowledge about the causes of the Collapse of the Ottoman Empire<br>3. Have knowledge about the First World War<br>4. Have knowledge about the Turkish National Struggle<br>5. Have knowledge about the founding philosophy of the Republic of Turkey. |              |                           |                                                                                                                                                                                                                                                    |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>                                 |               | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                                                                                  |              |                           |                                                                                                                                                                                                                                                    |                           |                                        |
| <b>Method of delivery of the course</b>                                           |               | Online                                                                                                                                                                                                                                                                                                                                                   |              |                           |                                                                                                                                                                                                                                                    |                           |                                        |
| <b>Teaching Methods and Techniques</b>                                            |               | Explanation, Question-Answer                                                                                                                                                                                                                                                                                                                             |              |                           |                                                                                                                                                                                                                                                    |                           |                                        |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |



|  |                                           |          |           |
|--|-------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                                                                                                                                                              |
| <b>1</b>                    | Concepts Related to the Revolution                                                                                                                                                                                                                           |
| <b>2</b>                    | Developments in European history, and their impact on the Ottoman Empire                                                                                                                                                                                     |
| <b>3</b>                    | 19th century reform movements in the Ottoman Empire (Tanzimat period, the First Constitutional Period)                                                                                                                                                       |
| <b>4</b>                    | The second constitutional era,trends and movement in Turkish Political thought,the Turco-Italian war 1911),the Balkan Wars(1912-1913)                                                                                                                        |
| <b>5</b>                    | World War I and the Ottoman Empire (outbreak of the war, participation of the Ottoman Empire, the fronts, and the end of the war), the signing of the Mondros Armistice                                                                                      |
| <b>6</b>                    | Invasions and reactions against them, Kuva-yı Milliye, Societies (national, associations hostile to the national presence, and societies of the minorities), the difficulties after the armistice, Mustafa Kemal Pasha's activities and arrival in Anatolia. |
| <b>7</b>                    | The mudros armistice,Turkish national struggle preparations organization                                                                                                                                                                                     |
| <b>8</b>                    | Midterm                                                                                                                                                                                                                                                      |
| <b>9</b>                    | The beginnings of the national struggle through organization of Congresses (Amasya Circular, Erzurum, Sivas and Western Anatolian Congresses,).                                                                                                              |
| <b>10</b>                   | Amasya interview, the arrival of the Representatives in Ankara, the last Ottoman Parliament, the adoption of the National Pact, the invasion of Istanbul                                                                                                     |
| <b>11</b>                   | The opening of the Grand National Assembly of Turkey, the Assembly's structure, its activities and laws, domestic and foreign reactions to the opening of Parliament.                                                                                        |
| <b>12</b>                   | Dissolution of the national forces, and founding of the regular army, the Greek general attack, and wars in the Western Front                                                                                                                                |
| <b>13</b>                   | Mustafa Kemal Pasha's supreme military command, Tekâlif-i Milliye orders, Sakarya War and foreign policy developments in its aftermath (Turkish-Russian, Turkish-Afghan relations, the London Conference, Ankara Agreement)                                  |
| <b>14</b>                   | The Great Offensive, and signing of the Mudanya Armistice, the developments before the Lausanne Conference, the conference and the signing of the peace agreement                                                                                            |
| <b>15</b>                   | Final exam                                                                                                                                                                                                                                                   |

**DESCRIPTION FORM OF COURSE**

|                                                     |        |                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                    |      |                    |                                 |
|-----------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TII111 Temel İmalat İşlemleri |        |                                                                                                                                                                                                                                                                                |       | Programme: Machine Techonolgy                                                                                                                                                      |      |                    |                                 |
| Semester                                            | Theory | Prac.                                                                                                                                                                                                                                                                          | Total | Credits                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| 1                                                   | 3      | 0                                                                                                                                                                                                                                                                              | 3     | 3                                                                                                                                                                                  | 3    | Turkish            | Compulsory                      |
| Prerequisites of Course                             |        | There are no prerequisites.                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                   |        | Assistant Professor Dr. Ali Kemal ASLAN                                                                                                                                                                                                                                        |       | E-posta : akaslan@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                      |        | The objectives of this course are; to be able to know machine and its components, to be able to select the appropriate element for machines, to teach the basic information necessary for mechanical and design.                                                               |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies           |        | 1. Able to define the elements of the machine and the machine.<br>2. Able to learn detachable and non-detachable connection elements<br>3.Able to define the power and motion transport elements<br>4. Able to calculate loads and forces which effect on the machine elements |       |                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials          |        | -Course Notes                                                                                                                                                                                                                                                                  |       |                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                    |        | Face to face, Online                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                     |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                 |       |                                                                                                                                                                                    |      |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semestr Course Plan</b> |                                                               |
|----------------------------|---------------------------------------------------------------|
| <b>Week</b>                | <b>Syllabus</b>                                               |
| <b>1</b>                   | Description of the machine, the machine types                 |
| <b>2</b>                   | Fundamentals of Strength Calculation Method in Machine Design |
| <b>3</b>                   | Welding                                                       |
| <b>4</b>                   | Soldering, Adhesive, Rivet Connections                        |
| <b>5</b>                   | Shaft-hub connections                                         |
| <b>6</b>                   | Shaft-hub connections                                         |
| <b>7</b>                   | Axe Connections                                               |
| <b>8</b>                   | Midterm Exam                                                  |
| <b>9</b>                   | Bolt Connections                                              |
| <b>10</b>                  | Bolt Connections                                              |
| <b>11</b>                  | Plain Bearings                                                |
| <b>12</b>                  | Gear Connections                                              |
| <b>13</b>                  | Belt Pulleys                                                  |
| <b>14</b>                  | General Overview                                              |

**DESCRIPTION FORM OF COURSE**

| Course Code and Name: MII112 Manufacturing Processes I |        |                                                                                                                                                                                                                                                                                                             |       | Programme: Machine Techonolgy |                                                                                                                                                                                    |                    |                                 |
|--------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------|
| Semester                                               | Theory | Prac.                                                                                                                                                                                                                                                                                                       | Total | Credits                       | ECTS                                                                                                                                                                               | Language of Course | Course Type Compulsory/Elective |
| 2                                                      | 3      | 0                                                                                                                                                                                                                                                                                                           | 3     | 3                             | 3                                                                                                                                                                                  | Turkish            | Compulsory                      |
| Prerequisites of Course                                |        | There are no prerequisites.                                                                                                                                                                                                                                                                                 |       |                               |                                                                                                                                                                                    |                    |                                 |
| Course Instructor                                      |        | Assistant Professor Dr. Ali Kemal ASLAN                                                                                                                                                                                                                                                                     |       |                               | E-posta : akaslan@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |                    |                                 |
| Aims of Course                                         |        | The objectives of this course are, to introduce lathe,milling and drilling machines, and to teach the calculations of the cutting parameters, to understand the production of the machine parts on these machines.                                                                                          |       |                               |                                                                                                                                                                                    |                    |                                 |
| Course Learning Outcomes and Competencies              |        | 1. Students will be able to produce machine parts on the lathe<br>2. Students will be able to use milling machine<br>3. Students will be able to make drilling and related operations by using drilling machine<br>4. Students will be able to know and use the machine measurement and control instruments |       |                               |                                                                                                                                                                                    |                    |                                 |
| Textbooks and /or Other Required Materials             |        | -Course Notes                                                                                                                                                                                                                                                                                               |       |                               |                                                                                                                                                                                    |                    |                                 |
| Method of delivery of the course                       |        | Face to face, Online                                                                                                                                                                                                                                                                                        |       |                               |                                                                                                                                                                                    |                    |                                 |
| Teaching Methods and Techniques                        |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                              |       |                               |                                                                                                                                                                                    |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

**Semester Final Exam**

**X**

**60**

**Semestr Course Plan**

**Week**

**Syllabus**

**1**

Fundamentals

**2**

Cutting Parameters in Machining

**3**

Cutting Parameters in Machining

**4**

Forces while Lathe

**5**

Forces while Lathe

**6**

Forces while Milling

**7**

Axe Connections

**8**

Midterm Exam

**9**

Forces while Drilling

**10**

Introduction to Lathe

**11**

Production by Lathe

**12**

Production by Milling

**13**

Production by Drilling

**14**

General Overview

**DESCRIPTION FORM OF COURSE**

**Course Code and Name: MMR114 MACHINE OCCUPATIONAL DRAWING**

**Program: Machinery**

| Semester                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                      | Total | Credits | ECTS                                                                                                                                                                                                                                | Language of Course | Course Type Compulsory/Elective |
|--------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------|
| Fall Semester                              | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                                                          | 4     | 3       | 5                                                                                                                                                                                                                                   | Turkish            | Compulsory                      |
| Prerequisites of Course                    |        | There are no prerequisites for this course.                                                                                                                                                                                                                                                                                                                                                                                |       |         |                                                                                                                                                                                                                                     |                    |                                 |
| Course Instructor                          |        | Assoc. Prof. Dr. Yahya TAŞGIN                                                                                                                                                                                                                                                                                                                                                                                              |       |         | Mail : yahyatasgin@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx</a> |                    |                                 |
| Aims of Course                             |        | To teach students how to draw machine elements in accordance with technical drawing rules, to provide them with the ability to create assembly and detail drawings, and to develop computer-aided drawing applications at a professional level.                                                                                                                                                                            |       |         |                                                                                                                                                                                                                                     |                    |                                 |
| Course Learning Outcomes and Competencies  |        | 1. Draws machine elements in accordance with technical drawing standards.<br>2. Creates elevation, section, and detail drawings.<br>3. Apply dimensioning, tolerance, and surface treatment rules to part and assembly drawings.<br>4. Accurately represents standard machine elements.<br>5. Can extract and read part images from assembly drawings.<br>6. Uses computer-aided drawing software at a professional level. |       |         |                                                                                                                                                                                                                                     |                    |                                 |
| Textbooks and /or Other Required Materials |        | Albayrak, M., Technical Drawing for Mechanical Engineering, Nobel Publishing.<br>Giesecke, F. E. et al., Technical Drawing with Engineering Graphics, Pearson.<br>AutoCAD / SolidWorks Training Notes.                                                                                                                                                                                                                     |       |         |                                                                                                                                                                                                                                     |                    |                                 |
| Method of delivery of the course           |        | Face-to-face instruction.                                                                                                                                                                                                                                                                                                                                                                                                  |       |         |                                                                                                                                                                                                                                     |                    |                                 |
| Teaching Methods and Techniques            |        | Lecture, question-answer.                                                                                                                                                                                                                                                                                                                                                                                                  |       |         |                                                                                                                                                                                                                                     |                    |                                 |

