**Machinery Program Courses and ECTS Credits**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1st Year** | | | | | | | | | | | | | | |
| Course Code | Course Name | ECTS | | T+P+L | | Credit | | | | C/E | | Language | | |
| Fall Semester | | | | | | | | | | | | | | |
| 221111151 | Turkish Language-I | 2 | | 2-0-0 | | 2 | | | | C | | Turkish | | |
| 221111001 | History of Turkish Revolution &Principles of Atatürk - I | 2 | | 2-0-0 | | 2 | | | | C | | Turkish | | |
| 221111002 | English-I | 2 | | 2-0-0 | | 2 | | | | C | | İngilizce | | |
| 221411150 | Calculus-I | 4 | | 3-0-0 | | 3 | | | | C | | Turkish | | |
| 221411154 | Information and Communication Technologies | 3 | | 1-2-0 | | 2 | | | | C | | Turkish | | |
| 221411123 | Industrial Applications I | 3 | | 0-4-0 | | 2 | | | | C | | Turkish | | |
| 221411121 | Physics | 3 | | 2-0-0 | | 2 | | | | C | | Turkish | | |
| 221411122 | Materials Technology | 4 | | 2-2-0 | | 3 | | | | C | | Turkish | | |
| 221411124 | Manufacturing Methods I | 4 | | 3-0-0 | | 3 | | | | C | | Turkish | | |
| Social Elective | | | | | | | | | | | | | | |
| 221411113 | Emergency Aid | 2 | | 1-0-0 | | 0 | | | | E | | Turkish | | |
| Technical Elective | | | | | | | | | | | | | | |
| 221411125 | Technical Drawing | 3 | | 3-0-0 | | 3 | | | | E | | Turkish | | |
| 221411126 | Heat Treatment Technology | 3 | | 3-0-0 | | 3 | | | | E | | Turkish | | |
| 221411127 | Aviation Technology | 3 | | 3-0-0 | | 3 | | | | E | | Turkish | | |
| Sum of Fall Semester : | | 32 | |  | | 22+2 | | | |  | |  | | |
| Spring Semester | | | | | | | | | | | | | | |
| 221112151 | Turkish Language-II | 2 | | 2-0-0 | | | | | 2 | C | | Turkish | | |
| 221112001 | History of Turkish Revolution &Principles of Atatürk - II | 2 | | 2-0-0 | | | | | 2 | C | | Turkish | | |
| 221112002 | English-II | 2 | | 2-0-0 | | | | | 2 | C | | İngilizce | | |
| 221412150 | Calculus-II | 4 | | 3-0-0 | | | | | 3 | C | | Turkish | | |
| 221412126 | Industrial Applications II | 3 | | 0-4-0 | | | | | 2 | C | | Turkish | | |
| 221412124 | Quality Management System | 3 | | 2-0-0 | | | | | 2 | C | | Turkish | | |
| 221412125 | Machine Elements | 3 | | 3-0-0 | | | | | 3 | C | | Turkish | | |
| 221412122 | Mechanical Drawing | 4 | | 1-2-0 | | | | | 2 | C | | Turkish | | |
| 221412123 | Manufacturing Methods II | 4 | | 3-0-0 | | | | | 3 | C | | Turkish | | |
| Technical Elective | | | | | | | | | | | | | | |
| 221412128 | Energy Efficiency | 3 | | 3-0-0 | | | | | 3 | E | | Turkish | | |
| 221412127 | Environmental Protection | 3 | | 3-0-0 | | | | | 3 | E | | Turkish | | |
| 221412129 | Industrial Otomation | 3 | | 3-0-0 | | | | | 3 | E | | Turkish | | |
| Social Elective | | | | | | | | | | | | | | |
| 221412161 | Occupational Ethics | 2 | | 1-0-0 | | | | | 0 | E | | Turkish | | |
| Sum of Spring Semester : | | 32 | |  | | | | | 22+2 |  | |  | | |
| SUM OF SEMESTER : | | 64 | |  | | | | |  |  | |  | | |
| **2nd Year** | | | | | | | | | | | | | |
| Course Code | Course Name | | ECTS | | T+P+L | | | Credit | | | C/E | | Language |
| Fall Semester | | | | | | | | | | | | | |
| 221413138 | Computer Aided Drawing I | | 2 | | 1-2-0 | | | 2 | | | C | | Turkish |
| 221413136 | CNC Lathe Technology | | 6 | | 2-2-0 | | | 3 | | | C | | Turkish |
| 221413139 | Industrial Applications III | | 3 | | 0-4-0 | | | 2 | | | C | | Turkish |
| 221413135 | Hydraulic and Pneumatic Systems | | 6 | | 2-2-0 | | | 3 | | | C | | Turkish |
| 221413140 | Cutting Tools and Machining Technology | | 5 | | 3-0-0 | | | 3 | | | C | | Turkish |
| 221413137 | Machinary Maintenance Management | | 5 | | 2-0-0 | | | 2 | | | C | | Turkish |
| Technical Elective | | | | | | | | | | | | | |
| 221413142 | Introduction to Electric and Electronics | | 3 | | 3-0-0 | | | 3 | | | E | | Turkish |
| 221413141 | Work Dies | | 3 | | 3-0-0 | | | 3 | | | E | | Turkish |
| Sum of Fall Semester : | | | 30 | |  | | | 18 | | |  | |  |
| Spring Semester | | | | | | | | | | | | | |
| 221414132 | Computer Aided Drawing II | | 6 | | 2-2-0 | | 3 | | | | C | | Turkish |
| 221414129 | CNC Milling Machine Technology | | 6 | | 2-2-0 | | 3 | | | | C | | Turkish |
| 221414134 | Industrial Measurement Techniques | | 5 | | 3-0-0 | | 3 | | | | C | | Turkish |
| 221414133 | Industrial Applications IV | | 3 | | 0-4-0 | | 2 | | | | C | | Turkish |
| 221414130 | Welding Technology | | 4 | | 2-0-0 | | 2 | | | | C | | Turkish |
| 221414131 | Occupational Health and Safety | | 3 | | 2-0-0 | | 2 | | | | C | | Turkish |
| Technical Elective | | | | | | | | | | | | | |
| 221414112 | Business Management and Production Control | | 3 | | 3-0-0 | | 3 | | | | E | | Turkish |
| 221414136 | Quality Control | | 3 | | 3-0-0 | | 3 | | | | E | | Turkish |
| Sum of Spring Semester : | | | 30 | |  | | 18 | | | |  | |  |
| SUM OF SEMESTER : | | | 60 | |  | |  | | | |  | |  |
| Summer Practices (Internship) | | | 10 | |  | |  | | | |  | |  |  |
| TOTAL : | | | 134 | |  | |  | | | |  | |  |  |

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Fall) |

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| **COURSE CODE** | 221111151 | **COURSE NAME** | TURKISH LANGUAGE I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description and features of language, languages of the world, Position of Turkish among other languages, historical development of Turkish, development of western Turkish, Atatürk’s ideas and projects on Turkish, pronunciation and punctuation, language policies. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The subject of the course is to expose the value of Turkish language by giving information about development of Turkish language, to gain national language awareness, to develop reading and writing skills, to compare and contrast Turkish language to other languages, to compare and contrast language policy of developed countries to Turkish language policy, to gain skill of speaking. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Skill of effective communication verbal and writing in Turkish. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learn Turkish grammar 2. Gain an understanding of the position of Turkish among other languages 3. Gain an understanding of history of Turkish language 4. Gain knowledge about Turkish languages in the world 5. Develop the ability of using Turkish properly 6. Learn the language policies 7. Gain writing skill 8. Gain speaking skill 9. Learn sentence structure and analyzing 10. Be able to realize Turkish vowels 11. Be able to realize formation of Turkish 12. Be able to read and comprehend 13. Be able to speak simultaneously 14. Be able to write compositions | | | | | | |
| **TEXTBOOK** | | | | | Turkish Language I Lecture Notes | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Ergin, M. (1997). Üniversiteler İçin Türk Dili. İstanbul: Bayrak Yayınları 2. Kaplan, M. (1993). Kültür ve Dil. İstanbul: Dergâh Yayınları (8. baskı) 3. Fuat, M. (2001). Dil Üstüne. İstanbul: Adam Yayınları 4. Aksan, D. (1984). Türkçe’nin Gücü. Ankara: Bilgi Yayınevi (4. baskı) 5. Karamanlıoğlu, A. F. (1984). Türk Dili. İstanbul: Dergâh Yayınları (3. baskı) 6. Anday, M. C. (1996). Dilimiz Üstüne Konuşmalar. İstanbul: Yapı Kredi Yayınları 7. Karaağaç, G. (2002). Dil Tarih ve İnsan. Ankara: Akçağ Yayınevi 8. Aksan, D. (2003). Dil Şu Büyülü Düzen. Ankara: Bilgi Yayınevi 9. Banarlı, N. S. (2002). Türkçe’nin Sırları. İstanbul: Kubbealtı Neşriyatı (18. baskı) 10. Parlatır,İ. & Korkmaz, Z. & Gülensoy, T. & Zülfikar, H. & Birinci, N. (2005). Türk Dili ve Kompozisyon. Ankara: Ekin Yayınları | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description and features of language |
| 2 | Languages of the world |
| 3 | Position of Turkish among other languages |
| 4 | Historical development of Turkish |
| 5 | Development of western Turkish |
| 6 | Atatürk’s ideas and projects on Turkish |
| 7 | Atatürk’s ideas and projects on Turkish |
| 8-9 | Mid-term exam |
| 10 | Pronunciation |
| 11 | Pronunciation |
| 12 | Punctuation |
| 13 | Punctuation |
| 14 | Language policies |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **x** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **x** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **x** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Öğr.Gör. Merve PİREN

