# Courses – ECTS Credits

|  |  |  |  |  |  |  |  |  |  |  |
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| **First Year** | | | | | | | | | | |
| Code | | Course Name | ECTS | | T+P+L | | | C/S | Language | |
| Fall Semester | | | | | | | | | | |
| 241111001 | | Turkish Language-I | 2 | | 2+0 | | | Compulsory | Turkish | |
| 241011001 | | History of Turkish Revolution & Principles of Atatürk-I | 2 | | 2+0 | | | Compulsory | Turkish | |
| 241011002 | | English-I | 2 | | 2+0 | | | Compulsory | Turkish | |
| 241111004 | | Mathematics-I | 3 | | 3+0 | | | Compulsory | Turkish | |
| 241111014 | | Fundamentals of Mechatronics | 4 | | 3+0 | | | Compulsory | Turkish | |
| 241111015 | | Manufacturing Processes and Industrial Materials | 4 | | 3+0 | | | Compulsory | Turkish | |
| 241111016 | | Physics | 2 | | 2+0 | | | Compulsory | Turkish | |
| 241111007 | | Use of Basic Information Technologies | 5 | | 2+2 | | | Compulsory | Turkish | |
| 241111008 | | Technical Drawing | 5 | | 2+2 | | | Compulsory | Turkish | |
|  | | Social Elective-I (Course I) |  | |  | | |  |  | |
| 241111017 | | Organizational Behaviour | 1 | | 1+0 | | | Selective | Turkish | |
| 241111011 | | First Aid | 1 | | 1+0 | | | Selective | Turkish | |
| 241111018 | | Occupational Health and Safety | 1 | | 1+0 | | | Selective | Turkish | |
| Fall Semester Total: | | | 30 | |  | | |  |  | |
| Spring Semester | | | | | | | | | | |
| **241112001** | | Turkish Language-II | 2 | | 2+0 | | | Compulsory | Turkish | |
| **241012001** | | History of Turkish Revolution & Principles of Atatürk II | 2 | | 2+0 | | | Compulsory | Turkish | |
| **241012002** | | English -II | 2 | | 2+0 | | | Compulsory | Turkish | |
| **241112004** | | Mathematics-II | 3 | | 3+0 | | | Compulsory | Turkish | |
| **241112013** | | Direct Current Circuit Analysis | 4 | | 3+0 | | | Compulsory | Turkish | |
| **241112014** | | Basic of Strength, Mechanics and Dynamics | 3 | | 3+0 | | | Compulsory | Turkish | |
| **241112015** | | Digital Electronics | 4 | | 3+0 | | | Compulsory | Turkish | |
| **241112016** | | Computer Aided Design and Manufacturing | 5 | | 2+2 | | | Compulsory | Turkish | |
| **241112017** | | Industrial Robots | 4 | | 3+0 | | | Compulsory | Turkish | |
|  | | Social Elective-II (Course I) |  | |  | | |  |  | |
| **241112019** | | Professional Ethics | 1 | | 1+0 | | | Selective | Turkish | |
| **241112020** | | Quality Assurance and Standarts | 1 | | 1+0 | | | Selective | Turkish | |
| Spring Semester Total: | | | 30 | |  | | |  |  | |
| TOTAL: | | | 60 | |  | | |  |  | |
| **Second Year** | | | | | | | | | | |
| Code | Course Name | | | ECTS | | T+P+L | C/S | | | Language |
| Fall Semester | | | | | | | | | | |
| 241113010 | Alternative Current Circuit Analysis | | | 4 | | 3+0 | Compulsory | | | Turkish |
| 241113002 | Electric Motors and Drivers | | | 5 | | 2+2 | Compulsory | | | Turkish |
| 241113003 | Industrial Automation | | | 5 | | 2+2 | Compulsory | | | Turkish |
| 241113011 | Automatic Control | | | 3 | | 3+0 | Compulsory | | | Turkish |
| 241113012 | Analogue Electronics | | | 3 | | 3+0 | Compulsory | | | Turkish |
| 241113013 | Machine Elements | | | 4 | | 2+0 | Compulsory | | | Turkish |
| 241113014 | Industrial Measurement Technics | | | 4 | | 2+0 | Compulsory | | | Turkish |
|  | Technical Elective-I (Course I) | | |  | |  |  | | |  |
| 241113015 | Sensors and Actuators | | | 3 | | 2+0 | Selective | | | Turkish |
| 241113016 | Mechatronics Systems in Automotive | | | 3 | | 2+0 | Selective | | | Turkish |
| 241113017 | Trouble Shooting, Maintenance and Repair | | | 3 | | 2+0 | Selective | | | Turkish |
| 241113018 | 3D Printing | | | 3 | | 2+0 | Selective | | | Turkish |
| Fall Semester Total: | | | | 31 | |  |  | | |  |
| Spring Semester | | | | | | | | | | |
| 241114010 | Programmable Logic Controllers | | | 5 | | 2+2 | Compulsory | | | Turkish |
| 241114002 | Hydraulic and Pneumatic Systems | | | 5 | | 3+2 | Compulsory | | | Turkish |
| 241114020 | Microcontroller Based Control | | | 3 | | 3+0 | Compulsory | | | Turkish |
| 241114012 | Computer Aided Machine Tools | | | 5 | | 2+2 | Compulsory | | | Turkish |
| 241114021 | Project | | | 3 | | 2+0 | Compulsory | | | Turkish |
| 241114022 | Internship\* | | | 5 | | 0+2 | Compulsory | | | Turkish |
|  | Technical Elective-II (Course I) | | |  | |  |  | | |  |
| 241114015 | Renewable Energy | | | 3 | | 2+0 | Selective | | | Turkish |
| 241114016 | Communication Technologies | | | 3 | | 2+0 | Selective | | | Turkish |
| 241114017 | Mechatronics in Railway Systems | | | 3 | | 2+0 | Selective | | | Turkish |
| 241114018 | Statistics | | | 3 | | 2+0 | Selective | | | Turkish |
| 241114019 | Aviation Mechatronics | | | 3 | | 2+0 | Selective | | | Turkish |
| Spring Semester Total: | | | | 29 | |  |  | | |  |
| TOTAL: | | | | 60 | |  |  | | |  |