|  |                        | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|--|------------------------|-------------------------|----------------------------------------------------|
|  | <b>1. Midterm Exam</b> | X                       | 40                                                 |

|                            |                                           |          |           |
|----------------------------|-------------------------------------------|----------|-----------|
| <b>Evaluation Criteria</b> | <b>2. Midterm Exam</b>                    |          |           |
|                            | <b>3. Midterm Exam</b>                    |          |           |
|                            | <b>Oral Exam</b>                          |          |           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|                            | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                |
| <b>1</b>                    | Introduction to mechanical drawing, review of professional drawing I topics, and a refresher on drawing tools. |
| <b>2</b>                    | Review of view extraction methods and advanced applications.                                                   |
| <b>3</b>                    | Section types and section applications (full, half, partial sections).                                         |
| <b>4</b>                    | Dimensioning rules and tolerance systems (dimensional and geometric tolerances).                               |
| <b>5</b>                    | Surface roughness and surface finish marks.                                                                    |
| <b>6</b>                    | Representing standard machine elements in technical drawings (bolts, nuts, keys, bearings, shafts, etc.).      |
| <b>7</b>                    | Assembly drawings: Representing part relationships and fasteners.                                              |
| <b>8</b>                    | Midterm Exam                                                                                                   |
| <b>9</b>                    | Extracting part drawings from assembly drawings (detailing work).                                              |
| <b>10</b>                   | Dimensioning part drawings in accordance with standards                                                        |
| <b>11</b>                   | Perspective drawing (isometric and exploded view applications).                                                |
| <b>12</b>                   | Machine part drawing applications with AutoCAD.                                                                |
| <b>13</b>                   | 3D modeling and conversion to technical drawings with SolidWorks.                                              |
| <b>14</b>                   | Project work: Preparing and presenting part and assembly drawings.                                             |
| <b>15</b>                   | Final Exam and general evaluation.                                                                             |

### DESCRIPTION FORM OF COURSE

|                                                    |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                               |      |                    |                                 |
|----------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MTM116 Strength of Materials |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       | Program: Machinery                                                                                                            |      |                    |                                 |
| Semester                                           | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Total | Credits                                                                                                                       | ECTS | Language of Course | Course Type Compulsory/Elective |
| 2                                                  | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 3     | 3                                                                                                                             | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                            |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                                                               |      |                    |                                 |
| Course Instructor                                  |        | Öğr.Gör. Eda BAKIR GÜR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       | Mail : edabakir@munzur.edu.tr<br>Web : https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                     |        | The Strength of Materials course aims to teach engineering students to understand the behavior of materials under external loads. Through this course, students learn fundamental concepts such as force, stress, deformation, buckling, and bending, enabling them to calculate the safety and durability of structures. Strength of materials is a cornerstone of engineering design and contributes to the development of students' analytical thinking and problem-solving skills.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                               |      |                    |                                 |
| Course Learning Outcomes and Competencies          |        | <ol style="list-style-type: none"><li><b>Ability to perform stress and deformation analyses:</b> Can calculate the stresses and deformations resulting from forces applied to materials.</li><li><b>Ability to interpret material behavior:</b> Can analyze material responses to different types of loading and determine strength limits.</li><li><b>Ability to perform calculations on beams, columns, and shafts:</b> Can conduct bending analysis on beams, buckling analysis on columns, and torsion analysis on shafts.</li><li><b>Ability to select appropriate methods for strength calculations:</b> Can choose suitable theoretical and numerical methods in static analyses to produce accurate solutions.</li><li><b>Ability to develop solutions for engineering problems:</b> Can systematically approach and solve fundamental engineering problems related to strength of materials.</li><li><b>Ability to interpret technical drawings and diagrams:</b> Can read and analyze load diagrams, cross-sections, and internal force diagrams.</li><li><b>Teamwork and communication skills:</b> Can effectively use engineering communication by participating in group work related to strength applications.</li></ol> |       |                                                                                                                               |      |                    |                                 |
| Textbooks and /or Other Required Materials         |        | Lecture notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                               |      |                    |                                 |
| Method of delivery of the course                   |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                                                                               |      |                    |                                 |
| Teaching Methods and Techniques                    |        | Explanation, Presentation, Group study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                               |      |                    |                                 |



| Evaluation Criteria |                                       | If yes, please mark<br>(X) | Percentage (%)<br>Contribution to the<br>Overall Average |
|---------------------|---------------------------------------|----------------------------|----------------------------------------------------------|
|                     | 1. Midterm Exam                       | X                          | 40                                                       |
|                     | 2. Midterm Exam                       |                            |                                                          |
|                     | 3. Midterm Exam                       |                            |                                                          |
|                     | Oral Exam                             |                            |                                                          |
|                     | Practical Exam (Lab,<br>Project etc.) |                            |                                                          |
|                     | Semester Final Exam                   | X                          | 60                                                       |

| Semester Course Plan |                                                  |
|----------------------|--------------------------------------------------|
| Week                 | Syllabus                                         |
| 1                    | Elements under axial (normal) force              |
| 2                    | Elements subjected to torsional moment (torque)  |
| 3                    | Elements subjected to bending moment             |
| 4                    | Elements subjected to combined stress conditions |
| 5                    | Vertically loaded elements                       |
| 6                    | Elements under buckling loads                    |
| 7                    | Non-detachable (permanent) fasteners             |
| 8                    | Non-detachable (permanent) fasteners             |
| 9                    | Detachable (removable) fasteners                 |
| 10                   | Detachable (removable) fasteners                 |
| 11                   | Shafts and axles                                 |
| 12                   | Shafts and axles                                 |
| 13                   | Bearing elements                                 |
| 14                   | Bearing elements                                 |

**DESCRIPTION FORM OF COURSE**

| Course Code and Name: MBT118 Computer Aided Drawing |        |                                                                                                                                                                                                                                                                                                      |       | Programme: Machine Techonolgy                                                                                                                                                      |      |                    |                                 |
|-----------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                            | Theory | Prac.                                                                                                                                                                                                                                                                                                | Total | Credits                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| 2                                                   | 2      | 2                                                                                                                                                                                                                                                                                                    | 3     | 3                                                                                                                                                                                  | 5    | Turkish            | Compulsory                      |
| Prerequisites of Course                             |        | There are no prerequisites.                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                   |        | Assistant Professor Dr. Ali Kemal ASLAN                                                                                                                                                                                                                                                              |       | E-posta : akaslan@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                      |        | With this course it is aimed that to teach technical drawings of the machine elements and systems by using computer aided programs.                                                                                                                                                                  |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies           |        | 1. Students will be able to draw the tecnical drawing of the machine elements by using computer aided design program<br>2. Students will be able to draw 2D and 3D drawings by using computer aided design program<br>3. Students will be able to use the computer aided design program effectively. |       |                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials          |        | -Course Notes                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                    |        | Face to face, Online                                                                                                                                                                                                                                                                                 |       |                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                     |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                       |       |                                                                                                                                                                                    |      |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semestr Course Plan</b> |                                                |
|----------------------------|------------------------------------------------|
| <b>Week</b>                | <b>Syllabus</b>                                |
| <b>1</b>                   | Introduction to Computer Aided Design Software |
| <b>2</b>                   | Basic Drawing Commands                         |
| <b>3</b>                   | Basic Drawing Commands                         |
| <b>4</b>                   | Modify Commands                                |
| <b>5</b>                   | Modify Commands                                |
| <b>6</b>                   | 2d Drawing Examples                            |
| <b>7</b>                   | 2d Drawing Examples                            |
| <b>8</b>                   | Midterm Exam                                   |
| <b>9</b>                   | Layers                                         |
| <b>10</b>                  | Dimension                                      |
| <b>11</b>                  | Introduction to 3D Modelling Workspace         |
| <b>12</b>                  | 3D Drawings in 2D Workspace                    |
| <b>13</b>                  | 3D Drawings in 2D Workspace                    |
| <b>14</b>                  | 3D Drawings in 2D Workspace                    |

**DESCRIPTION FORM OF COURSE**

|                                                                                    |               |                                                                                                                                                                                                                                                                                                     |              |                            |                                                                                                                                                                                                                                                 |                           |                                        |
|------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------|
| <b>Course Code and Name: AIT102 Atatürk's Principles and Revolution History-II</b> |               |                                                                                                                                                                                                                                                                                                     |              | <b>Program: _Machinery</b> |                                                                                                                                                                                                                                                 |                           |                                        |
| <b>Semester</b>                                                                    | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                        | <b>Total</b> | <b>Credits</b>             | <b>ECTS</b>                                                                                                                                                                                                                                     | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Spring                                                                             | 2             | 0                                                                                                                                                                                                                                                                                                   | 2            | 2                          | 2                                                                                                                                                                                                                                               | Turkish                   | Compulsory                             |
| <b>Prerequisites of Course</b>                                                     |               | There are no prerequisites.                                                                                                                                                                                                                                                                         |              |                            |                                                                                                                                                                                                                                                 |                           |                                        |
| <b>Course Instructor</b>                                                           |               | Lecturer Adem KIZKAPAN                                                                                                                                                                                                                                                                              |              |                            | <b>Mail :</b> akizkapan@munzur.edu.tr<br><b>Web :</b> <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/tibbi/Pages/akadro.aspx</a> |                           |                                        |
| <b>Aims of Course</b>                                                              |               | Understanding the Turkish National Struggle and Atatürk's Principles and Revolutions                                                                                                                                                                                                                |              |                            |                                                                                                                                                                                                                                                 |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>                                   |               | 1.Have knowledge about Ataturk’s reforms<br>2.Have knowledge about the Turkish Foreign Policy in Ataturk’s period<br>3.Have knowledge about Ataturk’s principles<br>4.Have basic level of knowledge about the political developments in Turkey and the world during and after the Second World War. |              |                            |                                                                                                                                                                                                                                                 |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>                                  |               | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                             |              |                            |                                                                                                                                                                                                                                                 |                           |                                        |
| <b>Method of delivery of the course</b>                                            |               | Online                                                                                                                                                                                                                                                                                              |              |                            |                                                                                                                                                                                                                                                 |                           |                                        |
| <b>Teaching Methods and Techniques</b>                                             |               | Explanation, Question-Answer,                                                                                                                                                                                                                                                                       |              |                            |                                                                                                                                                                                                                                                 |                           |                                        |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | 40                                                        |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                           |          |           |
|--|-------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                                                                                                                                                                                                                          |
| <b>1</b>                    | Factors as the basis and motives of political modernization: the abolition of the dynasty, The establishment of the Republic, the abolition of the Caliphate. Debates concerning the Dynasty-Caliphate and Republic on the eve of the new state                                                                          |
| <b>2</b>                    | The foundation of the Progressive Republican Party, Sheikh Said Rebellion, declaration of the tranquility law and the attempted assassination of Atatürk.                                                                                                                                                                |
| <b>3</b>                    | The foundation of the Free Republican Party, The rally of İzmir, closing the party, Menemen and Bursa events.                                                                                                                                                                                                            |
| <b>4</b>                    | The Constitution of 1924, other constitutions, the developments in the area of law, reforms regarding the regulation of social life and the process of secularization of the Republic of Turkey                                                                                                                          |
| <b>5</b>                    | Reforms related to education and Culture (the Unification of the Education, introduction of the Latin letters, National Schools, establishment of Turkish history and Turkish Language Institutions and their activities, Turkish history thesis, the sun-language theory, 1933 university reform, (the People's Houses) |
| <b>6</b>                    | Healthcare developments                                                                                                                                                                                                                                                                                                  |
| <b>7</b>                    | İzmir Economic Congress, economic policies in the first years of the Republic, the World Economic Depression in 1929 and its reflection on the statist economic policy agenda of Turkey, and the I. Five-Year Development Program.                                                                                       |
| <b>8</b>                    | Midterm                                                                                                                                                                                                                                                                                                                  |
| <b>9</b>                    | Kemalist Thought System, its scope and Principles (republicanism, secularism, nationalism, populism, statism, reformism) and threats to those principles.                                                                                                                                                                |
| <b>10</b>                   | The Atatürk Era and Turkish Foreign Policy in the Interwar Period I (1923-1930): Turkey's bilateral relations with the European states following the Lausanne Treaty                                                                                                                                                     |
| <b>11</b>                   | Turkish Foreign Policy in the Interwar Period II (1930-1938)                                                                                                                                                                                                                                                             |
| <b>12</b>                   | II. World war                                                                                                                                                                                                                                                                                                            |
| <b>13</b>                   | The second World war and Turkey                                                                                                                                                                                                                                                                                          |
| <b>14</b>                   | Developments in the second world war                                                                                                                                                                                                                                                                                     |
| <b>15</b>                   | Final exam                                                                                                                                                                                                                                                                                                               |