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Fall) |

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| **COURSE CODE** | 221111001 | **COURSE NAME** | |  |  | | --- | --- | | |  | | --- | | HISTORY OF TURKISH REVOLUTION &  PRINCIPLES OF ATATÜRK I | | |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 1 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | The description of the term ‘revolution’; major historical events in the Ottoman Empire to the end of World War I; World War I; a general overview of Mustafa Kemal’s life; certain associations and their activities; arrival of Mustafa Kemal to Samsun; the Congress, gathering of the last Ottoman Assembly and the proclamation of the ‘national oath’; opening of the Turkish Grand National Assembly; War of independence to the Victory of Sakarya; financial sources of the war of independence; grand counter-attack; Armistice of Mudanya; abolution of the Sultanate; Peace Conference of Lausanne. | | | | | | |
| **COURSE OBJECTIVES** | | | | | |  | | --- | | The main aim of the course is to encourage the students to adopt the  principles and the revolutions of Mustafa Kemal Atatürk and to  contribute them to be brought up as individuals loyal to and defending  modern, laic and democratic values. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | --- | | To underline the idea that the national unity based on the principle  “peace in the country, peace in the world” can only be achieved  through political, economic and military progress. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To realize that a nation committed to its liberty cannot be deprived of its freedom, 2. To recognize the importance of the principle of national sovereignty, 3. To appreciate the personality and the leadership of Mustafa Kemal, 4. To see the hard conditions in which the National War was waged and won, 5. To acknowledge that the rightful will always prevail over the arbitrary force, 6. To see that a new Turkish State based on the organization of the material and spiritual strength of the nation was founded, 7. To understand that the Turkish State which the contemporary world had to recognize by the Treaty of Lausanne will be defended forever. | | | | | | |
| **TEXTBOOK** | | | | | |  | | --- | | Şerafettin Turan, **Türk Devrim Tarihi**, İstanbul1991-1995. | | | | | | | |
| **OTHER REFERENCES** | | | | | |  | | --- | | 1. Atatürk, Mustafa Kemal; **Nutuk (Söylev)**, C.I-II, T.T.K. Ankara, 1986.  2. Berkes, Niyazi; **Türkiye’de Çağdaşlaşma**, İstanbul, 1978.  3. Karal,Enver Ziya; **Atatürk ve Devrim (Konferanslar ve Makaleler)**,  T.T.K., Ankara, 1980.  4. Karal, Enver Ziya; **Atatürk’ten Düşünceler**, M.E.B. Yay., Ankara,  1981.  5. Lewis, Bernard; **Modern Türkiye’nin Doğuşu**, Çev.M.Kıratlı, T.T.K.,  Ankara, 1970.  6. Mumcu, Ahmet; **Tarih Açısından Türk Devriminin Temelleri ve**  **Gelişimi**, Ankara, 1976.  7. Turan, Şerafettin; **Türk Devrim Tarihi**, Ankara, 1992. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description of the term “revolution” |
| 2 | Major historical events in the Ottoman Emp. to the end of World War I |
| 3 | World War I |
| 4 | A general overview of Mustafa Kemal’s life |
| 5 | Certain associations and their activities |
| 6 | Arrival of Mustafa Kemal to Samsun |
| 7 | The Congresses |
| 8-9 | Mid-term exam |
| 10 | Gathering of the last Ottoman Assembly and the proclamation of the “national oath” |
| 11 | War of independence to the Victory of Sakarya |
| 12 | Financial sources of the War of independence |
| 13 | Grand counter-attack and Armistice of Mudanya |
| 14 | Abolition of the Sultanate, Peace Conference of Lausanne |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  | **x** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Engin Kırlı

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 1st Class (Fall) |

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| **COURSE CODE** | 221111002 | **COURSE NAME** | ENGLISH-I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 2 | | 0 | 0 | | | 2 | | 2 | COMPULSORY( X) ELECTIVE( ) | | | English |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | |  | | | |  | | | | | | x | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 40 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic tenses, pronouns, prepositions, reading and listening parts and vocabulary of English. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to teach basic grammar, speaking, writing, reading and listening knowledge of English. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | 1.usage of the basic grammar of English  2.usage of the language in classroom  3.understanding and responding dialogues,  4.comprehension of reading passages in English  5.communication with native speakers  6. expressing themselves in written forms | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.identification of basic grammar of English  2.understanding English dialogues  3.understanding English texts in technical field  4.communication English in written and verbal form | | | | | | | | |
| **TEXTBOOK** | | | | | 1.Praninskas, J., Rapid Review of English Grammar, Prentice hall Inc., 1975.  2.Walker,E. & Elsworth, S. (2000). New Grammar Practice for Elementary Students –Longman, England  3.Walker,E. & Elsworth, S. (2000). New Grammar Practice for Pre-Intermediate Students –Longman, England 2. | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Murphy, R. (1998). English Grammar in Use. Cambridge. 2004.  2.Dictionary of Contemporary English, Longman.  3.English for Life, Oxford University Press  4.“Dictionary of Contemporary English”, Longman. | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector, DVD, CD | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Greetings, pronouns, prepositions |
| 2 | Reading Exercise |
| 3 | Listening Exercise |
| 4 | Grammar (simple present tense, present continuous tense) |
| 5 | Reading Exercise |
| 6 | Listening Exercise |
| 7 | Grammar (The simple past tense, regular and irregular verbs) |
| 8-9 | Mid-term exam |
| 10 | Reading Exercise |
| 11 | Listening Exercise |
| 12 | Grammar (The present perfect tense, future tense) |
| 13 | Reading Exercise |
| 14 | Listening Exercise |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **x** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Özgür KOÇAK

**Signature**: **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

|  |  |
| --- | --- |
| **SEMESTER** | 1st Class (Fall) |

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| **COURSE CODE** | 221411150 | **COURSE NAME** | CALCULUS I |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 1 | 3 | | 0 | 0 | | | 3 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATEGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (…..) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Integers, rational numbers, exponential numbers, radical numbers, absolute value, equations and inequalities, functions and their graphs, analytic plane and a point's coordinates, analytical analysis of the line, basic geometry, perimeter, area, volume of the rigid body | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course helps students to explain cause-effect relation for the problems, improve their skills and talents. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Provide required mathematics knowledge to student. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Calculating the arithmetic and algebraic operations, equations and inequalities to use in their profession  2) Learning to use functions and exponential trigonometric ratios.  3)Using first and second-degree equations and inequalities in two unknowns .  4) Understanding basic geometric operations, area, perimeter, volume calculations.  5) Learning analytical plane and coordinate system. | | | | | | | |
| **TEXTBOOK** | | | | | Lecture notes | | | | | | | |
| **OTHER REFERENCES** | | | | | 1)Anadolu Üniversitesi Yayınları Genel Matematik. Eskişehir 2) Görgülü,A.(2000) Genel Matematik. Eskişehir3) Şenel  M. , Orhun N.  , Tüzemen Ş. ( 2003)  Genel Matematik. Eskişehir4) Yıldız E. (2004)  Genel Matematik. Trabzon5)  Argün Z.  (2001)  Temel Matematik. Ankara : Seçkin Yayınevi | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Square, protractor, compass and calculator. | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Numbers (integers, rational numbers) |
| 2 | Numbers (Exponential numbers, Root numbers, absolute value) |
| 3 | Equations and Inequalities (1st degree equations and their solutions) |
| 4 | Equations and Inequalities (2nd degree equations and solutions) |
| 5 | Functions and Graphs |
| 6 | Functions and Graphs |
| 7 | Analytical plane and a point's coordinates |
| 8-9 | Mid-term exam |
| 10 | Analytical analysis of the line |
| 11 | Basic Geometry (Angle, Triangle) |
| 12 | Basic Geometry (Rectangle, Polygon, Circle, Circle) |
| 13 | Rigid Body (perimeter, area calculation) |
| 14 | Rigid Body (volume calculation) |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. | **x** |  |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. | **x** |  |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **x** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **x** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  |  | **x** |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Eda KARABULUT

**Signature**:  **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Fall) |

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| **COURSE CODE** | 221411154 | **COURSE NAME** | INFORMATION and COMMUNICATION TECHNOLOGIES |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 1 | 1 | | 2 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATEGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** |
|  | | x | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 30 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | | 1 | | 30 |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Computer Hardwares, Basic IT concepts, Softwares and operating systems, web and web-based applications, office programs. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to teach the developing technology, current operating systems, office programs, internet and its applications. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learning calculation, presentation, writing etc. with office applications, communicating with internet. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1- To get knowledge about basic information technologies theatrically and practically.  2- To get knowledge about hardware and software-based design.  3- To get knowledge about project management.  4- Developing project.  5- To follow the IT and communication technologies.  6- To think and plan in algorithmic manner.  7- To be aware of information security. | | | | | | | |
| **TEXTBOOK** | | | | | Akgöbek, Ö., “Basic Information Technologies”, Beta Publications, 611p., 2004. | | | | | | | |
| **OTHER REFERENCES** | | | | | Internet | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projector, computer with internet connection, office program | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Computer Hardware |
| 2 | Softwares and Operating Systems |
| 3 | MS Word |
| 4 | MS Word |
| 5 | MS Excel |
| 6 | MS Excel |
| 7 | MS Visio |
| 8-9 | Mid-term Exam |
| 10 | MS Power Point |
| 11 | MS Power Point |
| 12 | Internet |
| 13 | Presentation |
| 14 | Presentation |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **x** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **x** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  |  | **x** |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **x** |  |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Serel ÖZMEN

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 1.CLASS (fall) |

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| **COURSE CODE** | 221411123 | **COURSE NAME** | INDUSTRIAL APPLICATIONS I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 0 | | 4 | 0 | | | 2 | | 3 | COMPULSORY( X) ELECTIVE() | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable design, mark with (√)]** | | | | | | **Social Science** | |
|  | | x | | | | X | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | | . | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | the ability to apply aquisition | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | nterprises qualified personnel cultivation | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | business implementation | | | | | | | | |
| **COURSE OUTCOMES** | | | | | business implementation | | | | | | | | |
| **TEXTBOOK** | | | | | İmalat İşlemleri-I-II-III İbrahim NEBİLER | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | machine laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | contortion-bending processes |
| 2 | plastic forming |
| 3 | thermal processes |
| 4 | surface treatments |
| 5 | Basic welding processes |
| 6 | Basic welding processes |
| 7 | dragline bench applications operations |
| 8-9 | Mid – term exam |
| 10 | dragline bench applications operations |
| 11 | the application processes the bench drill |
| 12 | Universal lathe basic operations |
| 13 | Universal lathe basic operations |
| 14 | Universal milling operations that are based in |
| 15,16 | Final exam |

|  |  |  |  |  |
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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. | **X** |  |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modeling methods. | **X** |  |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. | **X** |  |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **X** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. | **X** |  |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **X** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. | **X** |  |  |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. | **X** |  |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. | **X** |  |  |
| **1:**None. **2:**Partially contribution. **3:** Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Fall) |