**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | 241111001 | **COURSE NAME** | TURKISH LANGUAGE I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 2 | | 0 | 0 | | | 0 | | 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 (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(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 EDUCATION** | | | | | 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 | Development of western Turkish |
| 7 | Atatürk’s ideas and projects on Turkish |
| 8-9 | Mid – term exam |
| 10 | Atatürk’s ideas and projects on Turkish |
| 11 | Pronunciation |
| 12 | Pronunciation |
| 13 | Punctuation |
| 14 | Punctuation |
| 15 | Language policies |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | 241011001 | **COURSE NAME** | HISTORY OF TURKISH REVOLUTION & PRINCIPLES OF ATATÜRK 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 ( ) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | | **√** | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 40 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(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 cogress, 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 EDUCATION** | | | | | |  | | --- | | 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 can not 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, **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 | The Congresses |
| 11 | Gathering of the last Ottoman Assembly and the proclamation of the “national oath” |
| 12 | War of independence to the Victory of Sakarya |
| 13 | Financial sources of the War of independence |
| 14 | Grand counter-attack and Armistice of Mudanya |
| 15 | Abolition of the Sultanate, Peace Conference of Lausanne |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE CODE** | 241011002 | **COURSE NAME** | ENGLISH-I |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 2 | | 0 | 0 | | | 0 | | 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 (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **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 and projector | | | | | | | | |

|  |  |
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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 |
| 7-8 | Mid – term exam |
| 9 | Grammar (The simple past tense, regular and irregular verbs) |
| 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE CODE** | **241111004** | **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 | | 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 | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **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 EDUCATION** | | | | | 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. Eskişehir****3) Şenel  M. , Orhun N.  , Tüzemen Ş. ( 2003)  Genel Matematik. Eskişehir****4) Yıldız E. (2004)  Genel Matematik. Trabzon** **5)  Argün Z.  (2001)  Temel Matematik. Ankara : Seçkin Yayınevi** | | | | | | | | |
| **OOLS 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 plane and a point's coordinates |
| 11 | Analytical analysis of the line |
| 12 | Basic Geometry (Angle, Triangle) |
| 13 | Basic Geometry (Rectangle, Polygon, Circle, Circle) |
| 14 | Rigid Body (perimeter, area calculation) |
| 15 | Rigid Body (volume calculation) |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSE CODE** | 241111014 | **COURSE NAME** | FUNDAMENTALS OF MECHATRONICS |

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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** | |
|  | | **√** | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | %50 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | %50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction to mechatronics, areas of mechatronics applications, basic science in mechatronics. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to analyze mechatronics systems, to learn mechatronics application areas and to use based on the scientific basis of mechatronics. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Mechatronics system can be analyzed and the basic science can be used for having a mechatronic system. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Analyzing mechatronics system elements 2. Learning mechatronics application areas 3. Using scientific basis of mechatronics | | | | | | | | |
| **TEXTBOOK** | | | | | “Mekatronik”, W. Bolton, Dahi Yayınları | | | | | | | | |
| **OTHER REFERENCES** | | | | | **A. Erden, Mekatronik Muhendisliği, Kavramlar ve Uygulamalar, MMO Yayın No: 2007/422. 2006** | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | PC, projection, internet. | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to Mechatronics |
| 2 | Sensors and Transducers in Mechatronic Systems |
| 3 | Signal Processing in Mechatronic Systems |
| 4 | Visualization in Mechatronic Systems |
| 5 | Hydraulic and Pneumatic Actuators in Mechatronic Systems |
| 6 | Mechanical Actuators in Mechatronic Systems |
| 7 | Electrical Actuators in Mechatronic Systems |
| 8-9 | Mid – term exam |
| 10 | Control in Mechatronic Systems |
| 11 | Microprocessors, Programmable Logic Controllers (PLC) in Mechatronic Systems |
| 12 | Mechatronic System Design Procedure |
| 13 | Maintenance in Mechatronic Systems |
| 14 | Mechatronic Systems |
| 15 | Mechatronic Systems |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | 241111015 | **COURSE NAME** | MANUFACTURİNG PROCESSES AND MATERİALS SCIENCE |

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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 | | | 30 | | |
| 2nd Mid – Term | | | |  | | |  | | |
| Quiz | | | | 2 | | | 20 | | |
| Homework | | | |  | | |  | | |
| Project | | | |  | | |  | | |
| Report | | | |  | | |  | | |
| Others (Laboratory) | | | |  | | |  | | |
| **FINAL EXAM** | | | |  | | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | NONE | | | | | | | | | |
| **COURSE DESCRIPTION** | | | | General information about the evaluating equipment related to manufacturing. Basic turning on universal lathe. Basic milling on universal milling machine. Grinding the cutting tools on grinding machine. Basic welding with electrical welding machine. General properties of materials: elasticity, brittleness, hardness, strength, toughness, ductility, and plastisitisite. Low, medium, and high carbon steels. Cast iron. Alloys. Aluminum, copper, zinc, lead, antimony, brass, bronze and white metalproperties. Basic metallurgy: to obtain pig iron from ore, pig iron into steel, methods, molding,casting, forging and sheet methods. Percentageof carbon steels. Nickel, chromium and molybdenum alloys. Nonmetallic materials, composite material,fiber material is used, polymers. Behavior of materials under load, tensile elongation,diagrams. | | | | | | | | | |
| **COURSE OBJECTIVES** | | | | The aim of course is to teach basic mechanichal manufacturing processes, machining manufacturing,metal forming manufacturing and forming technics. Obtain info about materials | | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | Ability to do basic skills acquisition, and general manufacturing operations. To get working knowledge about materials that is used in industry. | | | | | | | | | |
| **COURSE OUTCOMES** | | | | |  | | --- | | 1. Basic Manufacturing Processes 2. General Manufacturing Processes 3. Measurement principals, callipers and protractors 4. Evaluate and interpret materials | | | | | | | | | | |
| **TEXTBOOK** | | | | Naci Şahin, Talaşlı Üretim 1,2,3 | | | | | | | | | |
| **OTHER REFERENCES** | | | | **Fehim Fındık, Malzeme ve Tasarım Bilgisi****Hilmi Yüksel, Üretim İşlemler Yönetimi** | | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | Computer, projection | | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to the Classification and properties of materials (ferrous and non-ferrous metals and alloys based) |
| 2 | Classification and properties of materials (ceramics, glass, polymers and composite materials) |
| 3 | Mechanical properties and behavior |
| 4 | Mechanical properties and behavior |
| 5 | General knowledge of manufacturing process (production, stock removal processes, machinery manufacturing methods classification, numerical control machine tools, CAD-CAM systems) |
| 6 | Turning, milling, hole of embroidered,-shaping, slotting, broaching and sawing, threading screw and gear |
| 7,8 | Mid – term exam |
| 9 | Turning lathes (forehead, back, taper turning) |
| 10 | Machines and milling (plane milling, etc.) |
| 11 | Forming of metal removal (Ekstrusion, casting, rolling, .. etc) |
| 12 | Forming of metal removal (Ekstrusion, casting, rolling, .. etc) |
| 13 | Welding (electrodes, electric arc, Mig-Mag) |
| 14 | Welding (TIG, and other 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE CODE** | **241111016** | **COURSE NAME** | PHYSICS |