**DESCRIPTION FORM OF COURSE**

| Course Code and Name: MAT106 Mathematics II |        |                                                                                                                                                                                                                                                                                                                                                                                |       | Program: Machinery                                                                                                                                                                                                                                             |      |                    |                                 |
|---------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                    | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                          | Total | Credits                                                                                                                                                                                                                                                        | ECTS | Language of Course | Course Type Compulsory/Elective |
| 2                                           | 2      | 0                                                                                                                                                                                                                                                                                                                                                                              | 2     | 2                                                                                                                                                                                                                                                              | 2    | Turkish            | Compulsory                      |
| Prerequisites of Course                     |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
| Course Instructor                           |        | Dr.Gülcan ATICI                                                                                                                                                                                                                                                                                                                                                                |       | Mail : gatici@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=">https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=</a> |      |                    |                                 |
| Aims of Course                              |        | The aim of this course is to teach students advanced mathematics topics such as basic trigonometry, functions, limits, derivatives, matrices, and integrals. It aims to prepare students for more complex calculations they will face in the technical field by enabling them to use this knowledge for solving engineering problems and gaining mathematical analysis skills. |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
| Course Learning Outcomes and Competencies   |        | Upon successful completion of this course, the student can apply basic trigonometric functions, matrix operations, and systems of equations. They can analyze the concepts of limits and continuity. They can apply derivative and integral calculations to engineering problems. They can accurately calculate area, volume, and center of mass using integration.            |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
| Textbooks and /or Other Required Materials  |        | Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
| Method of delivery of the course            |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                                                                                                |      |                    |                                 |
| Teaching Methods and Techniques             |        | Explanation, Demonstration, Question-Answer, Discussion                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                                                |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                               |          |           |
|--|-----------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab,<br/>Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                    | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                              |
|-----------------------------|----------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                              |
| <b>1</b>                    | • Basic Trigonometry                         |
| <b>2</b>                    | • Trigonometric Functions                    |
| <b>3</b>                    | • Matrices                                   |
| <b>4</b>                    | • System of Equations                        |
| <b>5</b>                    | • Limit                                      |
| <b>6</b>                    | • Continuity                                 |
| <b>7</b>                    | • <b>Midterm Exam</b>                        |
| <b>8</b>                    | • Derivative                                 |
| <b>9</b>                    | • Graphs of Functions                        |
| <b>10</b>                   | • Integral                                   |
| <b>11</b>                   | • Integral                                   |
| <b>12</b>                   | • Integral                                   |
| <b>13</b>                   | • General Applications and Problem Solutions |
| <b>14</b>                   | • General Review                             |

### DESCRIPTION FORM OF COURSE

|                                                        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                                                                    |      |                    |                                 |
|--------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name:<br>MAL110 Material Technology II |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       | Program: Machine Technology                                                                                                                                                                                                        |      |                    |                                 |
| Semester                                               | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Total | Credits                                                                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                        | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3     | 3                                                                                                                                                                                                                                  | 4    | Türkish            | Compulsory                      |
| Prerequisites of Course                                |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                      |        | Assoc. Prof. Dr. Yakup SAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       | Mail : yakupsay@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                         |        | <ul style="list-style-type: none"><li>• To teach students the techniques of metallographic examination and sample preparation.</li><li>• To provide fundamental knowledge on phase identification and microstructure analysis.</li><li>• To enable students to read and interpret Fe-C equilibrium diagrams.</li><li>• To deliver information about the structure, properties, and classification of steels and cast irons.</li><li>• To explain types of heat treatments applied to steels and their effects on microstructure and mechanical properties.</li><li>• To teach the production, properties, and applications of plain carbon and alloy steels.</li><li>• To provide knowledge about the types, production, and applications of cast irons.</li><li>• To introduce the basic properties and engineering applications of non-ferrous metals.</li><li>• To develop students' ability to analyze the microstructure-property relationship of various metallic materials and to select appropriate materials for engineering applications</li></ul> |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies              |        | <ul style="list-style-type: none"><li>• Apply metallographic sample preparation and microstructure examination techniques.</li><li>• Identify and analyze different phases and microstructures.</li><li>• Read and interpret Fe-C equilibrium diagrams.</li><li>• Explain the structures, properties, and classifications of steels and cast irons.</li><li>• Evaluate heat treatment processes applied to steels and their effects on microstructure and mechanical properties.</li><li>• Distinguish the production methods and application areas of plain carbon and alloy steels.</li><li>• Explain the types, production methods, and applications of cast irons.</li><li>• Describe the basic properties and engineering applications of non-ferrous metals.</li><li>• Analyze the microstructure-property relationship in various metallic materials and select appropriate materials.</li></ul>                                                                                                                                                      |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials             |        | Prof. Dr. Hüseyin Uzun, "Malzeme Bilgisi ve Muayenesi" [in Turkish], Nobel Akademik Yayıncılık<br>Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                       |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                        |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                                                                                                                    |      |                    |                                 |



| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                              |
|----------------------|------------------------------------------------------------------------------|
| Week                 | Syllabus                                                                     |
| 1                    | Introduction to Metallographic Examination and Sample Preparation Techniques |
| 2                    | Microstructure Analysis and Phase Identification                             |
| 3                    | Introduction to Fe-C Equilibrium Diagrams                                    |
| 4                    | Interpretation of Fe-C Equilibrium Diagrams                                  |
| 5                    | Classification and Properties of Steels                                      |
| 6                    | Classification and Properties of Cast Irons                                  |
| 7                    | Midterm Exam                                                                 |
| 8                    | Heat Treatment of Steels: Annealing, Hardening, Tempering                    |
| 9                    | Plain Carbon Steels: Production and Applications                             |
| 10                   | Alloy Steels: Types and Applications                                         |
| 11                   | Cast Irons: Production Methods and Applications                              |
| 12                   | Non-Ferrous Metals: Basic Properties and Classification                      |
| 13                   | Engineering Applications of Non-Ferrous Metals                               |
| 14                   | Microstructure-Property Relationship in Different Metallic Materials         |
| 15                   | Final Exam                                                                   |

### DESCRIPTION FORM OF COURSE

|                                                   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                    |                                                                                                                                  |                    |                                 |
|---------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------|
| Course Code and Name: TDI 104 Turkish Language II |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       | Program: Machinery |                                                                                                                                  |                    |                                 |
| Semester                                          | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Total | Credits            | ECTS                                                                                                                             | Language of Course | Course Type Compulsory/Elective |
| 1                                                 | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2     | 2                  | 2                                                                                                                                | Turkish            | Compulsory                      |
| Prerequisites of Course                           |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                    |                                                                                                                                  |                    |                                 |
| Course Instructor                                 |        | Lecturer Seval PERK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                    | Mail : sperk@munzur.edu.tr<br>Web :<br>www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/Çocuk Gelişimi/Sayfalar/akadro.aspx |                    |                                 |
| Aims of Course                                    |        | <ul style="list-style-type: none"><li>It aims to teach and/or remind students of the importance and subtleties of the Turkish Language and reinforce this with correct Turkish usage and resources.</li><li>It also aims to enable students to use Turkish more consciously in their daily conversations and correspondence throughout the course.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                    |                                                                                                                                  |                    |                                 |
| Course Learning Outcomes and Competencies         |        | Will be able to acquire knowledge for correct and proper expression.<br><br>Will know the importance of written expression and will be able to write compositions.<br><br>Will know the communication rules in oral expression.<br><br>Will be able to grasp Turkish grammar.<br><br>Will know and apply sound events.<br><br>Will be able to understand morphology (root-stem-suffixes).<br><br>Will be able to analyze words in terms of their structures.<br><br>Will develop and change words.<br><br>Will be able to derive new words.<br><br>Will be able to use the principles and techniques of speaking and discussion.<br><br>Will be able to apply Turkish spelling rules in speaking and discussion.<br><br>Will be able to notice and correct expression disorders in oral and written expressions. |       |                    |                                                                                                                                  |                    |                                 |
| Textbooks and /or Other Required Materials        |        | Zeynep Korkmaz ve ark., Türk Dili ve Kompozisyon Bilgileri, 6. Baskı, Ankara: Yargı Yayınevi, 2003.<br>Yusuf Çotuksöken, Türk Dili, c. I-II, Papatya yay., 2003.<br>Akın Önen, Türkçeyi Türkçe Konuşmak (Diksiyon - Spikerlik - Etkili Konuşma), İnkılap Yayınevi, İstanbul, 2007.<br>Mustafa Durmuş, Türk Dili El Kitabı, Grafiker Yay., 2009.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                    |                                                                                                                                  |                    |                                 |