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| **COURSE CODE** | 221411121 | **COURSE NAME** | PHISICS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 1 | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Unit systems, vectors, balance and momentum, laws of motion, work, power, energy, heat and temperature, channel and pipe flow, the pressure loss | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to learn the fundamentals of the physics and perform experiments, gain the ability of calculation. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to understand basic physical quantities and units conversions, calculate on the thermal and fluid systems. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Understanding the basic physical quantities and units conversions  2. Understanding the work, power and energy, and these correlations and expressing them via formulas.  3. Describing the differences between static and dynamic systems.  4. Making calculations on the thermal and fluid systems. | | | | | | |
| **TEXTBOOK** | | | | | Teknolojinin Bilimsel İlkeleri, SARI, İ., DOMBAYCI A., Gazi Kitabevi, 2006, ANKARA | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Set of experiment | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Unit Systems |
| 2 | Vectors, Force and Torque |
| 3 | Terms of Balance and Equilibrium |
| 4 | Finding the Centre of Gravity |
| 5 | Laws of Motion |
| 6 | Work, Power, Energy |
| 7 | Heat and Temperature |
| 8-9 | Mid-term exam |
| 10 | Types of Heat Transfer and Heat Transfer: Conduction, Convection and Radiation |
| 11 | Types of Heat Transfer: Conduction, Convection and Radiation |
| 12 | Basic Fluid Properties, Flow Types and Calculation |
| 13 | Duct and Pipe Flow |
| 14 | Pressure Loss |
| 15,16 | Final exam |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| --- | --- |
| **Semester** | 1st Class (Fall) |

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| --- | --- | --- | --- |
| **COURSE CODE** | 221411122 | **COURSE NAME** | MATERIALS TECHNOLOGY |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 2 | | 2 | 0 | | | 3 | | 4 | COMPULSORY( X) ELECTIVE( ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | (X) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 1 | | | 20 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Classification of materials, mechanical properties of materials, properties of metals and alloys, material selection application. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to be able to discern industrial materials, understand basic properties of materials and decision making in material selection for specific applications. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To acquire information about basic industrial materials. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. An ability to classify materials, 2. An ability to discern basic properties of materials. 3. Understanding of heat treatment and effects of heat treatment on properties of metals. 4. Understanding of engineering alloys. 5. An ability to select material for specific applications. | | | | | | | | |
| **TEXTBOOK** | | | | | GÜRLEYİK M. Y.,Malzeme Bilgisi ve Muayenesi, KTÜ, 1988 | | | | | | | | |
| **OTHER REFERENCES** | | | | | Lecture notes | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector, laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definitions and classification of industrial materials |
| 2 | Mechanical properties of materials |
| 3 | Mechanical properties of materials |
| 4 | Mechanical properties of materials |
| 5 | Heat treatment |
| 6 | Heat treatment |
| 7 | Iron-carbon steels |
| 8-9 | Mid-term exam |
| 10 | Iron-carbon steels |
| 11 | Stainless steel and other alloys |
| 12 | Non-ferrous alloys andapplications |
| 13 | Aluminum alloys |
| 14 | Ceramics, polimers and compozit materials |
| 15,16 | Final exam |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  | **X** |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **X** |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

|  |  |
| --- | --- |
| **Semester** | 1st Class (Fall) |

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| **COURSE CODE** | 221411124 | **COURSE NAME** | MANUFACTURING METHODS - I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 3 | | 0 | 0 | | | 3 | | 4 | COMPULSORY( X) ELECTIVE( ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | (X) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Classification of manufacturing methods and explanation of chipless forming techniques. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to explain chipless metal forming techniques and heat treatment applications. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To acquire information about basic plastic forming applications, casting techniques, heat treatment and advanced manufacturing methods. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. An ability to discern elastic and plastic deformation, 2. An ability to make strength calculations for tension test. 3. Understanding of rolling and forming applications. 4. Understanding of casting technology. 5. Acquire experience about heat treatment processes. 6. Acquire experience about safety issues in manufacturing processes. | | | | | | | | |
| **TEXTBOOK** | | | | | ADDISON W.,ManufacturingProcessesforEngineeringMaterials, 1999 | | | | | | | | |
| **OTHER REFERENCES** | | | | | GÜRLEYİK M. Y.,Malzeme Bilgisi ve Muayenesi, KTÜ, 1988 | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Classification of manufacturing methods and plastic forming (chipless) techniques |
| 2 | Decision making in the manufacturing methods |
| 3 | Plastic deformation and metal forming |
| 4 | Plastic deformation and metal forming |
| 5 | Plastic deformation and metal forming |
| 6 | Extrusion and applications |
| 7 | Casting technology |
| 8-9 | Mid-term exam |
| 10 | Casting technology |
| 11 | Heat treatment |
| 12 | Surface treatment |
| 13 | Corrosion and coati ng technique |
| 14 | Advanced technology applications |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  | **X** |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **X** |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1stClass (Fall) |

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| **COURSE CODE** | 221411113 | **COURSE NAME** | EMERGENCY AID-I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| 1 | 1 | | 0 | 0 | | | 0 | 2 | COMPULSORY() ELECTIVE (X) | | Turkish | |
| **COURSE CATEGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** |
|  | |  | | | |  | | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction, definition of first aid, aims and rules of first aid, transportation of sick and injured, first aid in bleeding, first aid in burns, first aid in frostbite, first aid in broken bones, dislocation and strains, cardio-pulmoner resuscitation, first aid for poisoning, first aid for animal bites, epilepsy, infectious diseases, and other first aid practices. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to be able to help to people in the situations needing first aid to save the life or lessen the injuries. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To acquire information about first aid. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learning transportation of sick and injured , 2. Learning first aid in bleeding, 3. Learning first aid in injured , 4. Learning cardio-pulmoner resuscitation , 5. Leaning first aid in burns, 6. Learning first aid in broken bones , 7. Learning first aid in poisoning and epilepsy. | | | | | | | |
| **TEXTBOOK** | | | | | Güler Ç., Bilir N. (1994 ).Temel İlkyardım (C-D düzeyleri) T.C.Sağlık Bakanlığı Sağlık Projesi Genel Koordinatörlüğü Çevre Sağlığı Temel Kaynak Dizisi. Ankara: Aydoğdu Ofset | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Acil Tıp Derneği . (1998). İlkyardım Temel Yaşam Desteği El Kitabı. İzmir: Halk Yaşam  2.Nasetti Limited. (1999). Hasta ve Yaralıların Acil Bakımı ve Nakledilmesi. Amerikan Ortopedik Cerrahlar Akademisi (3.baskı). İstanbul: Mısırlı Matbaası  3.Kolaç Z., Tülek A., Anık N.,Sezer Y. (2005). İlk Yardım. Eskişehir | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector, DVD, CD. | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction, definition of first aid |
| 2 | Aims and rules of first aid |
| 3 | Transportation of sick and injured |
| 4 | First aid in bleeding |
| 5 | First aid in burns |
| 6 | First aid in frostbite |
| 7 | First aid in broken bones, dislocation and strains |
| 8-9 | Mid-term exam |
| 10 | Cardio-pulmoner resuscitation |
| 11 | First aid for poisoning |
| 12 | First aid in convolution and epilepsy |
| 13 | Other first aid practices |
| 14 | Other first aid practices |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modeling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **x** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  | **x** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1stClass (Fall) |

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| **COURSE CODE** | 221411125 | **COURSE NAME** | TECHNICAL DRAWING |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 1 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY( ) ELECTIVE (x) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | x | | | | **√** | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1stMid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others(….) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description and importance of the technical drawing, standards, drawing tools and materials, line types, standard font, geometric drawings, projections, perspective view, section views, dimensioning, shape and position tolerances, tolerance exercises, perspective drawings. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course to understand the basic rules of technical drawing, graph and read the technical drawings. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course help students to create correct and feasible design, ensure coordination between the office and manufacturing plant. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Recognizing the drawing tools and equipment, understanding and applying line types and their rules, norms.  2. Learning the concept of projection and basic projection planes.  3. Drawing the appearance of different types of parts.  4. Applying the shape and position tolerances to the drawn parts. | | | | | | |
| **TEXTBOOK** | | | | | 1.ŞEN, İ. Zeki., ÖZÇİLİNGİR, Nail, Teknik Resim DEHA Yayıncılık, 2003. | | | | | | |
| **OTHER REFERENCES** | | | | | 1.ŞEN, İ. Zeki., ÖZÇİLİNGİR, Nail, TeknikResim A4 Uygulama Yaprakları, DEHA Yayıncılık, 2003. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description and importance of the technical drawing, standards, drawing tools, standard font |
| 2 | Geometric drawings (basic geometric drawings, geometric drawings of lines, drawings geometrical angles) |
| 3 | Geometric drawings ( polygon drawing, geometric drawings on springs and circles, tangent drawings) |
| 4 | Projections |
| 5 | Object views (auxiliary, rotated, special appearances) |
| 6 | Perspective view extraction |
| 7 | Perspective view extraction |
| 8-9 | Mid-term exam |
| 10 | Incomplete views and completion of the incomplete views |
| 11 | Cutaway views |
| 12 | Dimensioning |
| 13 | Tolerances |
| 14 | Applications |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **x** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **x** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 1st Class (Fall) |

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| **COURSE CODE** | 221411126 | **COURSE NAME** | HEAT TREATMENT TECHNOLOGY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 3 | | 0 | 0 | | | 3 | | 3 | COMPULSORY( ) ELECTIVE( x) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | |  | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | | Heat treatment is done in a laboratory. | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Steel structure, steel, annealing, hardening of steel, steels, heat treatment methods are appropriate. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The most important and indispensable part of industrial life, the steel annealing and hardening processes that are required to give the desired properties can understand. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Learns the heat treatment of steels. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Steel structure, steel tavlanmasını steel, curing, heat treatment of steels allows methods. | | | | | | | | |
| **TEXTBOOK** | | | | | materials Science Galip BAYDUR | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Steel annealing furnace. | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Steel structure. |
| 2 | Steel structure. |
| 3 | Steel structure. |
| 4 | Tempering of steel. |
| 5 | Tempering of steel. |
| 6 | Hardening of steel. |
| 7 | Hardening of steel. |
| 8-9 | Mid-term exam |
| 10 | Hardening of steel. |
| 11 | Hardening of steel. |
| 12 | Appropriate heat treatment of steels methods. |
| 13 | Appropriate heat treatment of steels methods. |
| 14 | Appropriate heat treatment of steels methods. |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **x** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **x** |  |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1nd Class (Fall) |