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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() | | | 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 (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(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 EDUCATION** | | | | | 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** | | | | | “Üniversiteler için Fizik” Bekir KARAOĞLU | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection. | | | | | | | | |

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| **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 | Heat and Temperature |
| 11 | Types of Heat Transfer and Heat Transfer: Conduction, Convection and Radiation |
| 12 | Types of Heat Transfer: Conduction, Convection and Radiation |
| 13 | Basic Fluid Properties, Flow Types and Calculation |
| 14 | Duct and Pipe Flow |
| 15 | Pressure Loss |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSE CODE** | 241111007 | **COURSE NAME** | USE OF BASIC INFORMATION TECHNOLOGIES |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 2 | | 2 | 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 | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **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 EDUCATION** | | | | | 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** | | | | | **Sugözü, İ.H., “Temel Bilgi Teknolojileri”, Nobel Publications, 2012** | | | | | | | | |
| **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 |
| 7,8 | Mid-term exam |
| 9 | MS Visio |
| 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | 241111008 | **COURSE NAME** | TECHNICAL DRAWING |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 2 | | 2 | 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 | | | 1 | | | 30 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(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 EDUCATION** | | | | | 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** | | | | | AUTOCAD | | | | | | | | |

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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 | Tolerances |
| 15 | Applications |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | **241111017** | **COURSE NAME** | ORGANIZATIONAL BEHAVIOUR |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 1 | | 0 | 0 | | | 0 | | 1 | 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 (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic research methods, causes and effects of biases, attribution, happiness, depression, individualism, collectivism, conformity, gender, corruption, communitarianism, persuasion, groups and productivity, diversity and prejudice, conflict. Skills and strategies in organizational development and change, such as leadership, influence and control systems, group dynamics, and personal/organizational goals. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To show how social factors influence individual behavior. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be aware of behaviours, its effects, reasons in organizations. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn importance and effects of behaviour in daily life and organization. | | | | | | | | |
| **TEXTBOOK** | | | | | **Enver Özkalp, Çiğdem Kırel, Örgütsel Davranış, Ekin Yayınevi.** | | | | | | | | |
| **OTHER REFERENCES** | | | | | **Örgütsel Davranış, Sait Gürbüz, Ünsal Sığrı, Beta Yayınevi.****Örgütsel Davranış, AÖF Yayınları.** | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, Computer | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Fundamentals of Organizational Behaviour |
| 2 | Individual Behaviour, Personality in Organizations |
| 3 | Workplace emotions, attitudes, job satisfaction |
| 4 | Skills and Learning |
| 5 | Organizational Culture |
| 6 | Team Works in Organizations |
| 7 | Team Works in Organizations |
| 8-9 | Mid – term exam |
| 10 | Conflict in Organizations, Stres Management in Organizations |
| 11 | Leadership in Organizations |
| 12 | Variations in Organizations |
| 13 | Organizational Cohesiveness |
| 14 | Power and Policy in Organizations |
| 15 | Organizational Ethics and Management |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | **241111011** | **COURSE NAME** | FIRST AID |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 1 | | 0 | 0 | | | 0 | | 1 | 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 (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **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 EDUCATION** | | | | | To acquire information about first aid. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. An ability to, transportation of sick and injured , 2. An ability to, first aid in bleeding, 3. An ability to, first aid in injured , 4. An ability to, cardio-pulmoner resuscitation , 5. An ability to, first aid in burns, 6. An ability to, first aid in broken bones , 7. An ability to, 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, projection, 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 convultion and epilepsy |
| 13 | Other first aid practices |
| 14 | Other first aid practices |
| 15 | Other first aid practices |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | 241111018 | **COURSE NAME** | OCCUPATIONAL HEALTH AND SAFETY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 1 | 1 | | 0 | 0 | | | 0 | | 1 | COMPULSORY() ELECTIVE(X) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (√)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | | **√** | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 50 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | To be aware of the rules of occupational health and safety laws in the industry | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Students should learn the occupational health and safety rules and laws. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be aware of occupational health and safety rules and laws in the industry | | | | | | | | |
| **COURSE OUTCOMES** | | | | | To be aware of occupational health and safety rules and laws | | | | | | | | |
| **TEXTBOOK** | | | | | **İş sağlığı ve güvenliği uygulama seti,****İş sağlığı ve güvenliği, Dr. Teoman Akpınar** | | | | | | | | |
| **OTHER REFERENCES** | | | | | **None** | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Occupational health and business confidence. principles |
| 2 | Definition of occupational health |
| 3 | Occupational health measures |
| 4 | Occupational health applications |
| 5 | The sample application |
| 6 | presentation |
| 7,8 | Mid – term exam |
| 9 | Occupational health and safety in the work environment |
| 10 | Job security definition |
| 11 | Job security measures |
| 12 | Job security applications |
| 13 | Sample Application quiz |
| 14,15 | Presentation |