|                                         |                                                                                                                                |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                         | Muharrem Ergin, Türk Dil Bilgisi, Bayrak Basım Yayım Tanıtım, İstanbul, İbrahim Delice, Türkçe Sözdizimi, Kitabevi Yay., 2007. |
| <b>Method of delivery of the course</b> | Online                                                                                                                         |
| <b>Teaching Methods and Techniques</b>  | Explanation, Question-Answer                                                                                                   |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |
|                            | <b>Semester Final Exam</b>                | X                              | <b>60</b>                                                 |

| <b>Semester Course Plan</b> |                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                   |
| <b>1</b>                    | • Punctuation marks (Period, comma, semicolon, colon, exclamation point...)                       |
| <b>2</b>                    | • Spelling rules (Writing of capital letters, numbers, compound words)                            |
| <b>3</b>                    | • Spelling rules (Writing of idioms, reduplications, loanwords and foreign proper names)          |
| <b>4</b>                    | • Spelling rules (Writing of abbreviations and some suffixes)                                     |
| <b>5</b>                    | • Composition (definition, purpose, methods of being successful in composition)                   |
| <b>6</b>                    | • Methods in writing composition (formation of supporting and main ideas, planning)               |
| <b>7</b>                    | • Methods in writing composition (paragraph creation, methods of developing thought in paragraph) |
| <b>8</b>                    | • <b>Midterm Exam</b>                                                                             |
| <b>9</b>                    | • Expression characteristics                                                                      |
| <b>10</b>                   | • Expression disorders                                                                            |
| <b>11</b>                   | • Types of expression (oral expression)                                                           |

|    |                                                                              |
|----|------------------------------------------------------------------------------|
| 12 | • Types of expression (written expression: resume, petition...)              |
| 13 | • Types of expression (written expression: story, novel, theater, poetry...) |
| 14 | • <b>Final exam</b>                                                          |
| 15 | • Punctuation marks (Period, comma, semicolon, colon, exclamation point...)  |

**DESCRIPTION FORM OF COURSE**

|                                                   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
|---------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------|
| Course Code and Name: YDI 108 Foreign Language II |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       | Program: Machinnery |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Semester                                          | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Total | Credits             | ECTS                                                                                                                                                                                                                                                                                     | Language of Course | Course Type Compulsory/Elective |
| 1                                                 | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2     | 2                   | 4                                                                                                                                                                                                                                                                                        | English            | Compulsory                      |
| Prerequisites of Course                           |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Course Instructor                                 |        | Lecturer Dr. Eda TAYŞI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                     | Mail : <a href="mailto:edataysi@munzur.edu.tr">edataysi@munzur.edu.tr</a><br>Web : <a href="http://munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/yabanciKultur/Pages/akadro_en.aspx">http://munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/yabanciKultur/Pages/akadro_en.aspx</a> |                    |                                 |
| Aims of Course                                    |        | To provide students with knowledge of English grammar and to enable them to use it in daily life.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Course Learning Outcomes and Competencies         |        | 1. Will be able to learn the tenses used in English.<br>1.1. Knows that Present Continuous Tense will be used in the present tense.<br>1.2. Learns that Past Tense will be used in the past tense.<br>2. Will be able to make dialogues in English and use the tenses he/she learned.<br>2.1. Learns formulaic words in dialogues.<br>2.2. Learns dialogues on dating, travel, accommodation and health.<br>3. Will be able to read English texts.<br>3.1. Reads and comments on English stories.<br>Reads English newspaper articles. Translates them into Turkish. |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Textbooks and /or Other Required Materials        |        | Hutchinson,T. TABOR, C.QUINTANA, J. EADIE, K. English For Life. Oxford University Press<br>Azar, B. Basic English Grammar                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Method of delivery of the course                  |        | Online, face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |
| Teaching Methods and Techniques                   |        | Explanation, Question-Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                     |                                                                                                                                                                                                                                                                                          |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |

|  |                                           |          |           |
|--|-------------------------------------------|----------|-----------|
|  | <b>Oral Exam</b>                          |          |           |
|  | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                |
|-----------------------------|----------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                |
| <b>1</b>                    | Simple Present Tense                                           |
| <b>2</b>                    | Present Continuous Tense                                       |
| <b>3</b>                    | Simple Past Tense                                              |
| <b>4</b>                    | Past Continuous Tense                                          |
| <b>5</b>                    | Present Perfect Tense                                          |
| <b>6</b>                    | Past Perfect Tense                                             |
| <b>7</b>                    | Future Tense                                                   |
| <b>8</b>                    | Midterm Exam                                                   |
| <b>9</b>                    | Adjectives                                                     |
| <b>10</b>                   | Adverbs                                                        |
| <b>11</b>                   | Making Suggestions, Tag Questions                              |
| <b>12</b>                   | Translation from English to Turkish, from Turkish to English   |
| <b>13</b>                   | Reading, analyzing, interpreting, and evaluating English texts |
| <b>14</b>                   | General Evaluation                                             |
| <b>15</b>                   | Final exam                                                     |

**DESCRIPTION FORM OF COURSE**

|                                                       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
|-------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TMÜ215 Manufacturing Management |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | Program: Machinery                                                                                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                              | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Total | Credits                                                                                                                                                                                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| 3                                                     | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2     | 2                                                                                                                                                                                                                                                                                                   | 2    | Turkish            | Compulsory                      |
| Prerequisites of Course                               |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Instructor                                     |        | Assoc. Prof. Dr.Ersen YILMAZ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       | Mail : ersenyilmaz@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0">https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0</a> |      |                    |                                 |
| Aims of Course                                        |        | The course aims to introduce students to the fundamental concepts, organization, and management techniques of modern production systems. It aims to teach basic production types, methods for determining factory location (including numerical valuation methods), capacity planning, product trees, and inventory management (static and dynamic methods). Thus, students gain the ability to effectively plan and control production processes.                                                                                  |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies             |        | Upon successful completion of this course, the student can explain the basic concepts and basic production types in production management. They can apply numerical and analytical methods used for factory location and capacity planning. They can perform product tree and parts list analyses used in production processes. They can evaluate different in-plant layout arrangements and solve inventory management problems using basic inventory control methods (basic model, fixed quantity model, production model, etc.). |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials            |        | Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                      |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                       |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                           |          |           |
|--|-------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                                                                                                                                                        |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                                                                                                                                        |
| <b>1</b>                    | Basic concepts in production management. Production systems.                                                                                                                                                                           |
| <b>2</b>                    | Production factors, production method, and product-related characteristics of production systems.                                                                                                                                      |
| <b>3</b>                    | Definition, characteristics, and areas of work for Production Management. Production functions.                                                                                                                                        |
| <b>4</b>                    | Basic production types and features. Film screening related to the production of different products.                                                                                                                                   |
| <b>5</b>                    | Determining the factory location. Numerical valuation methods used in determining the location. (Weighted factors method, Profitability comparison method, Cost analysis method, Break-even analysis method, and DP Problem examples). |
| <b>6</b>                    | Capacity planning. (Theoretical, practical, optimum capacity, degree of utilization, DP Examples).                                                                                                                                     |
| <b>7</b>                    | <b>Midterm Exam</b>                                                                                                                                                                                                                    |
| <b>8</b>                    | Capacity economy in production (REFA). Determination of capacity in terms of time for human and production tools.                                                                                                                      |
| <b>9</b>                    | Types and features of product trees, types and features of parts lists. Parts list analysis.                                                                                                                                           |
| <b>10</b>                   | In-plant layout. Types of factory layout (by product and by process).                                                                                                                                                                  |
| <b>11</b>                   | Programmed workplace layout algorithms. Qualitative and quantitative tools used in layout (Relationship and load graphs, Pairwise exchange method).                                                                                    |
| <b>12</b>                   | Inventory management. Inventory costs, inventory control methods. Static methods (Basic model, fixed quantity model, production model, discounted price model).                                                                        |
| <b>13</b>                   | Dynamic methods (Wagner-Whitin Method, Least total cost method, Least unit cost method).                                                                                                                                               |
| <b>14</b>                   | General Review                                                                                                                                                                                                                         |



**DESCRIPTION FORM OF COURSE**

| Course Code and Name: BDÜ203 Computer Aided Manufacturing |        |                                                                                                                                                                                                                                                                                                                                      |       | Programme: Machine Techonolgy                                                                                                                                                      |      |                    |                                 |
|-----------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                                  | Theory | Prac.                                                                                                                                                                                                                                                                                                                                | Total | Credits                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| 3                                                         | 2      | 2                                                                                                                                                                                                                                                                                                                                    | 3     | 3                                                                                                                                                                                  | 5    | Turkish            | Compulsory                      |
| Prerequisites of Course                                   |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                         |        | Assistant Professor Dr. Ali Kemal ASLAN                                                                                                                                                                                                                                                                                              |       | E-posta : akaslan@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                            |        | The aim of this course is to teach the basics of computer-aided manufacturing and to teach how to write codes for manufacturing of a design.                                                                                                                                                                                         |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies                 |        | 1. Understands the basics of computer-aided manufacturing<br>2. Recognizes and can use the main screens of CAM programs<br>3. Recognizes the general structure of CNC machines<br>4. Can use a simulation program for computer-aided manufacturing<br>5. Knows and can use the basic program codes for computer-aided manufacturing. |       |                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials                |        | - Course Notes                                                                                                                                                                                                                                                                                                                       |       |                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                          |        | Face to face, Online                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                           |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                       |       |                                                                                                                                                                                    |      |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semestr Course Plan</b> |                                                                 |
|----------------------------|-----------------------------------------------------------------|
| <b>Week</b>                | <b>Syllabus</b>                                                 |
| <b>1</b>                   | Fundamentals of Numerical Control                               |
| <b>2</b>                   | Using Areas of Numerical Control CNC Machines                   |
| <b>3</b>                   | Structure of CNC Machines                                       |
| <b>4</b>                   | Computer Aided Design (CAD), Computer Aided Manufacturing (CAM) |
| <b>5</b>                   | Standard Connection Elements                                    |
| <b>6</b>                   | Fundamentals of the CNC Programming                             |
| <b>7</b>                   | Introduction to Programming CNC                                 |
| <b>8</b>                   | Midterm Exam                                                    |
| <b>9</b>                   | Use of Swansoft Simulation Program                              |
| <b>10</b>                  | Introduce of Basic G-M Codes                                    |
| <b>11</b>                  | Examples of Basic G-M Codes                                     |
| <b>12</b>                  | Examples of G00, G01, G04, G08, G20, G21 Codes                  |
| <b>13</b>                  | Programming According to ISO System                             |
| <b>14</b>                  | Examples of ISO System                                          |