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| **COURSE CODE** | 221411127 | **COURSE NAME** | AVIATION TECHNOLOGY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | | **LANGUAGE** |
| 1 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY ( ) ELECTIVE ( X ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** | |
|  | |  | | | | X | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** | |
| 1st Mid-Term | | | | | 1 | 40 | |
| 2nd Mid-Term | | | | |  |  | |
| Quiz | | | | |  |  | |
| Homework | | | | |  |  | |
| Project | | | | |  |  | |
| Report | | | | |  |  | |
| Laboratory | | | | |  |  | |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 | |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic concepts related to aviation, motor system, structural systems, avionics systems, hydraulic systems and landing gear system and all. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course, comprehend and apply basic terminology and general aviation, which aims at the acquisition of ability. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course, understand and apply the basic and general aviation terminology to assist in the acquisition of skills. | | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | 1. Aviation understood the basic concepts used in the field of technology.  2. Flights to become knowledgeable about the structural system.  3. Aircraft to become very knowledgeable about the entire system. | | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to Aviation. |
| 2 | Basic concepts and aeronautical terms |
| 3 | Aircraft structural system and body-care |
| 4 | Aircraft engines and engine-maintenance system |
| 5 | And maintenance of aircraft avionics systems |
| 6 | Turbojet Engines |
| 7 | Turbojet Engines |
| 8-9 | Mid-term exam |
| 10 | Turboprop Engines |
| 11 | Turboprop Engines |
| 12 | Turbofan Engines |
| 13 | Landing gears |
| 14 | Canopy and chairs systems |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Spring) |

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| **COURSE CODE** | 221112151 | **COURSE NAME** | TURKISH LANGUAGE II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Word information, word sorts, sentence and word order of Turkish, composition, kinds of oral and written composition, oral and written narration techniques, present problems of Turkish, text (poetry, novel, story, article, etc.) analyzing methods. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The subject of the course is to expose the value of Turkish language by giving information about development of Turkish language, to gain national language awareness, to develop reading and writing skills, to compare and contrast Turkish language to other languages, to compare and contrast language policy of developed countries to Turkish language policy, to gain skill of speaking. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Skill of effective communication orally and writing in Turkish. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learn Turkish grammar 2. Develop the ability of using Turkish properly 3. Gain knowledge of present problems of Turkish 4. Be able to read and comprehend 5. Learn text analyzing methods 6. Learn about the Turkish language policy and be able to make comments on improving the policy 7. Gain writing skill 8. Gain speaking skill 9. Learn narration techniques 10. Be able to pronounce vowels 11. Be able to read phonetically right 12. Be able to write compositions 13. Be able to write on his/her ideas 14. Be able to talk on his/her ideas | | | | | | |
| **TEXTBOOK** | | | | | Turkish Language II Lecture Notes | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Ergin, M. (1997). Üniversiteler İçin Türk Dili. İstanbul: Bayrak Yayınları  2. Kaplan, M. (1993). Kültür ve Dil. İstanbul: Dergâh Yayınları (8. baskı)  3. Fuat, M. (2001). Dil Üstüne. İstanbul: Adam Yayınları  4. Aksan, D. (1984). Türkçe’nin Gücü. Ankara: Bilgi Yayınevi (4. baskı)  5. Karamanlıoğlu, A. F. (1984). Türk Dili. İstanbul: Dergâh Yayınları (3. baskı)  6. Anday, M. C. (1996). Dilimiz Üstüne Konuşmalar. İstanbul: Yapı Kredi Yayınları  7. Karaağaç, G. (2002). Dil Tarih ve İnsan. Ankara: Akçağ Yayınevi  8. Aksan, D. (2003). Dil Şu Büyülü Düzen. Ankara: Bilgi Yayınevi  9. Banarlı, N. S. (2002). Türkçe’nin Sırları. İstanbul: Kubbealtı Neşriyatı (18. baskı)  Parlatır,İ. & Korkmaz, Z. & Gülensoy, T. & Zülfikar, H. & Birinci, N. (2005). Türk Dili ve Kompozisyon. Ankara: Ekin Yayınları | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Word information |
| 2 | Word sorts,. |
| 3 | Sentence and word order of Turkish |
| 4 | Composition, |
| 5 | Kinds of oral and written composition |
| 6 | Oral and written narration techniques |
| 7 | Oral and written narration techniques |
| 8-9 | Mid-term exam |
| 10 | Oral and written narration techniques |
| 11 | Present problems of Turkish |
| 12 | Text (poetry, novel, story, article, etc.) analyzing methods |
| 13 | Text (poetry, novel, story, article, etc.) analyzing methods |
| 14 | Text (poetry, novel, story, article, etc.) analyzing methods |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **x** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **x** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **x** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Merve PİREN

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Spring) |

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| **COURSE CODE** | 221112001 | **COURSE NAME** | |  | | --- | | HISTORY OF TURKISH REVOLUTION &  PRINCIPLES OF ATATÜRK II | |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√) ]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Proclamation of the Republic, the Abolition of the Caliphate, the Constitution of 1924, the Attempts of multi-party administration, the Sheikh Said Uprising, Other Reactions against the Republic, the Menemen Incident, the reforms in the field of education, law system, culture, economy, social life etc., the foreign relations of the Turkish Republic and the six principles of the Kemalist thought system, namely republicanism, nationalism, populism, statism, laicism and revolutionarism. | | | | | | |
| **COURSE OBJECTIVES** | | | | | |  | | --- | | The main aim of the course is to encourage the students to adopt the principles and the revolutions of Mustafa Kemal Atatürk and to contribute them to be brought up as individuals loyal to and defending modern, laic and democratic values. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | --- | | To underline the idea that the national unity based on the principle  “peace in the country, peace in the world” can only be achieved  through political, economic and military progress. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To realize that a nation committed to its liberty cannot be deprived of its freedom, 2. To recognize the importance of the principle of national sovereignity, 3. To appreciate the personality and the leadership of Mustafa Kemal, 4. To see the hard conditions in which the National War was waged and won, 5. To acknowledge that the rightful will always prevail over the arbitrary force, 6. To see that a new Turkish State based on the organization of the material and spritual strength of the nation was founded, 7. To understand that the Turkish State which the contemporary world had to recognize by the Treaty of Leusanne will be defended forever. | | | | | | |
| **TEXTBOOK** | | | | | |  | | --- | | Şerafettin Turan, History of the Turkish Revolution,İstanbul1991-1995. | | | | | | | |
| **OTHER REFERENCES** | | | | | |  | | --- | | 1. Atatürk, Mustafa Kemal; Nutuk (Söylev), C.I-II, T.T.K. Ankara, 1986.  2. Berkes, Niyazi; Türkiye’de Çağdaşlaşma, İstanbul, 1978.  3. Karal,Enver Ziya; Atatürk ve Devrim (Konferanslar ve Makaleler),  T.T.K., Ankara, 1980.  4. Karal, Enver Ziya; Atatürk’ten Düşünceler, M.E.B. Yay., Ankara,  1981.  5. Lewis, Bernard; Modern Türkiye’nin Doğuşu, Çev.M.Kıratlı, T.T.K.,  Ankara, 1970.  6. Mumcu, Ahmet; Tarih Açısından Türk Devriminin Temelleri ve  Gelişimi, Ankara, 1976.  7. Turan, Şerafettin; Türk Devrim Tarihi, Ankara, 1992. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Proclamation of the Republic |
| 2 | The Abolition of the Caliphate |
| 3 | The Constitution of 1924 |
| 4 | The Attempts of multi-party administration |
| 5 | The Sheikh Said Uprising |
| 6 | Other Reactions against the Republic |
| 7 | The Menemen Incident |
| 8-9 | Mid-term exam |
| 10 | The foreign relations of the Turkish Republic |
| 11 | The reforms in the field of education, law system, culture, economy, social life etc. |
| 12 | The principles republicanism, nationalism, populism |
| 13 | The principles statism, laicism, revolutionarism |
| 14 | Principles of the Kemalist thought system |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  | **x** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Engin KIRLI

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 1st Class (Spring) |

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| **COURSE CODE** | 221112002 | **COURSE NAME** | ENGLISH-II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 2 | | 0 | 0 | | | 2 | | 2 | COMPULSORY( X) ELECTIVE( ) | | | English |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | |  | | | |  | | | | | | x | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 40 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Reported speech, relative clauses, passive voice, conditionals, reading and listening parts and vocabulary of English. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to teach basic grammar, speaking, writing, reading and listening knowledge of English. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | 1.usage of the basic grammar of English  2.usage of the language in classroom  3.understanding and responding dialogues  4.comprehension of reading passages in English  5.communication with native speakers  6. expressing themselves in written forms | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.identification of basic grammar of English  2.understanding English dialogues  3.understanding English texts in technical field  4.communication English in written and verbal form | | | | | | | | |
| **TEXTBOOK** | | | | | 1.Praninskas, J., Rapid Review of English Grammar, Prentice hall Inc., 1975.  2.Walker,E. & Elsworth, S. (2000). New Grammar Practice for Elementary Students –Longman, England  3.Walker,E. & Elsworth, S. (2000). New Grammar Practice for Pre-Intermediate Students –Longman, England 2. | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Murphy, R. (1998). English Grammar in Use. Cambridge. 2004.  2.Dictionary of Contemporary English, Longman.  3.English for Life, Oxford University Press  4.“Dictionary of Contemporary English”, Longman. | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector, DVD, CD | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Grammar (reported speech) |
| 2 | Reading Exercise |
| 3 | Listening Exercise |
| 4 | Grammar (relative clauses) |
| 5 | Reading Exercise |
| 6 | Listening Exercise |
| 7 | Grammar (passive voice) |
| 8-9 | Mid-term exam |
| 10 | Reading Exercise |
| 11 | Listening Exercise |
| 12 | Grammar (conditionals) |
| 13 | Reading Exercise |
| 14 | Listening Exercise |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **x** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Özgür KOÇAK

**Signature**: **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Spring) |

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| **COURSE CODE** | 221412150 | **COURSE NAME** | CALCULUS II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 3 | | 0 | 0 | | | 3 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Vectors, complex numbers, description of the vector representation, complex numbers in cartesian form of four operations, polar and Cartesian transformations of complex numbers, matrices, applications of derivatives, integrals and applications | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course helps students to explain cause-effect relation for the problems, improve their skills and talents. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Provide required mathematics knowledge to student. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Learning vectors and complex numbers.  2) Learning derivative applications, maximum and minimum of functions and graphs.  3) Learning integrals and applications. | | | | | | |
| **TEXTBOOK** | | | | | Lecture notes | | | | | | |
| **OTHER REFERENCES** | | | | | 1)Anadolu Üniversitesi Yayınları Genel Matematik. Eskişehir 2) Görgülü,A.(2000) Genel Matematik. Eskişehir3) Şenel  M. , Orhun N.  , Tüzemen Ş. ( 2003)  Genel Matematik. Eskişehir4) Yıldız E. (2004)  Genel Matematik. Trabzon5)  Argün Z.  (2001)  Temel Matematik. Ankara : Seçkin Yayınevi | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Square, protractor, compass and calculator. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Vectors |
| 2 | Vectors |
| 3 | Definition of complex numbers, vector representation, the complex numbers in cartesian form of four operations |
| 4 | Conversions of complex numbers in polar and Cartesian |
| 5 | Matrices |
| 6 | Matrices |
| 7 | Derivatives |
| 8-9 | Mid-term exam |
| 10 | Derivative Applications |
| 11 | Derivative Applications |
| 12 | Integral and its applications |
| 13 | Integral and its applications |
| 14 | Integral and its applications |
| 15,16 | Final exam |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. | x |  |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. | x |  |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | x |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | x |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | x |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  |  | x |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | x |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | x |
| 9 | Understanding of professional and ethical responsibility. |  |  | x |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | x |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | x |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Eda KARABULUT