| 16,17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE CODE** | 241112001 | **COURSE NAME** | TURKISH LANGUAGE II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 2 | | 0 | 0 | | | 0 | | 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 (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(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 EDUCATION** | | | | | 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 | Present problems of Turkish |
| 13 | Text (poetry, novel, story, article, etc.) analyzing methods |
| 14 | Text (poetry, novel, story, article, etc.) analyzing methods |
| 15 | Text (poetry, novel, story, article, etc.) analyzing methods |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE CODE** | 241012001 | **COURSE NAME** | HISTORY OF TURKISH REVOLUTION & PRINCIPLES OF ATATÜRK 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( ) | | | 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 (Laboratory) | | | |  | | |  | | |
| **FINAL EXAM** | | | |  | | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | NONE | | | | | | | | | |
| **COURSE DESCRIPTION** | | | | Proclamation of the Republic, the Abolution of the Chaliphate, 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 EDUCATION** | | | | |  | | --- | | 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 can not 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 Abolution of the Chaliphate |
| 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 foreign relations of the Turkish Republic |
| 12 | The reforms in the field of education, law system, culture, economy, social life etc. |
| 13 | The principles republicanism, nationalism, populism |
| 14 | The principles statism, laicism, revolutionarism |
| 15 | Principles of the Kemalist thought system |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | 241012002 | **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 | | | 0 | | 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 (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **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 and projector | | | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Grammar (reported speech) |
| 2 | Reading Exercise |
| 3 | Listening Exercise |
| 4 | Grammar (relative clauses) |
| 5 | Reading Exercise |
| 6 | Listening Exercise |
| 7-8 | Mid – term exam |
| 9 | Grammar (passive voice) |
| 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | 241112004 | **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 | | 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 | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **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 EDUCATION** | | | | | 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. Eskişehir****3) Şenel  M. , Orhun N.  , Tüzemen Ş. ( 2003)  Genel Matematik. Eskişehir****4) Yıldız E. (2004)  Genel Matematik. Trabzon** **5)  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 | Derivatives |
| 11 | Derivative Applications |
| 12 | Derivative Applications |
| 13 | Integral and its applications |
| 14 | Integral and its applications |
| 15 | Integral and its applications |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE**  **CODE** | **241112013** | **COURSE**  **NAME** | DIRECT CURRENT CIRCUIT ANALYSIS |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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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 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | | 2 | | | 20 | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Fundamental Electric Current Laws, Kirchoff’s Laws, Node Analysis, Mesh  Analysis, Source Transformation, Maximum Power Transition, Superposition Theorem, Thevenin Theorem, Norton Theorem, Inductor – Capacitor and their DC Response | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To learn basic circuit elements and direct current circuit analysis theorems. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | To set a substructure for designing, analysing direct current circuits. To get knowledge about circuit elements. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | To get knowledge about designing, constructing and anaylzing Direct Current  Circuits. | | | | | | | | |
| **TEXTBOOK** | | | | | Devre Analizi, AÖF Yayınları. | | | | | | | | |
| **OTHER REFERENCES** | | | | | Doğru Akım Devre Analizi, Hasan Selçuk Selek, Seçkin Yayınevi  Doğru Akım Devreleri, Murat Ceylan, Seçkin Yayınevi | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Fundamental Electric Current Laws |
| 2 | Kirchoff’s Laws |
| 3 | Node Voltage Analysis |
| 4 | Mesh Current Analysis |
| 5 | Source Transformation |
| 6 | Maximum Power Transition |
| 7 | Maximum Power Transition |
| 8-9 | Mid – term exam |
| 10 | Superposition Theorem |
| 11 | Thevenin Theorem |
| 12 | Norton Theorem |
| 13 | Direct Current Response of Inductor, Calculation of Energy and Power |
| 14 | Direct Current Response of Capacitor, Calculation of Energy and Power |
| 15 | Direct Current Response of Capacitor, Calculation of Energy and Power |
| **16-17** | **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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSE**  **CODE** | 241112014 | **COURSE**  **NAME** | BASIC OF STRENGTH, MECHANICS  AND DYNAMICS |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **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 | |  | | | |  | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | | 2 | | | 20 | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Physical Quantities, Statics, Mechanics, Dynamics, Fluid Power | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The ability of modeling to real-life problems, Giving information about the logical and mathematical problem solving to be used, Examine the role of force in the formation of motion in the formation of motion | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | Adopt the basic principles and dynamics of mechanical problems in real life. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1)To establish proper relationship between the changing concepts of circular motion, and strength to calculate the energy consumed  2)Kinetic and potential energies of their bodies to define and explain the energies of the interconversion  . | | | | | | | | |
| **TEXTBOOK** | | | | | Statik – Mukavemet, Mehmet H. Omurtag  Mühendislik Mekaniği Dinamik, Ayşe Soyuçok, Özgün Soyuçok | | | | | | | | |
| **OTHER REFERENCES** | | | | | Cisimlerin Mukavemeti. Mustafa İnan | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concepts, SI units |
| 2 | Vectors and vector analysis |
| 3 | Force and moment |
| 4 | Particle kinematics and rigid body kinematics |
| 5 | Kinetics |
| 6 | Work and energy |
| 7,8 | Mid – term exam |
| 9 | Stress and deformation |
| 10 | Loadings |
| 11 | Tensile and compressive strength |
| 12 | Shear strength |
| 13 | Bending strength |
| 14 | Torsional strength |
| 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241112015 | **COURSE**  **NAME** | DIGITAL ELECTRONICS |