**DESCRIPTION FORM OF COURSE**

|                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                                                                                  |      |                    |                                 |
|----------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MİS213 Heating Systems |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       | Program: Machinery                                                                                                               |      |                    |                                 |
| Semester                                     | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Total | Credits                                                                                                                          | ECTS | Language of Course | Course Type Compulsory/Elective |
| 3                                            | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2     | 2                                                                                                                                | 2    | Turkish            | Compulsory                      |
| Prerequisites of Course                      |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                                                                                                                  |      |                    |                                 |
| Course Instructor                            |        | Öğr.Gör. Eda BAKIR GÜR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       | Mail : edabakir@munzur.edu.tr<br>Web :<br>https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                               |        | The Heating Systems course aims to teach students about different heating methods, the components of these systems, and their operating principles. The course covers the design, calculation, and efficiency analysis of heating systems used in residential, commercial, and industrial buildings. Additionally, system evaluations are conducted with consideration of the effective use of energy sources, sustainability, and environmental impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                  |      |                    |                                 |
| Course Learning Outcomes and Competencies    |        | <ol style="list-style-type: none"><li><b>Identify different heating systems:</b> Can distinguish between central and individual heating systems along with their operating principles.</li><li><b>Perform heat loss calculations:</b> Can analyze heat loss in buildings and determine the appropriate system capacity.</li><li><b>Select system components:</b> Can choose components such as boilers, radiators, pipes, and expansion tanks according to suitable conditions.</li><li><b>Analyze energy efficiency:</b> Can evaluate the energy consumption of heating systems and suggest measures to improve efficiency.</li><li><b>Compare fuel types:</b> Can analyze energy sources such as natural gas, electricity, solid and liquid fuels from technical and economic perspectives.</li><li><b>Assess environmental impacts:</b> Can analyze carbon emissions and environmental effects of heating systems and propose sustainable solutions.</li></ol> |       |                                                                                                                                  |      |                    |                                 |
| Textbooks and /or Other Required Materials   |        | Lecture notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                  |      |                    |                                 |
| Method of delivery of the course             |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                  |      |                    |                                 |
| Teaching Methods and Techniques              |        | Explanation, Presentation, Group study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                                                                  |      |                    |                                 |

|  |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|--|------------------------|--------------------------------|-----------------------------------------------------------|
|  | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|  | <b>2. Midterm Exam</b> |                                |                                                           |

|                            |                                           |          |           |
|----------------------------|-------------------------------------------|----------|-----------|
| <b>Evaluation Criteria</b> | <b>3. Midterm Exam</b>                    |          |           |
|                            | <b>Oral Exam</b>                          |          |           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|                            | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                    |
|-----------------------------|----------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                    |
| <b>1</b>                    | Heat Sources                                       |
| <b>2</b>                    | Heat Pump                                          |
| <b>3</b>                    | Central Heating Systems                            |
| <b>4</b>                    | Heat Loss Calculation                              |
| <b>5</b>                    | Determination and Placement of Heaters             |
| <b>6</b>                    | Boilers                                            |
| <b>7</b>                    | Boilers                                            |
| <b>8</b>                    | Pipe Diameter Calculation                          |
| <b>9</b>                    | Pipe Diameter Calculation                          |
| <b>10</b>                   | Floor Heating Systems Calculation                  |
| <b>11</b>                   | Maintenance and Repair of Heating Systems          |
| <b>12</b>                   | Maintenance and Repair of Heating Systems          |
| <b>13</b>                   | Automatic Control and Equipment in Heating Systems |
| <b>14</b>                   | Automatic Control and Equipment in Heating Systems |

**DESCRIPTION FORM OF COURSE**

|                                                 |        |                                                                                                                                                                                                                   |       |                                                                                                                                                                                   |      |                    |                                 |
|-------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MKT207 Welding technology |        |                                                                                                                                                                                                                   |       | Program: Machinery                                                                                                                                                                |      |                    |                                 |
| Semester                                        | Theory | Prac.                                                                                                                                                                                                             | Total | Credits                                                                                                                                                                           | ECTS | Language of Course | Course Type Compulsory/Elective |
| 3                                               | 2      | 2                                                                                                                                                                                                                 | 4     | 3                                                                                                                                                                                 | 5    | Turkish            | Compulsory                      |
| Prerequisites of Course                         |        | There are no prerequisites.                                                                                                                                                                                       |       |                                                                                                                                                                                   |      |                    |                                 |
| Course Instructor                               |        | Lecturer Salih AĞAR                                                                                                                                                                                               |       | Mail : salihagar@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                  |        | It is aimed to provide competence in fusion-based welding methods and welding under protective atmosphere.                                                                                                        |       |                                                                                                                                                                                   |      |                    |                                 |
| Course Learning Outcomes and Competencies       |        | 1. To do gas fusion welding<br>2. To do electric arc welding<br>3. To do gas atmosphere (MIG/MAG) welding<br>4. To do Tig welding<br>5. To know the types of welding joints and to be able to choose between them |       |                                                                                                                                                                                   |      |                    |                                 |
| Textbooks and /or Other Required Materials      |        | Lecture Notes                                                                                                                                                                                                     |       |                                                                                                                                                                                   |      |                    |                                 |
| Method of delivery of the course                |        | Face to face                                                                                                                                                                                                      |       |                                                                                                                                                                                   |      |                    |                                 |
| Teaching Methods and Techniques                 |        | Explanation, Q&A and applications                                                                                                                                                                                 |       |                                                                                                                                                                                   |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                               |          |           |
|--|-----------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab,<br/>Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                    | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                        |
|-----------------------------|--------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                        |
| <b>1</b>                    | Gas fusion welding definition theory and calculation   |
| <b>2</b>                    | Gas fusion welding definition theory and calculation   |
| <b>3</b>                    | Gas fusion welding application                         |
| <b>4</b>                    | Gas fusion welding application                         |
| <b>5</b>                    | Electric arc welding definition theory and calculation |
| <b>6</b>                    | Electric arc welding definition theory and calculation |
| <b>7</b>                    | Electric arc welding application                       |
| <b>8</b>                    | Midterm Exam                                           |
| <b>9</b>                    | Electric arc welding application                       |
| <b>10</b>                   | MIG welding definition theory and calculation          |
| <b>11</b>                   | MIG welding application                                |
| <b>12</b>                   | TIG welding definition theory and calculation          |
| <b>13</b>                   | TIG welding application                                |
| <b>14</b>                   | General Application                                    |
| <b>15</b>                   | Final exam                                             |

**DESCRIPTION FORM OF COURSE**

|                                                   |        |                                                                                                                                                                                                                                |       |                                                                                                                                                                                   |      |                    |                                 |
|---------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MTT205 CNC Lathe Technology |        |                                                                                                                                                                                                                                |       | Program: Machinery                                                                                                                                                                |      |                    |                                 |
| Semester                                          | Theory | Prac.                                                                                                                                                                                                                          | Total | Credits                                                                                                                                                                           | ECTS | Language of Course | Course Type Compulsory/Elective |
| 3                                                 | 2      | 2                                                                                                                                                                                                                              | 4     | 3                                                                                                                                                                                 | 5    | Turkish            | Compulsory                      |
| Prerequisites of Course                           |        | There are no prerequisites.                                                                                                                                                                                                    |       |                                                                                                                                                                                   |      |                    |                                 |
| Course Instructor                                 |        | Lecturer Salih AĞAR                                                                                                                                                                                                            |       | Mail : salihagar@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                    |        | Gaining the skills to prepare the CNC lathe, write programs and manufacture                                                                                                                                                    |       |                                                                                                                                                                                   |      |                    |                                 |
| Course Learning Outcomes and Competencies         |        | 1. Getting preliminary information about CNC lathe<br>2. Writing a program for CNC lathe<br>3. Preparing CNC lathe for work<br>4. Analysing the tool path of the program created on CNC lathe<br>5. Manufacturing on CNC lathe |       |                                                                                                                                                                                   |      |                    |                                 |
| Textbooks and /or Other Required Materials        |        | Lecture Notes                                                                                                                                                                                                                  |       |                                                                                                                                                                                   |      |                    |                                 |
| Method of delivery of the course                  |        | Face to face                                                                                                                                                                                                                   |       |                                                                                                                                                                                   |      |                    |                                 |
| Teaching Methods and Techniques                   |        | Explanation, Q&A and applications                                                                                                                                                                                              |       |                                                                                                                                                                                   |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                           |          |           |
|--|-------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                                                   |
| <b>1</b>                    | Features of CNC lathe Parts of CNC lathe Working principles of CNC lathe                                                                          |
| <b>2</b>                    | Machine coordinate axes, Reference points Control panel types, Cutter and workpiece material relationship                                         |
| <b>3</b>                    | Cutter and workpiece material relationship Cutter types, features and places of use Tool compensation settings Tool holders and clamping elements |
| <b>4</b>                    | Zero points on parts Giving cutting depth, process angle and feed                                                                                 |
| <b>5</b>                    | Programming principles in CNC lathes Positioning systems, Process and preparation commands, Auxiliary commands Special commands                   |
| <b>6</b>                    | General program writing applications                                                                                                              |
| <b>7</b>                    | General program writing applications                                                                                                              |
| <b>8</b>                    | Midterm Exam                                                                                                                                      |
| <b>9</b>                    | Programming using cycles in CNC lathe                                                                                                             |
| <b>10</b>                   | G71, G72 and G73 cycles                                                                                                                           |
| <b>11</b>                   | G71, G72 and G73 cycle applications                                                                                                               |
| <b>12</b>                   | Hole drilling, threading and internal diameter removal applications                                                                               |
| <b>13</b>                   | Laboratory applications                                                                                                                           |
| <b>14</b>                   | Laboratory applications                                                                                                                           |
| <b>15</b>                   | Final exam                                                                                                                                        |