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 1.CLASS (Spring) |

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| --- | --- | --- | --- |
| **COURSE CODE** | 221412126 | **COURSE NAME** | INDUSTRIAL APPLICATIONS II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 0 | | 4 | 0 | | | 2 | | 3 | COMPULSORY( X) ELECTIVE() | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable design, mark with (√)]** | | | | | | **Social Science** | |
|  | | x | | | | X | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | the ability to apply aquisition | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | enterprises qualified personnel cultivation | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | business implementation | | | | | | | | |
| **COURSE OUTCOMES** | | | | | business implementation | | | | | | | | |
| **TEXTBOOK** | | | | | İmalat İşlemleri-I-II-III İbrahim NEBİLER | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | machine laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | MIG-mag welding processes |
| 2 | MIG-mag welding processes |
| 3 | oxy-acetylene welding operations |
| 4 | oxy-acetylene welding operations |
| 5 | TIG welding operations |
| 6 | TIG welding operations |
| 7 | Universal lathe application operations |
| 8-9 | Mid – term exam |
| 10 | Universal lathe application operations |
| 11 | Universal milling applications operations |
| 12 | Universal milling applications operations |
| 13 | Assembly operations |
| 14 | practice operations |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. | **X** |  |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. | **X** |  |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. | **X** |  |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **X** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. | **X** |  |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **X** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. | **X** |  |  |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. | **X** |  |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. | **X** |  |  |
| **1:**None. **2:**Partially contribution. **3:** Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**



**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1stClass (Spring) |

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| **COURSE CODE** | 221412124 | **COURSE NAME** | QUALITY MANAGEMENT SYSTEM |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 2 | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY(X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1stMid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 20 |
| Report | | | | |  |  |
| Others (….) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | The concept of quality, standard and standardization, the importance of standards for manufacturing and service sectors, quality tools to define and solve problems, quality costs, quality management system models, process and resource management system, control charts and distributions | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to gain qualifications related to quality assurance and standards for business life. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to organize the infrastructure of the quality system and apply the standards for their firms. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Organizing the infrastructure of the quality management system.  2. Applying the quality standards.  3. Learning the quality management system models.  4. Learning the process and resource management systems. | | | | | | |
| **TEXTBOOK** | | | | | 1.DİLSİZ İ.,KARTAL C.S.,Kalite Güvencesi ve Standartları, Detay Yayıncılık, Ankara, 2012.  2.BURNAK N., Toplam Kalite Yönetimi (İstatistiksel Süreç Kontrolü), Osmangazi Üniversitesi Yayınları, Eskişehir, 1997. | | | | | | |
| **OTHER REFERENCES** | | | | | Lecture notes | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Quality and basic concept of quality |
| 2 | Quality, quality control, quality assurance, total quality management and the relationships between them |
| 3 | Quality tools to define and solve problems |
| 4 | Quality costs |
| 5 | Standards and standardization |
| 6 | Certification and accreditation |
| 7 | Quality management systems |
| 8-9 | Mid-term exam |
| 10 | Quality management systems |
| 11 | Quality management systems |
| 12 | Calibration and Metrology |
| 13 | Process and resource management system |
| 14 | Control charts and distributions |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **x** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. | **x** |  |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  |  | **x** |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**:  **Date:**

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**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Spring) |

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| **COURSE CODE** | 221412125 | **COURSE NAME** | MACHINE ELEMENTS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 2 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | To understand the basic static and strength face design, the machine classification of the elements according to the characteristics, and the appropriate element seçebilmektir Strength calculations of machine elements. Elements used in machine industry is to be able to calculate strength | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to design and strength to comprehend basic static face, according to the elements of the machine to classify, calculate the strength of machine elements and you can choose the appropriate elements. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to industry encountered elements of basic and general machinery. | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | 1) Learning the machinery and machine parts.  2) Learning the stress analysis of machine elements.  3) Learning the elements of the machine.  4) Learning the linking elements can be recognized and calculations. | | | | | | | |
| **TEXTBOOK** | | | | | AKKURT M., Makine Elemanları Cilt1, Cilt2, Birsen Yayınevi, 2005, İstanbul. Fatih C. BABALIK-Kadir ÇAVDAR Makine Bilimi ve Elamanları | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | General Principles and Definitions |
| 2 | Overall Strength Info |
| 3 | Classification of Machine Elements |
| 4 | Fasteners |
| 5 | Fasteners |
| 6 | resource Links |
| 7 | rivet Links |
| 8-9 | Mid-term exam |
| 10 | Screw Connections |
| 11 | Screw Connections |
| 12 | Shaft-hub connections |
| 13 | Support Staff |
| 14 | Power and Power Transmission Components |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**Lecturer Mesut BOSTAN

**Signature**:  **Date:**

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**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Spring) |

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| **COURSE CODE** | 221412122 | **COURSE NAME** | MECHANICAL DRAWING |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 2 | 1 | | 2 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Various assembly drawing, it is necessary places, the pictures numbering, text fields, track construction photos, pictures to read the complete and track construction, inspection, painting, parts assembly picture, drawing pictures of missing the completion of the installation, bearings, gears, shaft, wedge, pin, bolt-and-nut assembly drawings and pictures. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to use of industrial methods used in the field of complex drawing. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to acquisition of basic and general skills of drawing techniques. | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | 1. Learning the removable and non-removable junction elements.  2. Learning the intersection of methods for locating parts.  3. Learning the construction picture.  4. Learning the complete (Installation) picture. | | | | | | | |
| **TEXTBOOK** | | | | | KIRAÇ N., Makine Meslek Resmi, Bursa, 2012 Mehmet ARSLAN Meslek Resmi Arslan yayıncılık. Hamdi ÖZKARA Meslek Resmi II-II | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection and drawing sets. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | General information about screws |
| 2 | Related applications with screws |
| 3 | Wedge, pin, riveted joints |
| 4 | Springs, cams |
| 5 | Belt pulleys |
| 6 | General applications. |
| 7 | Beds. |
| 8-9 | Mid-term exam |
| 10 | Gear wheels. |
| 11 | Assembly with pictures of construction related applications |
| 12 | Assembly with pictures of construction related applications |
| 13 | Autocad Programs |
| 14 | Autocad Programs |
| 15,16 | Final exam |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**Lecturer Mesut BOSTAN

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 1st Class (Spring) |

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| **COURSE CODE** | 221412123 | **COURSE NAME** | MANUFACTURING METHODS - II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 3 | | 0 | 0 | | | 3 | | 4 | COMPULSORY( X) ELECTIVE( ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | (X) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Classification of machining methods, explanation of lathe and milling applications. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to explain machining techniques | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To acquire information about basic machining apllications | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Ability to design and evaluate manufacturing procedure. 2. Ability to perform ethical responsibilities in terms of engineering and social standarts. 3. Ability to understand basic principles of machining processes. 4. Acquire experience about safety issues of machining. | | | | | | | | |
| **TEXTBOOK** | | | | | ADDISON W.,ManufacturingProcessesforEngineeringMaterials, 1999 İbrahim NEBİLR İmalat İşlemlei.r | | | | | | | | |
| **OTHER REFERENCES** | | | | | GÜRLEYİK M. Y.,Malzeme Bilgisi ve Muayenesi, KTÜ, 1988 | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Types of machining and machining principles |
| 2 | Safety at machining operations |
| 3 | Desicion making in machining and calculation of process parameters |
| 4 | Desicion making in machining and calculation of process parameters |
| 5 | Basic machining tools |
| 6 | Surface machining |
| 7 | Lathe machining |
| 8-9 | Lathe machining Mid-term exam |
| 10 | Lathe machining |
| 11 | Milling |
| 12 | Milling |
| 13 | Project (practice) |
| 14 | Project (presentation) |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  | **X** |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **X** |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 1st Class (Spring) |

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| **COURSE CODE** | 221412128 | **COURSE NAME** | ENERGY EFFICIENCY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 3 | | 0 | 0 | | | 3 | | 3 | COMPULSORY( ) ELECTIVE(X ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | ( ) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 1 | | | 20 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Kinds of energy, energy sources, efficient energy production and consumption | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is, to learn types of energy, power-energy units and ways of efficient energy consumption | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Students are expected to acquire consciousness about energy efficiency. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Ability to make energy and power calculations 2. Knows energy sources and energy production methods. 3. Learns the definitions of usuable energy, energy storage, wasted energy. 4. Acquire experience about principles of efficient energy usuage. | | | | | | | | |
| **TEXTBOOK** | | | | | Lecture notes | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Classification of types of energy |
| 2 | Power, energy, unit conversions and calculations |
| 3 | Energy sources |
| 4 | Renewable energy |
| 5 | Avaible energy and energy storage |
| 6 | Sustainable energy management and industrial optimisation |
| 7 | Energy applications (transport, climate controlling – air conditioning) |
| 8-9 | Mid-term exam |
| 10 | Energy applications (manufacturing, industry, agriculture) |
| 11 | Re-use of waste energy in industrial applicaitons |
| 12 | Residental energy consumption |
| 13 | Material technology and energy efficiency |
| 14 | Project |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**: **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme Course Information Form**

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| **SEMESTER** | 1st Class (Spring) |

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| **COURSE CODE** | 221412127 | **COURSE NAME** | ENVIRONMENTAL PROTECTION |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 2 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY () ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√) ]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 20 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic concepts about environment, Environmental Pollution and basic problems, Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, , Radioactive Pollution, Waste Management, Energy sources, Environment law, Environmental problems in Turkey, Solutions for environmental problems. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Defining environmental pollution, having a basic knowledge about pollution of water, air and soil resources, noise pollution and radioactive pollution, learning basic concepts, having a basic knowledge about energy sources and waste management. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Provide the student the ability to understand and interpret the concepts and basic issues about environmental protection. | | | | | | |
| **COURSE OUTCOMES** | | | | | Ensuring to have knowledge about water, air, soil, noise and radioactive pollution and waste management. | | | | | | |
| **TEXTBOOK** | | | | | Environmental Protection Lecture Notes | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Toröz İ(2011) Çevre Mühendisliğine Giriş, Nobel Publisher.2. Çınar Ö (2008) Çevre Kirliliği ve Kontrolü, Nobel Publisher3. Samsunlu A (2006) Atık Suların arıtılması, Birsen Publisher | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concepts about environment |
| 2 | Environmental Pollution and basic problems |
| 3 | Air Pollution |
| 4 | Water Pollution |
| 5 | Soil Pollution |
| 6 | Noise Pollution |
| 7 | Radioactive Pollution |
| 8-9 | Mid-Term |
| 10 | Waste Management |
| 11 | Energy sources |
| 12 | Environment law |
| 13 | Environmental problems in Turkey |
| 14 | Solutions for environmental problems |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **x** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **x** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **x** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 2nd Class (Spring) |