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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 | | | 2 | | | 20 | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic number systems, logic gates, logic circuits, simplifying and combining logic circuits, encoders, decoders, flip – flops, multiplexers, demultiplexers, adders, subtractors. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | In this course, students will be able to make operations and transformations with differents number systems, and they are able to design basic and combined logic circuits. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | Implementation of defined problems with logic circuits. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1)Set up basic logic circuits  2)Simplifying logic circuits  3)Set up combined logic circuits  4)Set up sequential logic circuits  5)Set up counter circuits  6)Set up recorder circuits  7)Set up ADC and DAC. | | | | | | | | |
| **TEXTBOOK** | | | | | “Mantık Devreleri 1”, Hasan Selçuk Selek, Seçkin Yayıncılık | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1)“Lojik tasarımın Temelleri ve Uygulamaları”, Doç. Dr. Şirzat Kahramanlı, Öğr. Gör. Muciz Özcan, Atlas Yayın Dağıtım  2)“Dijital Elektronik”, Mustafa Yağımlı, Feyzi Akar, Beta Yayınları | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, projection | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Number systems ( binary, octal, decimal, hexadecimal) |
| 2 | Number systems, codes ( BCD, excess -3, Gray code) |
| 3 | Logic gates, logical integrated circuits |
| 4 | Boolean algebra |
| 5 | Boolean algebra |
| 6 | Karnough maps, Kısa sınav |
| 7 | Karnough maps |
| 8-9 | Mid – term exam |
| 10 | Encoders |
| 11 | Decoders |
| 12 | Multiplexers, demultiplexers |
| 13 | Adders, subtractors, flip – flops |
| 14 | Asynchronous counters, synchronous counters, ADCs, DACs |
| 15 | Quiz |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241112016 | **COURSE**  **NAME** | Computer Aided Design And Manufacturing |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 2 | | 2 | 0 | | | 3 | | 5 | COMPULSORY( X ) ELECTIVE() | | |  |
| **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 | | | 40 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 2 | | | 20 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Within the scope of this course, CAD programs will be used for designing  2D and 3D machine parts, technical drawing symbols, welding connections and metal sheet using CAD program. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1-Ability to use CAD programs  2- Transition from 2D part to 3D part  3-Ability to display technical drawing symbols on a 2D image using a CAD  program  4-To be able to use metal sheet design, assembly and analysis methods | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | By using CAD program, ability to 3D parts drawing and technical drawing  will be gained. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1-Can use CAD program  2-2B and 3D parts extraction  3-Ability to use technical drawing symbols  4- Analyze the part of 3B | | | | | | | | |
| **TEXTBOOK** | | | | | 1-Solid Edge St7 for Designers, 2015, [Prof Sham Tickoo Purdue Univ.](https://www.google.com.tr/search?sa=X&amp;q=solid%2Bedge%2Bst7%2Bfor%2Bdesigners%2Bprof%2Bsham%2Btickoo%2Bpurdue%2Buniv&amp;stick=H4sIAAAAAAAAAOPgE-LVT9c3NEyrzKksz8nIUYJwk8wLLfKKirO1ZLKTrfST8vOz9cuLMktKUvPiy_OLsq0SS0sy8osApscuKj4AAAA&amp;ved=0ahUKEwil35PG0NfZAhUFBMAKHUF2AnoQmxMIvQEoATAP)  2-Bilgisayar Destekli Tasarım / Serdar Mercan - Fırat Hakverdi - Alperen  Tosun, birsen yayınevi.  3- Meslek Yüksekokulları İçin Bilgisayar Destekli Tasarım – 1, (Proteus –  ISIS), [Bedri Bahtiyar,](https://www.seckin.com.tr/browser/fa/954892462/kitap/Bedri%20Bahtiyar) Ağustos 2008 / 1. Baskı / 188 Syf. | | | | | | | | |

|  |  |
| --- | --- |
| **OTHER REFERENCES** | None |
| **TOOLS AND EQUIPMENTS REQUIRED** | Computer and projection |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to CAD Programs |
| 2 | Layers and lines, 2D geometric shapes drawing and editing |
| 3 | Layers and lines, 2D geometric shapes drawing and editing |
| 4 | 3D drawing coordinate system and basic parameters |
| 5 | 3D drawing coordinate system and basic parameters |
| 6 | Creation of draft models and drawings |
| 7 | Formation of solid and surface models, operations on solid and surface models |
| 8-9 | Midterm |
| 10 | In the CAD program, machine tool bolts, rivets, gears, bearing drawings |
| 11 | In the CAD program, machine tool bolts, rivets, gears, bearing drawings |
| 12 | Drawing and analysis of metal sheet and profile parts in CAD program |
| 13 | Drawing and analysis of metal sheet and profile parts in CAD program |
| 14 | Technical picture symbol display in CAD program |
| 15 | Technical picture symbol display in CAD program |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE**  **CODE** | **241112017** | **COURSE**  **NAME** | INDUSTRIAL ROBOTS |

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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 | | | 1 | | | 10 | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | This course gives the information about the application of industrials robots. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is learn the type, their functions, and maintanance of  industrial robots. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | The students will be able to know the parts of industrial robots as well as their  maintenance. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Knowledge of industrial robot parts  2) Makes the maintenance of industrial robots | | | | | | | | |
| **TEXTBOOK** | | | | | Robot Tekniği, Asım Kurtoğlu | | | | | | | | |
| **OTHER REFERENCES** | | | | | Endüstriyel Robotlar, Prof.Dr. Mahmut Gülesin  Robot Dinamiği ve Kontrolü, Dr. Zafer Bingül, Dr. Serdar Küçük | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and Classification of Robot |
| 2 | Usage of robots |
| 3 | Kinematics of robots, robot components and peripheral parts |
| 4 | Robots and communication software, structure of robot arms |
| 5 | Fixed and mobile robots |
| 6 | Fixed and mobile robots |
| 7,8 | Mid – term exam |
| 9 | Visual perception in robotics |
| 10 | Manipulators |
| 11 | Palletising |
| 12 | Packaging |
| 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241112019** | **COURSE**  **NAME** | PROFESSIONAL ETHICS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 1 | | 0 | 0 | | | 0 | | 1 | 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 | | | 50 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Examining the concepts of ethics and morality, Investigating the factors that play a role in the formation of morality, studying to examine the concept of professional ethics and social responsibility. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aims at teaching the competencies related to professional ethics. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | Teaching professional ethics. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Examine the concepts of ethics and morality  2) Comply with the principles of professional ethics | | | | | | | | |
| **TEXTBOOK** | | | | | “Meslek Etiği”, Doç. Dr. Menşure Kolçak, Murathan Yayıncılık | | | | | | | | |
| **OTHER REFERENCES** | | | | | Lecture Notes | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection | | | | | | | | |

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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 | investigate the factors that play a role in the formation of morality |
| 5 | Examine the ethics of profession |
| 6 | Examine the ethics of profession |
| 7 | Analyzing the results of ethical behavior in professional life |
| 8-9 | Mid – term exam |
| 10 | Analyzing the results of corruption and unethical behavior in professional life |
| 11 | Analyzing the results of corruption and unethical behavior in professional life |
| 12 | Examine the concepts of social responsibility |
| 13 | Examine the concepts of social responsibility |
| 14 | Ethics in public, responsibilities of electrical technicians |
| 15 | Case studies |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241112020** | **COURSE**  **NAME** | Quality Assurance And Standards |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 2 | 1 | | 0 | 0 | | | 0 | | 1 | 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  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Quality concept, standard and standardization, standard's importance in production and service sector, management quality and standards, quality management systems, strategic management, process and resource management system. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to acquire qualifications related to quality assurance and standards in business life. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | This course helps students to establish the substructure of the quality system and apply the standards in the enterprises they are working with. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Establish the infrastructure of the quality management system.  2. Quality standards are applied.  3. Have information about quality management system models.  4. Process and resource management system are learned. | | | | | | | | |
| **TEXTBOOK** | | | | | 1.ŞİMŞEK H.,Toplam Kalite Yönetimi Kuram, İlkeler, Uygulamalar, Seçkin  Yayıncılık, Ankara, 2007.  2.TEKİN M., Kalite Güvence ve Standartları, Günay Ofset, Konya, 2007.  3. [Doç. Dr. Orhan Küçük,](https://www.seckin.com.tr/browser/fa/275229843/kitap/Do%C3%A7.%20Dr.%20Orhan%20K%C3%BC%C3%A7%C3%BCk) Kalite Kontrol ve Kalite Güvence Sistemleri, Kalite  Kavramı – Belgelerin Düzenlenmesi – Örnek Kalite El Kitabı, , 296 Syf. | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.BURNAK N., Toplam Kalite Yönetimi (İstatistiksel Süreç Kontrolü), Osmangazi Üniversitesi Yayınları, Eskişehir, 1997. | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **Topics** |
| 1 | Quality concept |
| 2 | Standard and standardization |
| 3 | Standard and standardization |
| 4 | Management quality standards |
| 5 | Management quality standards |
| 6 | Quality management system models |
| 7 | presentations |
| 8-9 | Midterm |
| 10 | Participate in the management |
| 11 | Process management system |
| 12 | Resource management system |
| 13 | Quality cost |
| 14 | International standardization studies |
| 15 | Presentations |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241113010** | **COURSE**  **NAME** | ALTERNATIVE CURRENT CIRCUIT  ANALYSIS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 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 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | | 1 | | | 20 | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic Definitions about Alternative Current, Alternative Current Response of  R,L and C Components, Analysis Methods of Alternative Current, Three- Phase Circuits | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To learn analysis methods of alternative current circuits. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL**  **EDUCATION** | | | | | To set a substructure for designing, analysing alternative current circuits by learning Alternative Current analysis methods. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Students get knowledge for Alternative Current Circuits about designing,  constructing and anaylzing. | | | | | | | | |
| **TEXTBOOK** | | | | | Alternatif Akım Devre Analizi, Hasan Selçuk Selek, Seçkin Yayıncılık | | | | | | | | |
| **OTHER REFERENCES** | | | | | Alternatif Akım Devre Analizi, Murat Ceylan, Seçkin Yayıncılık  Devre Analizi, AÖF YayınlarıAlternatif Akım Devreleri, Murat Ceylan, Seçkin Yayıncılık | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic Definitions about Alternative Current |
| 2 | Definition of Phase and Its Relations |
| 3 | Complex Representation of Time Domain Amplitudes |
| 4 | Polar Forms of Complex Numbers |
| 5 | Sinusoidal Sources |
| 6 | R-L-C-Serial Alternative Current Circuits |
| 7 | R-L-C-Serial Alternative Current Circuits |
| 8-9 | Mid – term exam |
| 10 | R-L-C-Parallel Alternative Current Circuits |
| 11 | Alternative Current Circuit Analysis Methods |
| 12 | Rezonans Circuit |
| 13 | Sinusoidal Continuous Power Equations |
| 14 | Power and Its Companization |
| 15 | Three-phase Circuits |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241113002** | **COURSE**  **NAME** | ELECRTIC MOTORS AND DRIVERS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 2 | | 2 | 0 | | | 3 | | 5 | COMPULSORY( X ) ELECTIVE() | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | |  | | |  | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | | 5 | | | %60 | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | %40 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | DC Motors, AC Motors, Synchronous Motors, Asynchronous Motors,  Servo - Motors, Laboratory Works. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1)Learning motor types, reading motor nameplates  2)Selecting motors according to the used area and powers  3)Understanding motor drviers and operating principles  4)Laboratory Works on motor types and drivers | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Developing students’ ability to use industrial engines and drivers. Enable  students to be used determines the type of engine. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Identifying motors and drivers that are used in the industry, in practice to determining the appropriate motor type. | | | | | | | | |
| **TEXTBOOK** | | | | | “Elektrik Motorları ve Sürücüleri”, Ali Özdemir, Birsen Yayınevi | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1) “Asenkron Motorlar”, Prof. Dr. İlhami Çolak, Seçkin Yayıncılık  2)“Doğru Akım Makineleri ve Sürücüleri”, Prof. Dr. Güngör Bal, Seçkin Yayıncılık  3)“Elektrik Makineleri Deneyleri”, Nur Bekiroğlu, Sibel Zorlu, İbrahim Şenol, İzzet Önel, Mustafa Aydeniz, Oktay Aybar, Birsen Yayınevi  4)Laboratory Sheets | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, PC, servo motors and drivers, step motors, power supply, dc motor | | | | | | | | |