**DESCRIPTION FORM OF COURSE**

| Course Code and Name: MII201 Manufacturing Processes II |        |                                                                                                                                                                                                                                                                                        |       | Programme: Machine Techonolgy                                                                                                                                                      |      |                    |                                 |
|---------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                                | Theory | Prac.                                                                                                                                                                                                                                                                                  | Total | Credits                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| 3                                                       | 3      | 0                                                                                                                                                                                                                                                                                      | 3     | 3                                                                                                                                                                                  | 3    | Turkish            | Compulsory                      |
| Prerequisites of Course                                 |        | There are no prerequisites.                                                                                                                                                                                                                                                            |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                       |        | Assistant Professor Dr. Ali Kemal ASLAN                                                                                                                                                                                                                                                |       | E-posta : akaslan@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                          |        | The aim of this course is to teach the finishing processes after machining, casting and its varieties, and to comprehend the manufacturing methods of non-metallic materials.                                                                                                          |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies               |        | 1. Students will be able to know and can apply machining processes<br>2. Students will be able to design and manufacture molds for casting.<br>3. Students will be able to process sheet metals.<br>4. Students will be able to know the manufacturing methods of non-metal materials. |       |                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials              |        | -Course Notes                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                        |        | Face to face, Online                                                                                                                                                                                                                                                                   |       |                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                         |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                         |       |                                                                                                                                                                                    |      |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

**Semester Final Exam**

**X**

**60**

**Semestr Course Plan**

**Week**

**Syllabus**

**1**

Precious Finishing Processes After Machining

**2**

Part Manufacturing by casting

**3**

Solidification Mechanisms in Casting

**4**

Foundry Sands and Properties

**5**

Casting Models, Properties, Classification, Manufacturing Methods

**6**

Cores

**7**

Mold Manufacturing

**8**

Midterm Exam

**9**

Mold Manufacturing

**10**

Classification of Casting Methods According to Mold Deterioration Status

**11**

Sand Mold Casting, Ceramic Mold Casting, Plaster Mold Casting

**12**

Precision Casting, Full Mold Casting

**13**

Centrifugal Casting, Metal Mold Casting, Pressure Casting, Continuous Casting

**14**

General Overview

### DESCRIPTION FORM OF COURSE

|                                                                                       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |                                                                                                                                                                                                                                                     |             |                           |                                        |
|---------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------|----------------------------------------|
| <b>Course Code and Name:</b><br><b>MAY211 Non-Traditional Manufacturing Processes</b> |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              | <b>Program: Machine Technology</b>                                                                                                                                                                                                                  |             |                           |                                        |
| <b>Semester</b>                                                                       | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Total</b> | <b>Credits</b>                                                                                                                                                                                                                                      | <b>ECTS</b> | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Fall Semester                                                                         | 3             | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3            | 3                                                                                                                                                                                                                                                   | 3           | Türkish                   | Compulsory                             |
| <b>Prerequisites of Course</b>                                                        |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                                                                                                                                                                                                                                                     |             |                           |                                        |
| <b>Course Instructor</b>                                                              |               | Assoc. Prof. Dr. Yakup SAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              | <b>Mail :</b> yakupsay@munzur.edu.tr<br><b>Web :</b><br><a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx</a> |             |                           |                                        |
| <b>Aims of Course</b>                                                                 |               | <ul style="list-style-type: none"><li>• To teach students the fundamental differences between conventional and non-traditional manufacturing methods.</li><li>• To introduce the principles and applications of non-traditional manufacturing processes (electro discharge machining, electrochemical machining, electron beam machining, laser machining, plasma machining, ultrasonic machining, water jet machining).</li><li>• To enable students to analyze the advantages, limitations, and industrial applications of various manufacturing methods.</li><li>• To develop students’ ability to select appropriate manufacturing methods and evaluate process parameters.</li><li>• To emphasize the importance of innovative manufacturing technologies in engineering applications.</li></ul> |              |                                                                                                                                                                                                                                                     |             |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>                                      |               | <ul style="list-style-type: none"><li>• Identify and compare conventional and non-traditional manufacturing methods.</li><li>• Explain the basic principles of electro discharge machining, electrochemical machining, electron beam machining, laser machining, plasma machining, ultrasonic machining, and water jet machining.</li><li>• Analyze the advantages, limitations, and application areas of non-traditional manufacturing methods.</li><li>• Select and evaluate appropriate process parameters for different manufacturing methods.</li><li>• Determine and justify the most suitable manufacturing method for an industrial problem.</li><li>• Discuss the importance of innovative manufacturing technologies in engineering applications</li></ul>                                  |              |                                                                                                                                                                                                                                                     |             |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>                                     |               | Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |                                                                                                                                                                                                                                                     |             |                           |                                        |
| <b>Method of delivery of the course</b>                                               |               | Face to face,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                                                                                                                                                                                                                                                     |             |                           |                                        |
| <b>Teaching Methods and Techniques</b>                                                |               | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |                                                                                                                                                                                                                                                     |             |                           |                                        |

| <b>Evaluation Criteria</b> |                                               | <b>If yes, please mark<br/>(X)</b> | <b>Percentage (%)<br/>Contribution to the<br/>Overall Average</b> |
|----------------------------|-----------------------------------------------|------------------------------------|-------------------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                        | X                                  | <b>40</b>                                                         |
|                            | <b>2. Midterm Exam</b>                        |                                    |                                                                   |
|                            | <b>3. Midterm Exam</b>                        |                                    |                                                                   |
|                            | <b>Oral Exam</b>                              |                                    |                                                                   |
|                            | <b>Practical Exam (Lab,<br/>Project etc.)</b> |                                    |                                                                   |
|                            | <b>Semester Final Exam</b>                    | X                                  | <b>60</b>                                                         |

| <b>Semester Course Plan</b> |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                        |
| <b>1</b>                    | Introduction to Conventional and Non-Traditional Manufacturing Methods |
| <b>2</b>                    | Classification of Non-Traditional Manufacturing Processes              |
| <b>3</b>                    | Principles and Applications of Electro Discharge Machining (EDM)       |
| <b>4</b>                    | Electrochemical Machining (ECM) Process                                |
| <b>5</b>                    | Electron Beam Machining (EBM) Process                                  |
| <b>6</b>                    | Laser Machining Methods                                                |
| <b>7</b>                    | Midterm Exam                                                           |
| <b>8</b>                    | Plasma Machining Methods                                               |
| <b>9</b>                    | Ultrasonic Machining Methods                                           |
| <b>10</b>                   | Water Jet Machining Methods                                            |
| <b>11</b>                   | Tool and Machine Technologies in Non-Traditional Methods               |
| <b>12</b>                   | Effects and Optimization of Process Parameters                         |
| <b>13</b>                   | Industrial Application Examples and Comparisons                        |
| <b>14</b>                   | Current Developments and Future Manufacturing Technologies             |
| <b>15</b>                   | Final Exam                                                             |

**DESCRIPTION FORM OF COURSE**

| Course Code and Name: MTM210 Reverse Engineering and Quality Control |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | Program: Machinery                                                                                                                                                                                                                                                                                  |      |                    |                                 |
|----------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                                             | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Total | Credits                                                                                                                                                                                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| 4                                                                    | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3     | 3                                                                                                                                                                                                                                                                                                   | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                                              |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Instructor                                                    |        | Assoc. Prof. Dr.Ersen YILMAZ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | Mail : ersenyilmaz@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0">https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0</a> |      |                    |                                 |
| Aims of Course                                                       |        | The aim of this course is to teach students the reverse engineering (RE) processes, which are vital in the industry, and the quality control methods that are an inseparable part of these processes. The course aims to teach students how to perform reverse engineering and quality control operations on the final product using data obtained through scanning and data optimization, starting from the establishment and calibration of 3D Optical Measurement systems. It also aims to equip students with photogrammetric measurement and digitalization skills. |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies                            |        | Upon successful completion of this course, the student can set up and calibrate 3D Optical Measurement systems. They can scan a physical object and optimize the data. They can apply reverse engineering processes with the obtained data. They can perform quality control procedures on parts. They can set up a system for photogrammetric measurement, take shots, and digitize the photographs.                                                                                                                                                                    |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials                           |        | Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                                     |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                                      |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |

|  |                                           |          |           |
|--|-------------------------------------------|----------|-----------|
|  | <b>Oral Exam</b>                          |          |           |
|  | <b>Practical Exam (Lab, Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                       |
|-----------------------------|-------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                       |
| <b>1</b>                    | • Reverse Engineering (Introduction)                  |
| <b>2</b>                    | • 3D Scanning Systems                                 |
| <b>3</b>                    | • Digital and Analog Scanning Systems                 |
| <b>4</b>                    | • Data Optimization                                   |
| <b>5</b>                    | • Setup of 3D Optical Measurement System              |
| <b>6</b>                    | • Calibration                                         |
| <b>7</b>                    | • <b>Midterm Exam</b>                                 |
| <b>8</b>                    | • Quality Control (Introduction)                      |
| <b>9</b>                    | • Use of Reverse Engineering in Quality Control       |
| <b>10</b>                   | • Setup of Photogrammetric Measurement System         |
| <b>11</b>                   | • Positioning of Auxiliary Equipment and Taking Shots |
| <b>12</b>                   | • Digitization of Photographs and Exporting Points    |
| <b>13</b>                   | • Reverse Engineering (Application)                   |
| <b>14</b>                   | • Quality Control (Application)                       |

### DESCRIPTION FORM OF COURSE

|                                                  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                    |      |                    |                                 |
|--------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MCE214 CNC Electro Erosion |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | Program: Machine Technology                                                                                                                                                                                                        |      |                    |                                 |
| Semester                                         | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Total | Credits                                                                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                  | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3     | 3                                                                                                                                                                                                                                  | 4    | Türkish            | Compulsory                      |
| Prerequisites of Course                          |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                |        | Assoc. Prof. Dr. Yakup SAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | Mail : yakupsay@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                   |        | <ul style="list-style-type: none"><li>To teach students the fundamental principles and history of CNC electro discharge machining (EDM).</li><li>To provide knowledge about the properties, selection, and preparation of electrodes.</li><li>To explain the technical details and operational stages of the CNC EDM process.</li><li>To deliver essential information on the types, properties, and application methods of dielectric fluids.</li><li>To instruct on electrode wear and corresponding solution methods.</li><li>To introduce the structure, operation, and maintenance requirements of CNC EDM machines.</li><li>To impart the principles and application areas of wire EDM (wire-cut EDM) technology.</li><li>To enable students to effectively utilize CNC EDM technology in industrial applications.</li></ul> |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies        |        | <ul style="list-style-type: none"><li>Explain the fundamental principles and history of CNC electro discharge machining (EDM).</li><li>Identify different types of electrodes, their properties, and preparation processes.</li><li>Analyze the technical details and operational stages of the CNC EDM process.</li><li>Evaluate the properties, types, and application methods of dielectric fluids.</li><li>Describe electrode wear mechanisms and solution strategies.</li><li>Define the structure, working principles, and maintenance requirements of CNC EDM machines.</li><li>Explain the principles and application areas of wire EDM (wire-cut EDM) technology.</li><li>Select the appropriate EDM method for industrial applications and optimize process parameters</li></ul>                                         |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials       |        | Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                 |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                  |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                                                    |      |                    |                                 |