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| **COURSE CODE** | 221412129 | **COURSE NAME** | INDUSTRIAL AUTOMATION |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 3 | | 0 | 0 | | | 3 | | 3 | COMPULSORY( ) ELECTIVE(X ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | ( ) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 1 | | | 20 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Automatic control elements, symbols,automatic control circuits design | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to define automatic control elements and applications automatic control systems. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | This course helps students automatic control elements, automatic control elements applications, | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Ability to use of automatic control elements 2. Ability to establish power circuits and control circuits 3. Ability to prepare projects for power circuits and control circuits | | | | | | | | |
| **TEXTBOOK** | | | | | Lecture notes, catalogues | | | | | | | | |
| **OTHER REFERENCES** | | | | | Yaşar B., İsmail S., Elektrik-Elektronik Bilgisi, MEB 2003, | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projektor, laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Importance of industrial automation and applications |
| 2 | Definitions and symbols |
| 3 | Production lines and automated machines |
| 4 | Automation in transport |
| 5 | Sensors and applicaitons |
| 6 | First motion |
| 7 | PLC, definitions and apllicaitons |
| 8-9 | Mid-term exam |
| 10 | Automated controll elements, signal circuits and measurements |
| 11 | Automated controll circuits |
| 12 | Project |
| 13 | Project |
| 14 | Project |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 1st Class (Spring) |

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| **COURSE CODE** | 221412161 | **COURSE NAME** | OCCUPATIONAL ETHICS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 1 | 1 | | 0 | 0 | | | 0 | 2 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | |  | | | |  | | | | | X |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Examine the concepts of ethics and morality, Investigate the factors that play a role in the formation of morality,study to examine the concept of professional ethics and social responsibility | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to learn the competencies related to professional ethics. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students in the preparation of the necessary infrastructure  about understand the concepts of ethics and morality | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Examine the concepts of ethics and morality  2.Comply with the principles of professional ethics | | | | | | |
| **TEXTBOOK** | | | | | Teacher’s lecture notes | | | | | | |
| **OTHER REFERENCES** | | | | | Teacher's experience and seminars or presentations of various organizations | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Examine the concepts of ethics and morality |
| 2 | Examine the concepts of ethics and morality |
| 3 | Examine the ethical systems |
| 4 | Examine the ethical systems, investigate the factors that play a role in the formation of morality |
| 5 | Investigate the factors that play a role in the formation of morality |
| 6 | Examine the ethics of profession |
| 7 | Examine the ethics of profession |
| 8-9 | Mid-term exam |
| 10 | Examine the ethics of profession |
| 11 | Analyzing the results of corruption and unethical behavior in professional life professional |
| 12 | Analyzing the results of corruption and unethical behavior in professional life professional |
| 13 | Examine the concept of social responsibility |
| 14 | Examine the concept of social responsibility |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **x** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **x** |  |
| 9 | Understanding of professional and ethical responsibility. | **x** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**:  **Date:**

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**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme Course Information Form**

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| **SEMESTER** | 2nd Class (Falll) |

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| **COURSE CODE** | 221413138 | **COURSE NAME** | COMPUTER AIDED DRAWING-I |

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| **SEMESTER** | **HAFTALIK DERS SAATİ** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 3 | 1 | | 2 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | | X | | | | |  |
| **ASSESMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | With the preferred CAD program, using basic drawing commands, using correction and editing commands, making perspective drawings. | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course provides students with computer-aided two-dimensional drawing will gain competencies. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Technical drawings related to the jop and technical drawings using CAD platform will gain competencies to prepare their output. | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | 1. Drawing wiht basic drawing commands 2. Make drawing applications 3. Perspective drawing applications do | | | | | | | |
| **TEXTBOOK** | | | | | AUTOCAD 2009 (Gökalp Baykal) | | | | | | |
| **OTHER REFERENCES** | | | | | Examples compiled from various BACIC COURSE books | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The initial setup program |
| 2 | Basic Concepts |
| 3 | Two-dimensional work platform |
| 4 | Line, polyline, copy, move |
| 5 | Sample drawings |
| 6 | Rectangle, polygon, rotate, trim |
| 7 | Sample drawings |
| 8-9 | Mid-term exam |
| 10 | Circle, arc, mirror, offset, array |
| 11 | Sample drawings |
| 12 | Ellipse, spline, scale, stretch |
| 13 | Drawings scaling (linear, alligned, angular dimension, radius, diameter, center marker) |
| 14 | Hatch, extend, break, chamfer, fillet |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  | **x** |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  | **x** |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **x** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **x** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **x** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. | **x** |  |  |
| 9 | Understanding of professional and ethical responsibility. | **x** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **x** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s) :** Lecturer Zeynep ÇELİK

**Signature**: **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| --- | --- |
| **SEMESTER** | 2stClass (Fall) |

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| --- | --- | --- | --- |
| **COURSE CODE** | 221413136 | **COURSE NAME** | CNC LATHE TECHNOLOGY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 3 | 2 | | 2 | 0 | | | 3 | 6 | COMPULSORY(x ) ELECTIVE () | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | x | | | | **√** | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1stMid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Others(…..) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | CNC lathe, tools and tool holders, reference points, reset settings, linking elements, CNC programming, lower programming flair application made, looms fault codes, measurement and control, machine maintenance | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to gain proficiency on writing and production of the parts and usage of the CNC lathes. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students about using the basic CNC machine tool and in CNC machining. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Preparing the CNC lathe and learning parts 2. Writing programs for the CNC lathe 3. Production parts in CNC lathe | | | | | | |
| **TEXTBOOK** | | | | | 1-CNC lathe operatör book 2-CNC lathe usage manual book 3-Gülesin, M., “CNC Torna ve Freze Tezgahlarının Programlanması”, Asil Yayın Dağıtım, Ankara, 2008. | | | | | | |
| **OTHER REFERENCES** | | | | | Lecture notes | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, CNC Lathe, tools and tool holders | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | CNC lathe features and components, operating principles |
| 2 | Types of control panels, buttons and features, coordinate axis and reference points |
| 3 | Insert varieties, characteristics and usage, tool compensation settings, tool holders |
| 4 | Properties of the elements used in the reset, reset the tool with respect to the work piece |
| 5 | Calculation of tool’s roughing, cutting depth, angle and progress |
| 6 | CNC lathe programming principles, process and preparation instructions |
| 7 | CNC lathe’s coordinate and moving systems, CNC lathe applications |
| 8-9 | Mid-term exam |
| 10 | CNC lathe programming using cycles, CNC lathe applications |
| 12 | CNC lathe programming using cycles, CNC lathe applications |
| 13 | Sub-programming technique and structure, CNC lathe applications |
| 14 | CNC looms in the alarm and error code, CNC lathe applications |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **x** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **x** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 2.CLASS (fall) |

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| **COURSE CODE** | 221413139 | **COURSE NAME** | INDUSTRIAL APPLICATIONS III |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 0 | | 4 | 0 | | | 2 | | 3 | COMPULSORY( X) ELECTIVE() | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable design, mark with (√)]** | | | | | | **Social Science** | |
|  | | x | | | | X | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | the ability to apply aquisition | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | to train qualified personnel to businesses | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | business implementation | | | | | | | | |
| **COURSE OUTCOMES** | | | | | business implementation | | | | | | | | |
| **TEXTBOOK** | | | | | İmalat İşlemleri-I-II-II İbrahim NEBİLER | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | machine laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Universal lathe application operations |
| 2 | Universal lathe application operations |
| 3 | plane surface grinding operations |
| 4 | plane surface grinding operations |
| 5 | cylindrical surface grinding operations |
| 6 | cylindrical surface grinding operations |
| 7 | practice operations |
| 8-9 | Mid – term exam |
| 10 | practice operations |
| 11 | Assembly operations |
| 12 | Assembly operations |
| 13 | CNC lathe application operations |
| 14 | CNC lathe application operations |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. | **X** |  |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. | **X** |  |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. | **X** |  |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **X** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. | **X** |  |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **X** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. | **X** |  |  |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. | **X** |  |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. | **X** |  |  |
| **1:**None. **2:**Partially contribution. **3:** Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 2nd Class (Fall) |

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| **COURSE CODE** | 221413135 | **COURSE NAME** | HYDRAULIC and PNEUMATIC SYSTEMS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 3 | 2 | | 2 | 0 | | | 3 | 6 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | | **X** | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | The hydraulic laws, hydraulic circuit components, hydraulic circuit drawing, hydraulic circuit analysis, hydraulic presses, hydraulic construction machinery, haydraulic measurements, the hydraulic failures, defines pneumatic, pneumatic equipment, pneumatic circuit drawing, pneumatic circuit analysis, pneumatic air lines, pneumatic applications, pneumatic systems maintenance and failures | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to learn, explanation of used hydraulic and pneumatics systems on the machine, hydraulic and pneumatic maintenances, and working of hydraulic and pneumatic machines | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students a basic level of hydraulic and pneumatic augmenting and using knowledge | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Hydraulic equipments are known  2.Hydraulic equipment can be connect  3.To comment hydraulic failures  4.Pneumatic equipments are known  5.Pneumatic equipment can be connect  6.To comment pneumatic failures  7.Making hydraulic and pneumatic systems maintenance | | | | | | |
| **TEXTBOOK** | | | | | Hidrolik ve Pnömatik Sistemler, İsmail KARACAN, Bursa Teknik Kitapevi, 2000, Bursa | | | | | | |
| **OTHER REFERENCES** | | | | | Equipment companies in trainers notes, laboratory sheets | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, laboratory and projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Hydraulic definitions and laws |
| 2 | Hydraulic circuit components |
| 3 | Hydraulic circuit components |
| 4 | Hydraulic circuit drawing |
| 5 | Hydraulic circuit drawing |
| 6 | Hydraulic circuit assembly |
| 7 | Pneumatic definitions and laws |
| 8-9 | Mid-term exam |
| 10 | Pneumatic circuit components |
| 11 | Pneumatic circuit components |
| 12 | Pneumatic circuit drawing |
| 13 | Pneumatic circuit assembly |
| 14 | Pneumatic and hydraulic maintenance and fault finding |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**:  **Date:**