|  |  |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Direct Current Motors |
| 2 | Alternative Current Motors |
| 3 | Single – phase motors |
| 4 | Laboratory Work |
| 5 | Three Phase Asynchronous motors |
| 6 | Laboratory work |
| 7 | Step motors |
| 8-9 | Mid – term exam |
| 10 | Laboratory work |
| 11 | Servo motor and drivers |
| 12 | Servo motor and drivers |
| 13 | Laboratory work |
| 14 | Laboratory work |
| 15 | Motors in industry |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSE**  **CODE** | **241113003** | **COURSE**  **NAME** | INDUSTRIAL AUTOMATION |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 2 | | 2 | 0 | | | 3 | | 5 | COMPULSORY( X ) ELECTIVE() | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | |  | | |  | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | | 6 | | | %60 | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | %40 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Identifying automatic control elements, symbols of automatic control  elements, Project automatic control circuits and implementations of the applications. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of course is to define automatic control elements, to provide usage  of automatic control elements, to projects for power and control circuits. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Automatic control elements, automatic control elements usage, projects and systems which use automatic control elements. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1)Usage of automatic control elements  2)Establish circuits of power and control  3)Projects for power and control circuits  4)Reading projects of power and control circuits | | | | | | | | |
| **TEXTBOOK** | | | | | “Elektrik Kumanda Devreleri ve Deneyleri”, Lütfü Hayta, Birsen Yayınevi | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1)“Elektromekanik Kumanda Sistemleri”, Yrd. Doç. Dr. Nuray At,  Yrd. Doç. Dr. Hanife Apaydın Özkan, Anadolu Üniversitesi  Açıköğretim Fakültesi Yayınları  2)“Elektrik Kumanda Devreleri”, Prof. Dr. İlhami Çolak, Doç. Dr.  Ramazan Bayındır, Seçkin Yayıncılık  3)Megep Notes , Laboratory sheets | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | PC, projection, basic laboratory equipments, control circuit elements | | | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Automatic Control circuit Devices and Applications |
| 2 | Automatic control circuit symbols |
| 3 | Control panels and Introduction to control circuits |
| 4 | Project the power and control circuits, reading projects |
| 5 | Project the power and control circuits, reading projects |
| 6 | Asynchronous motor drive techniques |
| 7 | Movement systems, changing rotation of asynchronous motors |
| 8-9 | Mid – term exam |
| 10 | Laboratory work - driving asynchronous motor with control circuit devices |
| 11 | Laboratory work - controlling asynchronous motor to CW and CCW |
| 12 | Laboratory work – star – delta control of asynchronous motor |
| 13 | Laboratory work – time relay usage |
| 14 | Laboratory work – An industrial application |
| 15 | Laboratory work – An industrial application |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSE**  **CODE** | **241113011** | **COURSE**  **NAME** | AUTOMATIC CONTROL |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 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 | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | | 1 | | | 20 | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction to Automatic Control Systems, History of Automatic Control,  Types of Automatic Control Systems, Open-Loop & Closed Loop Control  Systems, Types of Controllers, Tranfer Functions, Stability | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To learn the operation principle of automatic control systems. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | To learn the operation principle of automatic control systems. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | To learn the operation principle of automatic control systems. To learn the controller types and the definition of stability. | | | | | | | | |
| **TEXTBOOK** | | | | | Otomatik Kontrol, Fikret Çalışkan, Birsen Yayınevi | | | | | | | | |
| **OTHER REFERENCES** | | | | | Otomatik Kontrol Sistemleri, Mehmet Önder Efe, Seçkin Yayınevi  Otomatik Kontrol, İbrahim Yüksel, Nobel Yayıncılık | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, Computer | | | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to automatic control systems |
| 2 | History of Automatic Control, Types of Automatic Control Systems |
| 3 | Principles of Control, Open-Loop & Closed Loop Control Systems |
| 4 | Laplace Transformation and Its Properties |
| 5 | Laplace Transformation and Its Properties |
| 6 | Tranfer Functions, Block Diagrams, Signal Flow Graphics |
| 7 | Tranfer Functions, Block Diagrams, Signal Flow Graphics |
| 8-9 | Mid – term exam |
| 10 | Time Domain Analysis of Control Systems, 1st and 2 nd degree Systems, Time Responses |
| 11 | Time Domain Analysis of Control Systems, 1st and 2 nd degree Systems, Time Responses |
| 12 | Types of Controllers |
| 13 | Steady State Error of Systems, Stability Analysis of Linear Feedback Control Systems |
| 14 | Stability |
| 15 | Routh Hurwitz Stability Criteria |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE**  **CODE** | **241113012** | **COURSE**  **NAME** | ANALOGUE 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(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 | | | 2 | | | 20 | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Semiconductor circuit components, Diode, Transistor, Opamp and its working  principles in circuits, applications. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To learn the working principles of semiconductor components and their  calculations and applications. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | To get knowledge about semiconductor components, their usage and working  principles. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | To get knowledge about semiconductor components, their usage and working  principles and basic applications. | | | | | | | | |
| **TEXTBOOK** | | | | | Electronik 1, Hasan Selçuk Selek, Seçkin Yayıncılık | | | | | | | | |
| **OTHER REFERENCES** | | | | | Analog Elektronik, Ömer Ercan, Altaş Yayıncılık  Elektronik 1, Hüseyin Demirel, Birsen Yayınevi | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Semiconductor Technology |
| 2 | Diodes – Types of Diodes, Their Application Area |
| 3 | Diodes in DC and AC Circuits |
| 4 | Clamper, Regulator, Clippine Circuits |
| 5 | Laboratory |
| 6 | BJT Transistors |
| 7 | BJT Transistors |
| 8-9 | Mid – term exam |
| 10 | Analysis of BJT Transistors in DC Circuits |
| 11 | Laboratory |
| 12 | FET, MOSFET |
| 13 | FET, MOSFET |
| 14 | OPAMP |
| 15 | OPAMP |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241113013 | **COURSE**  **NAME** | MACHINE ELEMENTS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 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 | |  | | | |  | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | | 2 | | | 20 | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | To learn structures of components of machinery forming machines | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To have knowledge of machinery parts | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | To know machinery parts fundemental concepts | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Knowledge of types and classification of machine elements  2. Knowing the types of tensile strength calculation methods  3.Knowing removable merger elements and their strength calculations  4.Knowing nonremovable merger elements and their strength calculations | | | | | | | | |
| **TEXTBOOK** | | | | | Cahit Kurbanoğlu, Makina elemanları: teori, konstrüksiyon ve problemler | | | | | | | | |
| **OTHER REFERENCES** | | | | | Tezcan Şekercioğlu, Makine Elemanları Hesap Şekillendirme  Kadir Çavdar, Fatih C. Babalık, Makine Elemanları ve Konstrüksiyon Örnekleri | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and 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 |
| 7,8 | Mid – term exam |
| 9 | Rivet links |
| 10 | Riveted joints |
| 11 | Welded and brazed joints |
| 12 | Bolted joints |
| 13 | Shafts |
| 14 | Rolling bearings |
| 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):**