| Evaluation Criteria |                                       | If yes, please mark<br>(X) | Percentage (%)<br>Contribution to the<br>Overall Average |
|---------------------|---------------------------------------|----------------------------|----------------------------------------------------------|
|                     | 1. Midterm Exam                       | X                          | 40                                                       |
|                     | 2. Midterm Exam                       |                            |                                                          |
|                     | 3. Midterm Exam                       |                            |                                                          |
|                     | Oral Exam                             |                            |                                                          |
|                     | Practical Exam (Lab,<br>Project etc.) |                            |                                                          |
|                     | Semester Final Exam                   | X                          | 60                                                       |

| Semester Course Plan |                                                                   |
|----------------------|-------------------------------------------------------------------|
| Week                 | Syllabus                                                          |
| 1                    | Introduction and History of CNC Electro Discharge Machining (EDM) |
| 2                    | Working Principles of CNC EDM                                     |
| 3                    | Electrode Properties and Material Selection                       |
| 4                    | Electrode Preparation and Shaping                                 |
| 5                    | Technical Details and Process Stages of CNC EDM                   |
| 6                    | Dielectric Fluids: Types and Properties                           |
| 7                    | Midterm Exam                                                      |
| 8                    | Application Methods of Dielectric Fluids                          |
| 9                    | Electrode Wear: Causes and Solutions                              |
| 10                   | CNC EDM Machines: Structure and Working Principle                 |
| 11                   | Maintenance and Troubleshooting in CNC Machines                   |
| 12                   | Wire EDM Method: Principles and Applications                      |
| 13                   | Industrial Applications of Wire EDM                               |
| 14                   | Optimization of Process Parameters in CNC EDM                     |
| 15                   | Final Exam                                                        |



**DESCRIPTION FORM OF COURSE**

|                                                            |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
|------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TMY220 OCCUPATIONAL FOREIGN LANGUAGE |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | Program: Machinery                                                                                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Total | Credits                                                                                                                                                                                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| 4                                                          | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2     | 2                                                                                                                                                                                                                                                                                                   | 3    | Turkish            | Elective                        |
| Prerequisites of Course                                    |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Instructor                                          |        | Assoc. Prof. Dr.Ersen YILMAZ                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       | Mail : ersenyilmaz@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0">https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0</a> |      |                    |                                 |
| Aims of Course                                             |        | The course aims to update students' general English knowledge and provide a language infrastructure that will form the basis for their professional competence. Specifically, it aims to help students understand, use, and improve their reading comprehension skills related to specific professional terms and topics in the machinery and technology fields, such as Computers, Software, Network Design, Pneumatics, and CAD/CAM, in English.                                                      |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies                  |        | Upon successful completion of this course, the student can use general English knowledge in a vocational context. They can understand and use English terms related to general technology topics such as computers, software, and network design. They can grasp technical terms specific to machinery engineering and manufacturing fields like Pneumatics and CAD/CAM in English. They can read English publications and documents in the vocational field and understand the main ideas and details. |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials                 |        | Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                           |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                            |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                               |          |           |
|--|-----------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab,<br/>Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                    | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                 |
| <b>1</b>                    | • Review and updating of general English knowledge to form a basis for vocational foreign language proficiency. |
| <b>2</b>                    | • Computers                                                                                                     |
| <b>3</b>                    | • Software                                                                                                      |
| <b>4</b>                    | • Network Design                                                                                                |
| <b>5</b>                    | • Network Design                                                                                                |
| <b>6</b>                    | • Pneumatics                                                                                                    |
| <b>7</b>                    | • CAD/CAM                                                                                                       |
| <b>8</b>                    | • Midterm Exam                                                                                                  |
| <b>9</b>                    | • Vocational Text Reading and Comprehension Applications                                                        |
| <b>10</b>                   | • Vocational Text Reading and Comprehension Applications                                                        |
| <b>11</b>                   | • Vocational Text Reading and Comprehension Applications                                                        |
| <b>12</b>                   | • Vocational Speaking Applications                                                                              |
| <b>13</b>                   | • Vocational Speaking Applications                                                                              |
| <b>14</b>                   | • General Review                                                                                                |

**DESCRIPTION FORM OF COURSE**

|                                                              |        |                                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                    |      |                    |                                 |
|--------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: BDÜ204 Computer Aided Manufacturing II |        |                                                                                                                                                                                                                                                                                                                                          |       | Programme: Machine Techonolgy                                                                                                                                                      |      |                    |                                 |
| Semester                                                     | Theory | Prac.                                                                                                                                                                                                                                                                                                                                    | Total | Credits                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| 4                                                            | 2      | 2                                                                                                                                                                                                                                                                                                                                        | 3     | 3                                                                                                                                                                                  | 5    | Turkish            | Compulsory                      |
| Prerequisites of Course                                      |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                                            |        | Assistant Professor Dr. Ali Kemal ASLAN                                                                                                                                                                                                                                                                                                  |       | E-posta : akaslan@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                    |                                 |
| Aims of Course                                               |        | The aim of this course is to teach how to design and produce the codes required for part production on CNC machines using solid modeling techniques in computer-aided design software.                                                                                                                                                   |       |                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies                    |        | 1. Recognizes and uses computer-aided production program.<br>2. Recognizes and can use the main screens of CAM programs<br>3. Can produce relevant codes for part production on CNC machines.<br>4. Can use simulation program for computer-aided production.<br>5. Knows and can use basic program codes for computer-aided production. |       |                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials                   |        | - Course Notes                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                             |        | Face to face, Online                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                              |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                    |      |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semestr Course Plan</b> |                                                                 |
|----------------------------|-----------------------------------------------------------------|
| <b>Week</b>                | <b>Syllabus</b>                                                 |
| <b>1</b>                   | 2D Drawing and Modeling Practices with CAD/CAM Softwares.       |
| <b>2</b>                   | Part Modeling Techniques with CAD/CAM Softwares.                |
| <b>3</b>                   | Modeling of Parts with Complex Geometry with CAD/CAM Softwares. |
| <b>4</b>                   | Modeling of Parts with Complex Geometry                         |
| <b>5</b>                   | Modeling of Parts with Complex Geometry                         |
| <b>6</b>                   | Assembly on CAD/CAM Softwares                                   |
| <b>7</b>                   | Assembly on CAD/CAM Softwares                                   |
| <b>8</b>                   | Midterm Exam                                                    |
| <b>9</b>                   | Surface Modelling on CAD/CAM Softwares                          |
| <b>10</b>                  | Sheet Modelling on CAD/CAM Softwares                            |
| <b>11</b>                  | Assignment of Material Properties on CAD/CAM Softwares          |
| <b>12</b>                  | Simulation on CAD/CAM Softwares                                 |
| <b>13</b>                  | CAM Codes According to ISO System                               |
| <b>14</b>                  | Examples of ISO System                                          |

### DESCRIPTION FORM OF COURSE

|                                                                   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                  |      |                    |                                 |
|-------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MİS216 Air Conditioning and Cooling Systems |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | Program: Machinery                                                                                                               |      |                    |                                 |
| Semester                                                          | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Total | Credits                                                                                                                          | ECTS | Language of Course | Course Type Compulsory/Elective |
| 4                                                                 | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3     | 3                                                                                                                                | 3    | Turkish            | Compulsory                      |
| Prerequisites of Course                                           |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                  |      |                    |                                 |
| Course Instructor                                                 |        | Öğr.Gör. Eda BAKIR GÜR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       | Mail : edabakir@munzur.edu.tr<br>Web :<br>https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/makine/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                                    |        | The Air Conditioning and Refrigeration Systems course aims to teach students the fundamental principles of heating, ventilation, cooling, and air conditioning systems. Through this course, students learn how to design, analyze, and evaluate systems that ensure comfort conditions in accordance with the principles of thermodynamics and heat transfer. Additionally, they gain knowledge about energy efficiency, environmental impacts, and the selection of system components, enabling them to develop sustainable solutions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                  |      |                    |                                 |
| Course Learning Outcomes and Competencies                         |        | <ol style="list-style-type: none"><li><b>Understanding fundamental air conditioning principles:</b> Can comprehend the basic operating principles of heating, ventilation, and cooling systems.</li><li><b>Applying knowledge of thermodynamics and heat transfer:</b> Can perform calculations using fundamental engineering concepts in the analysis of systems.</li><li><b>Analyzing refrigeration cycles:</b> Can evaluate the operating principles of vapor compression and absorption refrigeration cycles.</li><li><b>Evaluating psychrometrics and comfort conditions:</b> Can analyze air properties such as humidity and temperature to determine indoor comfort conditions.</li><li><b>Identifying and selecting system components:</b> Recognizes the functions of key system elements such as air conditioners, compressors, condensers, and evaporators, and can make appropriate selections.</li><li><b>Assessing energy efficiency and environmental impacts:</b> Can analyze energy consumption and environmental effects of systems and propose sustainable solutions.</li></ol> |       |                                                                                                                                  |      |                    |                                 |
| Textbooks and /or Other Required Materials                        |        | Lecture notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                  |      |                    |                                 |
| Method of delivery of the course                                  |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                  |      |                    |                                 |
| Teaching Methods and Techniques                                   |        | Explanation, Presentation, Group study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                  |      |                    |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |
|                            | <b>Semester Final Exam</b>                | X                              | <b>60</b>                                                 |

| <b>Semester Course Plan</b> |                                         |
|-----------------------------|-----------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                         |
| <b>1</b>                    | Air Conditioning Systems                |
| <b>2</b>                    | Air Conditioning Systems                |
| <b>3</b>                    | Heat Pumps and Their Applications       |
| <b>4</b>                    | Heat Pumps and Their Applications       |
| <b>5</b>                    | Heat Recovery Systems                   |
| <b>6</b>                    | Heat Recovery Systems                   |
| <b>7</b>                    | Combined Heat and Power Systems         |
| <b>8</b>                    | Combined Heat and Power Systems         |
| <b>9</b>                    | Selection of Air Conditioning Equipment |
| <b>10</b>                   | Selection of Air Conditioning Equipment |
| <b>11</b>                   | Air Conditioning Systems Project Design |
| <b>12</b>                   | Air Conditioning Systems Project Design |
| <b>13</b>                   | Energy Efficiency                       |
| <b>14</b>                   | Energy Efficiency                       |