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**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 2nd Class (Fall) |

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| **COURSE CODE** | 221413137 | **COURSE NAME** | MACHINERY MAINTENANCE MANAGEMENT |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 3 | 2 | | 0 | 0 | | | 2 | 5 | COMPULSORY (X ) ELECTIVE () | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | | X | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Applied to machines, mechanical, electrical and electronic maintenance activities, daily, weekly, monthly, 3-month, 6-month and 1-year maintenance activities and businesses informed about the importance of maintenance activities. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to teach the techniques of basic maintenance applied to the industrial field. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to acquisition of basic and general maintenance techniques. | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | 1) Learning the general maintenance, machine elements and structure.  2) Learning the maintenance principles.  3) Learning the maintenance periods and recording.  4) Learning the computerized maintenance and implementation. | | | | | | | |
| **TEXTBOOK** | | | | | Machine Maintenance Management course notes. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Recognition of the mechanical properties of materials and supplies |
| 2 | Plastic Deformation-making methods |
| 3 | Rolling |
| 4 | Tattoos |
| 5 | Tattoos |
| 6 | Casting Methods |
| 7 | And single-use sand mold casting methods |
| 8-9 | Mid-term exam |
| 10 | Permanent mold casting methods. |
| 11 | Permanent mold casting methods |
| 12 | Composite materials and manufacturing methods |
| 13 | Powder Metallurgy |
| 14 | General re-maintanence |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 2nd Class (Fall) |

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| **COURSE CODE** | 221413142 | **COURSE NAME** | INTRODUCTION TO ELECTRIC AND ELECTRONICS |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 3 | | 0 | 0 | | | 3 | | 3 | COMPULSORY( ) ELECTIVE(X ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | ( ) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 1 | | | 20 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definitions of volt, amper, power, electric circuit, measuring devices, power circuits, signal circuits, electric circuit units, power supply, conductor, thermal fuse, current breaker, electronic circuit units, resistance, diot, transistor, tristor applications, medium and high voltage, safety and precautions, magnetic field, motors, servo driver | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is to be able to discern basic electric issues, learning electric and electronic circuit components. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To acquire information about principles of electric and electronic systems. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learns definitions of electric units and components 2. Able to discern basic electric flaws 3. Able use electric motors. 4. Acquire experience about safety issues of electricity | | | | | | | | |
| **TEXTBOOK** | | | | | Yaşar B., İsmail S., Elektrik-Elektronik Bilgisi, MEB 2003 | | | | | | | | |
| **OTHER REFERENCES** | | | | | Lecture notes, circuit sample drawing, catalogues | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projektor, laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definitions and units |
| 2 | Basic electric circuits |
| 3 | Properties of power circuits |
| 4 | Properties of signal circuits |
| 5 | Measuring equipments |
| 6 | Electric circuit components |
| 7 | Electronic circuit components |
| 8-9 | Mid-term exam |
| 10 | Motors |
| 11 | Motors |
| 12 | Motors |
| 13 | Batteries, induction and applications |
| 14 | Safety and precautions |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  | **X** |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **X** |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| --- | --- |
| **Semester** | 2nd Class (Fall) |

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| **COURSE CODE** | 221413141 | **COURSE NAME** | WORK DIES |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 3 | | 0 | 0 | | | 3 | | 3 | COMPULSORY( ) ELECTIVE(X ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | ( ) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 1 | | | 20 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Work dies definition, applications, mold components, cutting dies, hole punching dies, punch dies, molds and press forming, deepdrawing dies, progressive dies, automation control, mold design and manufacturing | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to learn production of work die and applicaitons | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | This course helps students in the preparation of the necessary infrastructure  about using and production of work dies | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Varieties of work die is learned 2. Elements of work die is assembled 3. Ability to design and calculate mold and work dies | | | | | | | | |
| **TEXTBOOK** | | | | | Plastik ve Metal Kalıpçılık Teknikleri, Sadi Ataşimşek, Birsen Yayınevi, 2006, İstanbul | | | | | | | | |
| **OTHER REFERENCES** | | | | | Lecture notes | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projektor, laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition of work ides |
| 2 | Introduction of mold components and applications |
| 3 | Mold design and calculations |
| 4 | Mold design and calculations |
| 5 | Explanation of cutting dies and calculation from work dies |
| 6 | Explanation of cutting dies and calculation from work dies |
| 7 | Hole drilling and the stapler dies |
| 8-9 | Mid-term exam |
| 10 | Forming and pressing dies |
| 11 | Deep drawing dies |
| 12 | Structure of progressive dies |
| 13 | Cooled molds progressive dies |
| 14 | Automation controlled progressive molds |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  | **X** |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. | **X** |  |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **X** |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**: **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme Course Information Form**

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| **SEMESTER** | 2nd Class (spring) |

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| **COURSE CODE** | 221414132 | **COURSE NAME** | COMPUTER AIDED DRAWING-2 |

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| **SEMESTER** | **HAFTALIK DERS SAATİ** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 4 | 2 | | 2 | 0 | | | 3 | 6 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | | X | | | | |  |
| **ASSESMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | In the preferred CAD program, drawing 3-dimensional and perspective. | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course provides students with the two and three-dimensional computer-aided drawing will gain competencies. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Technical drawings will be drawn by using CAD platform related to the field of profession will gain competencies to prepare their output. | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | 1. Drawing with basic drawing commands  2. Make drawing applications  3. Perspective and make 3D drawing applications  4. Drawing files other software accurately and reliably transfers | | | | | | | |
| **TEXTBOOK** | | | | | AUTOCAD 2009 (Gökalp Baykal) **Auto Cad Lecture Notes** | | | | | | |
| **OTHER REFERENCES** | | | | | Examples compiled from various BASIC COURSE Books | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Drawing initial setup program |
| 2 | Pulley, drawing flange, Sectioning |
| 3 | Sample drawings |
| 4 | Making perspective drawings |
| 5 | Sample drawings |
| 6 | Surface modeling |
| 7 | Sample drawings |
| 8-9 | Mid-term exam |
| 10 | Solid modeling |
| 11 | Sample drawings |
| 12 | Sample drawings |
| 13 | Computer aided manufacturing |
| 14 | Computer aided manufacturing |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s) :** Lecturer Zeynep ÇELİK

**Signature**: **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 2stClass (Spring) |

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| **COURSE CODE** | 221414129 | **COURSE NAME** | CNC MILLING MACHINE TECHNOLOGY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 4 | 2 | | 2 | 0 | | | 3 | 6 | COMPULSORY(X ) ELECTIVE () | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | x | | | | **√** | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1stMid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others(…..) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | CNC milling machines, tools and tool holders, reference points, reset settings, linking elements, CNC programming, lower programming flair application made, looms fault codes, measurement and control, machine maintenance | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the program is to gain proficiency on writing and production of the parts and usage of the CNC milling machines. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students about using the basic CNC machine tool and in CNC machining. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Preparing the CNC milling machines and learning parts 2. Writing programs for the CNC milling machines 3. Production parts in CNC milling machines. | | | | | | |
| **TEXTBOOK** | | | | | 1-CNC milling operator book 2-CNC milling usage manual book 3-Gülesin, M., “CNC Torna ve Freze Tezgahlarının Programlanması”, Asil Yayın Dağıtım, Ankara, 2008. | | | | | | |
| **OTHER REFERENCES** | | | | | Lecture notes | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, CNC milling, tools and tool holders | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | CNC milling features and components, operating principles |
| 2 | Types of control panels, buttons and features, coordinate axis and reference points |
| 3 | Insert varieties, characteristics and usage, tool compensation settings, tool holders |
| 4 | Properties of the elements used in the reset, reset the tool with respect to the work piece |
| 5 | Calculation of tool’s roughing, cutting depth, angle and progress |
| 6 | CNC milling programming principles, process and preparation instructions |
| 7 | CNC milling’s coordinate and moving systems, CNC milling applications |
| 8-9 | Mid-term exam |
| 10 | CNC milling programming using cycles, CNC milling applications |
| 12 | CNC milling programming using cycles, CNC milling applications |
| 13 | Sub-programming technique and structure, CNC milling applications |
| 14 | CNC looms in the alarm and error code, CNC milling applications |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **x** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **x** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **x** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**:  **Date:**

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**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 2. Class (Spring) |

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| **COURSE CODE** | 221414134 | **COURSE NAME** | INDUSTRIAL MEASUREMENT TECHNIQUES. |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 4 | 3 | | 0 | 0 | | | 3 | 5 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 20 |
| Report | | | | |  |  |
| Laboratory | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Measurement and control the definition, classification of measuring and control instruments, measuring magnification systems, interval rulers, calipers, micrometers, comparators, angle measurement tools, pneumatic measurement, measurement of gears, bumper and fork jigs characteristics, usage, thread gauges ring buffer and the fork features, usage, electrically length measurement, roughness measurement, ISO tolerance systems, training systems, temperature and pressure measurement.. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to use of measuring instruments used in the industrial field. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to acquisition of basic and general measurement techniques. | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | 1. Learning the measuring instruments.  2. Learning the micrometers and micrometer measurements.  3. Learning the temperature and pressure measuring instruments.  4. Learning the thermometer and the thermal elements. | | | | | | | |
| **TEXTBOOK** | | | | | BİNİCİ İ., Endüstriyel Ölçme ve Kalibrasyon, Birsen Yayınevi, 2001 | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and history of measurement and control, cautions, International system of units. |
| 2 | Size enlargement methods, mechanical measuring instruments. |
| 3 | Calipers application areas, measurement errors and cautions. |
| 4 | Read Calipers Metric and inch interval. |
| 5 | The use of a micrometer. |
| 6 | Reading and calibration of micrometers. |
| 7 | Other measuring instruments (feeler gauge, etc..) |
| 8-9 | Mid-term exam |
| 10 | Taper measurement. |
| 11 | Measurement of the screws. |
| 12 | Introduction to Non-Destructive Testing methods |
| 13 | Visual inspection, magnetic particle method |
| 14 | Radiography, ultrasonography |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **X** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **X** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **X** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  | **X** |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  | **X** |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  | **X** |  |
| 9 | Understanding of professional and ethical responsibility. |  | **X** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**Lecturer Elif Begüm ELÇİOĞLU

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| --- | --- |
| **Semester** | 2.CLASS (Spring) |

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| --- | --- | --- | --- |
| **COURSE CODE** | 221414133 | **COURSE NAME** | INDUSTRIAL APPLICATIONS IV |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 0 | | 4 | 0 | | | 2 | | 3 | COMPULSORY( X) ELECTIVE() | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable design, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | X | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | the ability to apply aquisition | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | to train qualified personnel to businesses | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | business implementation | | | | | | | | |
| **COURSE OUTCOMES** | | | | | business implementation | | | | | | | | |
| **TEXTBOOK** | | | | | İmalat İşlemleri-I-II-III İbrahim NEBİLER | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | machine laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | MIG-mag welding application |
| 2 | TIG welding application |
| 3 | application of oxy-acetylene welding |
| 4 | Universal lathe application operations |
| 5 | Universal lathe application operations |
| 6 | Universal milling applications operations |
| 7 | Universal milling applications operations |
| 8-9 | Mid – term exam |
| 10 | tool grinding machine tools application in operations |
| 11 | tool grinding machine tools application in operations |
| 12 | CNC milling applications operations |
| 13 | CNC milling applications operations |
| 14 | CNC milling applications operations |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. | **X** |  |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. | **X** |  |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. | **X** |  |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. | **X** |  |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. | **X** |  |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. | **X** |  |  |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. | **X** |  |  |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. | **X** |  |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. | **X** |  |  |
| **1:**None. **2:**Partially contribution. **3:** Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**

**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **Semester** | 2nd Class (Spring) |

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| **COURSE CODE** | 221414XXX | **COURSE NAME** | WELDING TECHNOLOGY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 0 | 0 | | | 2 | | 4 | COMPULSORY( X) ELECTIVE( ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | X | | | | (X) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID – TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 1 | | | 30 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (….) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Welding types, welding positions, safety for welding | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to understand and learn welding porcesses, welding principles, to gain experience about welding methods. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To acquire knowledge and experience about welding operations. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Ability to perform oxy-gas welding. 2. Ability to perform electric arc welding 3. Ability to perform MIG/MAG welding 4. Ability to perform TIG welding | | | | | | | | |
| **TEXTBOOK** | | | | | GIACINHO J. W., Kaynak Teknolojisi | | | | | | | | |
| **OTHER REFERENCES** | | | | | GÜRLEYİK M. Y.,Malzeme Bilgisi ve Muayenesi, KTÜ, 1988 | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projector, laboratory | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition of welding and safety issues |
| 2 | Welding metalurgy |
| 3 | Welding principles |
| 4 | Oxidation and protective environment |
| 5 | Basic welding methods |
| 6 | Industrial applicaitons of welding, welding positions |
| 7 | Oxy-Gas welding |
| 8-9 | Mid-term exam |
| 10 | Electric arc welding |
| 11 | MIG/MAG welding |
| 12 | TIG welding |
| 13 | Weld defects and inspection methods |
| 14 | Project-practice |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  | **X** |  |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **X** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **X** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **X** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  | **X** |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. | **X** |  |  |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **X** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **X** |
| 9 | Understanding of professional and ethical responsibility. | **X** |  |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **X** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Mesut BOSTAN

**Signature**: **Date:**

**ESOGÜ Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 2nd Class(Spring) |

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| **COURSE CODE** | 221414131 | **COURSE NAME** | OCCUPATIONAL HEALTH AND SAFETY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 4 | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Human health, occupational safety, occupational diseases, the causes of work-related accidents and accident chain, threatening the security elements of the environment, personal protective equipment, worker health and safety legislation. | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aims to gain the competencies needed to ensure job security. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | The students take necessary measures in terms of worker health and safety, understand the importance of the human factor in the machinery industry in terms of the risk of accidents at work and occupational diseases, learn the workers' health and safety legislation | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Understanding the importance of accidents and occupational diseases 2.Understanding the factors threatening security around  3.Understanding the occupational diseases  4.Learning accidents, labor force and to understand their effects on the economy  5.Comprehension occupational health and safety legislation | | | | | | |
| **TEXTBOOK** | | | | | 1.GEREK, N.,İşçi Sağlığı ve İş Güvenliği, Anadolu Üniversitesi Yayınları,Eskişehir,2004.2.Açık öğretim yayınları ders notları | | | | | | |
| **OTHER REFERENCES** | | | | | 1. 4857 Sayılı İş Kanunu, 2. İşletmelerde İş Sağlığı ve Güvenliği Yönetmeliği | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Human health, safety |
| 2 | Injuries and occupational diseases |
| 3 | Other factors threatening the security of the (biological, chemical and physical threats) |
| 4 | Occupational accidents and their causes |
| 5 | Factors threatening security in the building (plumbing, heating and electrical installations) |
| 6 | Workplace Safety (Workplace layout, hand tools and electrical tools and machines) |
| 7 | Personal protective equipment |
| 8-9 | Mid-term exam |
| 10 | Protective apparatus used to the machines |
| 11 | Occupational diseases (physical, chemical and biological factors) |
| 12 | Precautions to be taken against an occupational disease, accident and injury analysis |
| 13 | Legislation |
| 14 | Legislation |
| 15,16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  |  | **x** |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  |  | **x** |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  |  | **x** |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  | **x** |  |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Ersin GÜLER

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| --- | --- |
| **SEMESTER** | 2stClass (Spring) |

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| --- | --- | --- | --- |
| **COURSE CODE** | 221414112 | **COURSE NAME** | BUSINESS MANAGEMENT AND PRODUCTION CONTROL |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 4 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY( ) ELECTIVE (X) | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1stMid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others(….) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | NONE | | | | | | |
| **COURSE DESCRIPTION** | | | | | Business concept, business fields and legal structures of the businesses, objectives of businesses, business functions, the concept of manufacturing, manufacturing methods, production planning, the total planning and master production scheduling, material requirements planning, inventory control, JIT, group technology and cellular manufacturing | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to provide information on business management and improve the application of production control. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to learn the types and functions of businesses, production and production control. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learning the types of businesses and their objectives.  2. Learning the functions of the businesses and management functions (planning, organization, coordination and monitoring) 3. Learning the manufacturing methods and inventory control. | | | | | | |
| **TEXTBOOK** | | | | | 1.Monks G.J., İşlemler Yönetimi, Nobel Yayınları 2.Uğur, E.( 2008).İşletme Yönetimi. İstanbul. | | | | | | |
| **OTHER REFERENCES** | | | | | 2.Ders Notları | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concept of business and management |
| 2 | Classification of businesses, objectives of the business management and success criteria |
| 3 | Functions and management functions of businesses |
| 4 | Manufacturing systems |
| 5 | Group technology and cellular manufacturing |
| 6 | Just in time production systems |
| 7 | Basic definitions and concepts of production planning |
| 8-9 | Mid-term exam |
| 10 | Total planning and master production scheduling |
| 11 | Material requirements planning |
| 12 | Inventory control methods |
| 13 | Examples: Applications in Manufacturing Industry |
| 14 | Examples: Applications in Manufacturing Industry |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  |  | **x** |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. |  | **x** |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **x** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. |  |  | **x** |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  |  | **x** |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  | **x** |  |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Zeynep ÇELİK

**Signature**:  **Date:**

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**ESOGU Sivrihisar Vocational School**

**Machinery Programme - Course Information Form**

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| **SEMESTER** | 2stClass (spring) |

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| **COURSE CODE** | 221414136 | **COURSE NAME** | QUALITY CONTROL |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ETCS** | **TYPE** | | **LANGUAGE** |
| 4 | 3 | | 0 | 0 | | | 3 | 3 | COMPULSORY( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | **Social Science** |
|  | | x | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1stMid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others(…..) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Techniques to determine and solve quality problems, tolerances and specifications, statistical process control, control charts for quantitative / qualitative measurements, tools used for quality problems, the process and machine capability analysis, failure mode and effects analysis, inspection and acceptance sampling in production | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to emphasize the importance of quality control for firms, show the causes of quality problems and the solution methods, develop the ability to apply the statistical process analysis, process and machine capability analysis to the manufacturing processes. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course helps students to determine reasons of the quality problems, their solutions and use statistical process analysis, process and machine capability analysis in production. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Describing relationship between production and quality control.  2. Learning the functions of the quality control in the machinery industry.  3. Applying the quality control methods.  4. Learning the measuring and quality control instruments in the quality control unit.  5. Applying quality control procedures for the raw materials, semi-finished and finished products. | | | | | | |
| **TEXTBOOK** | | | | | 1. Burnak, N. (1997) : Toplam Kalite Kontrolu : İstatistiksel Süreç Kontrolu, Osmangazi Üniv.,TEKAM yayın no:TS-97-008-NB, Eskişehir, 2. Kobu, B., Endüstriyel Kalite Kontrol, İÜ İşletme Fakültesi Yayın No. 3425,1987,İstanbul | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Montgomery D.C. (2005) :Introduction to Statistical Quality Control, John Wiley&Sons, Inc., NewYork, | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection, MINITAB | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and importance of quality control |
| 2 | Quality control for the machinery industry |
| 3 | Concepts and methods of the statistical quality control |
| 4 | Concepts and methods of the statistical quality control |
| 5 | Tools for quality problems (practice) |
| 6 | Process capability analysis(practice) |
| 7 | Process capability analysis(practice) |
| 8-9 | Mid-term exam |
| 10 | Process capability analysis(practice) |
| 11 | Machine capability analysis (practice) |
| 12 | Machine capability analysis(practice) |
| 13 | Failure mode and effects analysis(practice) |
| 14 | Sampling plans and sampling methods |
| 15,16 | Final exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Having sufficient knowledge about basic sciences (mathematics, science) and ability to apply theoretical and practical information to solve problems in these fields. |  |  | **x** |
| 2 | Ability to identify, formulate and solve complex problems by selecting and applying appropriate analytical and modelling methods. |  | **x** |  |
| 3 | Ability to understand a complex system, components of the system or process and solve the problems related with these system or process under realistic constraints. | **x** |  |  |
| 4 | Ability to develop, select and use modern techniques and tools that are necessary for practices; ability to use information technologies effectively. |  | **x** |  |
| 5 | Ability to collect data for the investigation of problems, analyze and interpret the results. | **x** |  |  |
| 6 | Ability to function effectively in the disciplinary, multi-disciplinary teams and ability to work individually. |  |  | **x** |
| 7 | Effective verbal and written communication skills in Turkish and proficiency in at least one foreign language. |  |  | **x** |
| 8 | Awareness of the need for life-long learning, ability to access information, to follow the new advances in science and technology and to engage in continuous self-improvement. |  |  | **x** |
| 9 | Understanding of professional and ethical responsibility. |  |  | **x** |
| 10 | Having information about applications of business life such as project management, risk management and change management practices; awareness about entrepreneurship, innovation and sustainable development. |  |  | **x** |
| 11 | The knowledge about the effects of technical practices on health, environment and security from the aspect of social and global context; awareness about the national and international legal regulation and the standards. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Lecturer Elif Begüm ELÇİOĞLU

**Signature**:  **Date:**

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