**DESCRIPTION FORM OF COURSE**

|                                                     |        |                                                                                                                                                                                                                                                                                  |       |                    |                                                                                                                                                                                   |                    |                                 |
|-----------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------|
| Course Code and Name: MCF206 CNC Milling Technology |        |                                                                                                                                                                                                                                                                                  |       | Program: Machinery |                                                                                                                                                                                   |                    |                                 |
| Semester                                            | Theory | Prac.                                                                                                                                                                                                                                                                            | Total | Credits            | ECTS                                                                                                                                                                              | Language of Course | Course Type Compulsory/Elective |
| 4                                                   | 2      | 2                                                                                                                                                                                                                                                                                | 4     | 3                  | 5                                                                                                                                                                                 | Turkish            | Compulsory                      |
| Prerequisites of Course                             |        | There are no prerequisites.                                                                                                                                                                                                                                                      |       |                    |                                                                                                                                                                                   |                    |                                 |
| Course Instructor                                   |        | Lecturer Salih AĞAR                                                                                                                                                                                                                                                              |       |                    | Mail : salihagar@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |                    |                                 |
| Aims of Course                                      |        | Gaining the skills to prepare the CNC milling machine, write programs and manufacture.                                                                                                                                                                                           |       |                    |                                                                                                                                                                                   |                    |                                 |
| Course Learning Outcomes and Competencies           |        | 1. Getting preliminary information about CNC Milling Machine<br>2. Writing a program for CNC Milling Machine<br>3. Preparing CNC Milling Machine for work<br>4. Analysing the tool path of the program created on CNC milling machine<br>5. Manufacturing on CNC Milling Machine |       |                    |                                                                                                                                                                                   |                    |                                 |
| Textbooks and /or Other Required Materials          |        | Lecture Notes                                                                                                                                                                                                                                                                    |       |                    |                                                                                                                                                                                   |                    |                                 |
| Method of delivery of the course                    |        | Face to face                                                                                                                                                                                                                                                                     |       |                    |                                                                                                                                                                                   |                    |                                 |
| Teaching Methods and Techniques                     |        | Explanation, Q&A and applications                                                                                                                                                                                                                                                |       |                    |                                                                                                                                                                                   |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                               |          |           |
|--|-----------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab,<br/>Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                    | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                               |
| <b>1</b>                    | Features, parts and working principles of CNC milling machines                                                |
| <b>2</b>                    | Machine coordinate axes, Reference points Control panel types, Relation between cutter and workpiece material |
| <b>3</b>                    | Cutting tool types, features and usage areas                                                                  |
| <b>4</b>                    | Zero points on parts Giving cutting depth, process angle and feed                                             |
| <b>5</b>                    | Programming principles in CNC milling machines                                                                |
| <b>6</b>                    | General program writing applications                                                                          |
| <b>7</b>                    | General program writing applications                                                                          |
| <b>8</b>                    | Midterm Exam                                                                                                  |
| <b>9</b>                    | Programming rectangular and circular pocket milling cycles using CNC milling cycles                           |
| <b>10</b>                   | Programming rectangular and circular pocket milling cycles using CNC milling cycles                           |
| <b>11</b>                   | Programming hole drilling using CNC milling cycles                                                            |
| <b>12</b>                   | Hole drilling, threading and internal diameter removal applications                                           |
| <b>13</b>                   | Laboratory applications                                                                                       |
| <b>14</b>                   | Laboratory applications                                                                                       |
| <b>15</b>                   | Final exam                                                                                                    |



**DESCRIPTION FORM OF COURSE**

|                                                 |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                                                                                    |      |                    |                                 |
|-------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MHP212 Hydraulic-Pnomatic |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | Program: Machinery                                                                                                                                                                                                                                                 |      |                    |                                 |
| Semester                                        | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Total | Credits                                                                                                                                                                                                                                                            | ECTS | Language of Course | Course Type Compulsory/Elective |
| 4                                               | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3     | 3                                                                                                                                                                                                                                                                  | 3    | Turkish            | Compulsory                      |
| Prerequisites of Course                         |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Instructor                               |        | Assist.Prof. Dr. Cihad FİDAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       | Mail : cihadfidan@munzur.edu.tr<br>Web:<br><a href="https://www.munzur.edu.tr/birimler/akademik/fakulteler/muhendislik/bolumler/makine/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/fakulteler/muhendislik/bolumler/makine/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                  |        | To ensure the system's design, engineering, and usage with theoretical and practical knowledge by closely recognizing Hydraulic and Pneumatic Systems, which are a technological necessity to be used in many sectors                                                                                                                                                                                                                                                                               |       |                                                                                                                                                                                                                                                                    |      |                    |                                 |
| Course Learning Outcomes and Competencies       |        | <ul style="list-style-type: none"><li>• General information about the necessity of hydraulics and pneumatics in the industrial field.</li><li>• Introduction of industrial and hydraulic fluids, production of compressed air.</li><li>• Recognition of hydraulic and pneumatic circuit elements.</li><li>• Hydraulic and pneumatic circuit design.</li><li>• Hydraulic circuit design and industrial applications.</li><li>• Maintenance and repair of hydraulic and pneumatic circuits.</li></ul> |       |                                                                                                                                                                                                                                                                    |      |                    |                                 |
| Textbooks and /or Other Required Materials      |        | Lecture notes and presentations Textbooks and /or Other Required Materials<br>Kemal DEMİREL, Hidrolik-Pnomatik, Birsen Yayınevi, İstanbul, 2008 22                                                                                                                                                                                                                                                                                                                                                  |       |                                                                                                                                                                                                                                                                    |      |                    |                                 |
| Method of delivery of the course                |        | Face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                                                    |      |                    |                                 |
| Teaching Methods and Techniques                 |        | Explanation, Question-Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                                                    |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                               |          |           |
|--|-----------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab,<br/>Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                    | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                                           |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                           |
| <b>1</b>                    | <ul style="list-style-type: none"> <li>• Definition, historical development, and usage areas of Hydraulics.</li> </ul>    |
| <b>2</b>                    | <ul style="list-style-type: none"> <li>• Basic concepts of Hydraulics.</li> </ul>                                         |
| <b>3</b>                    | <ul style="list-style-type: none"> <li>• Basic principles of Hydraulics, hydraulic energy conversion.</li> </ul>          |
| <b>4</b>                    | <ul style="list-style-type: none"> <li>• Hydraulic fluids and sealing elements.</li> </ul>                                |
| <b>5</b>                    | <ul style="list-style-type: none"> <li>• Hydraulic system (Circuit) elements.</li> </ul>                                  |
| <b>6</b>                    | <ul style="list-style-type: none"> <li>• Symbol reading technique in Hydraulic and Pneumatic systems.</li> </ul>          |
| <b>7</b>                    | <ul style="list-style-type: none"> <li>• Basic principles of Pneumatics.</li> </ul>                                       |
| <b>8</b>                    | <ul style="list-style-type: none"> <li>• <b>Midterm Exam</b> (Vize Sınavı).</li> </ul>                                    |
| <b>9</b>                    | <ul style="list-style-type: none"> <li>• Hydraulic circuit design, drawing, reading, and application.</li> </ul>          |
| <b>10</b>                   | <ul style="list-style-type: none"> <li>• Distribution of compressed air.</li> </ul>                                       |
| <b>11</b>                   | <ul style="list-style-type: none"> <li>• Basic pneumatic circuit design, drawing, reading, and application.</li> </ul>    |
| <b>12</b>                   | <ul style="list-style-type: none"> <li>• Advanced pneumatic circuit design, drawing, reading, and application.</li> </ul> |
| <b>13</b>                   | <ul style="list-style-type: none"> <li>• Logic pneumatic circuit design, drawing, reading, and application.</li> </ul>    |
| <b>14</b>                   | <ul style="list-style-type: none"> <li>• Periodic maintenance and repair in hydraulic and pneumatic circuits.</li> </ul>  |

**DESCRIPTION FORM OF COURSE**

|                                                    |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
|----------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: MMB209 Engineering Science I |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       | Program: Machinery                                                                                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                           | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Total | Credits                                                                                                                                                                                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| 3                                                  | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 3     | 3                                                                                                                                                                                                                                                                                                   | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                            |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Instructor                                  |        | Assoc. Prof. Dr.Ersen YILMAZ                                                                                                                                                                                                                                                                                                                                                                                                                           |       | Mail : ersenyilmaz@munzur.edu.tr<br>Web : <a href="https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0">https://akademik.yok.gov.tr/AkademikArama/AkademisyenGorevOgrenimBilgileri?islem=direct&amp;authorId=DE474F5BCBD682C0</a> |      |                    |                                 |
| Aims of Course                                     |        | To introduce students to the fundamental physical and mechanical principles that form the basis of engineering science. The course aims to provide the necessary theoretical infrastructure on basic force and motion concepts such as circular motion, potential-kinetic energy, momentum, and simple machines, as well as topics in thermodynamics and fluid mechanics such as liquid fluids, heat energy and its effects, and fundamental gas laws. |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies          |        | Upon successful completion of this course, the student can define the concepts of circular motion and momentum and perform related calculations. They can apply the principles of conservation of potential and kinetic energy and explain the working principles of simple machines. Furthermore, they can grasp the fundamental properties of liquid fluids, understand heat energy and its effects, and solve problems using fundamental gas laws.  |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials         |        | Lecture notes and presentations                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                   |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                    |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                                                                                                                                                                                     |      |                    |                                 |

| <b>Evaluation Criteria</b> |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b> |                                |                                                           |
|                            | <b>3. Midterm Exam</b> |                                |                                                           |
|                            | <b>Oral Exam</b>       |                                |                                                           |

|  |                                               |          |           |
|--|-----------------------------------------------|----------|-----------|
|  | <b>Practical Exam (Lab,<br/>Project etc.)</b> |          |           |
|  | <b>Semester Final Exam</b>                    | <b>X</b> | <b>60</b> |

| <b>Semester Course Plan</b> |                                              |
|-----------------------------|----------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                              |
| <b>1</b>                    | • Circular motion                            |
| <b>2</b>                    | • Potential and Kinetic Energy               |
| <b>3</b>                    | • Momentum                                   |
| <b>4</b>                    | • Simple machines                            |
| <b>5</b>                    | • Liquid fluids (Introduction)               |
| <b>6</b>                    | • Liquid fluids (Detail)                     |
| <b>7</b>                    | • <b>Midterm Exam</b>                        |
| <b>8</b>                    | • Heat energy and its effects (Introduction) |
| <b>9</b>                    | • Heat energy and its effects (Detail)       |
| <b>10</b>                   | • Fundamental gas laws                       |
| <b>11</b>                   | • General Applications and Problem Solutions |
| <b>12</b>                   | • General Applications and Problem Solutions |
| <b>13</b>                   | • General Applications and Problem Solutions |
| <b>14</b>                   | • General Review                             |