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theor**  **y** | | **Practic**  **e** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 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 | | | | ( ) | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | | 3 | | | 30 | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Knowledge and application of industrial measurmenet devices. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Students should be able to use and learn the industrial measurmenet devices | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | The students should be able to analyse mechatronics devices. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Ability to measure mechatronical devices | | | | | | | | |
| **TEXTBOOK** | | | | | Ölçme Tekniği. Tezcan Şekercioğlu | | | | | | | | |
| **OTHER REFERENCES** | | | | | Endüstriyel kontrol ve arıza analizi, Ersoy Tuncay  Laboratuar teknikleri, Süreyya Saltan Evrensel | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projection | | | | | | | | |

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Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241113014 | **COURSE**  **NAME** | INDUSTRIAL MEASUREMENT TECHNICS |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to industrial measurement |
| 2 | Calipers, Micrometers, DSC,DTA |
| 3 | Taper measuring, force measurement systems, surface roughness. |
| 4 | SEM, TEM, XRD analysis techniques. |
| 5 | Measuring mechanical properties (hardness, tensile-compression) |
| 6 | Chemical Properties Measurement (corrosion, pH) |
| 7,8 | Mid – term exam |
| 9 | Resistance readings and measurement |
| 10 | Measurement instruments and current-voltage measurement |
| 11 | Condenser-coil-semi-conductor measurement |
| 12 | Measurements in power systems |
| 13 | Ground measurements |
| 14 | Measurements with the oscilloscope |
| 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE**  **CODE** | **241113015** | **COURSE**  **NAME** | SENSORS AND ACTUATORS |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 2 | | 0 | 0 | | | 2 | | 3 | COMPULSORY() ELECTIVE(X) | | |  |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | |  | | |  | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | | 5 | | | %60 | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | %40 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Digital And Analogue Sensors’ Types, Applications, Digital And Analogue  Actuators’ Types, Applications | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1)Understanding digital and analogue data  2)Application of sensors  3)Understanding applications of actuators  4)Identifying actuators and sensors in industry  5)Reading catalogues of actuators and sensors | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Getting knowledge about sensors and actuators that are widely used in industry, performing applications of them, reading catalogues. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Sensors and actuators used in various fields in the industry recognition, the ability to use is gained. | | | | | | | | |
| **TEXTBOOK** | | | | | “Algılayıcılar ve Dönüştürücüler”, Prof. Dr. Osman Gürdal, Seçkin  Yayıncılık | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1)MEGEP notes  **2)**Laboratory Sheets  **3)**Catalogues | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, PC, Power supply, circuit equipments, sensors and actuators | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Digital Sensors, Analogue Sensors |
| 2 | Position Sensors, Inductive Sensors, Capacitive Sensors |
| 3 | Laser Sensors, Optical Sensors |
| 4 | Temperature Sensors, Level Sensors |
| 5 | Pressure Sensors, Flow Sensors |
| 6 | Laboratory |
| 7 | Laboratory |
| 8-9 | Mid – term exam |
| 10 | Laboratory |
| 11 | Digital Actuators, Analogue Actuators |
| 12 | Electrical Actuators |
| 13 | Hydrolic – Pneumatic Actuators, Mechanical Actuators |
| 14 | Laboratory |
| 15 | Laboratory |
| 16-17 | 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):**

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

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Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241113016 | **COURSE**  **NAME** | MECHATRONIC SYSTEMS IN  AUTOMOTIVE |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 2 | | 0 | 0 | | | 2 | | 3 | COMPULSORY( ) ELECTIVE(X) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 50 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Presentation of mechatronic parts in automotive | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Student should be able to find and describe the the mechatronics parts and  their functions in automotive | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Able to know the mechatronic part in the automotive | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Able to find and describe the mechatronics parts and their functions in  automotive | | | | | | | | |
| **TEXTBOOK** | | | | | STAUDT Wilfried, Motorculukta Metal Tekniği, Ajans-Türk Matbaacılık  Sanayi AŞ, Ankara, 1995.  DENTON, Tom, “Automobile Electrical and Electronic Systems” Third  Edition, 2004.  BOSCH, Robert GmbH, “Automotive Handbook” Bosch Publishers, 2008 | | | | | | | | |
| **OTHER REFERENCES** | | | | | None | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to automotive mechatronic systems |
| 2 | Automotive parts and components description |
| 3 | Automotive parts and components description |
| 4 | Understanding and analysis in automotive technical drawing |
| 5 | Engine and environmental elements of mechatronics |
| 6 | Engine and environmental elements of mechatronics |
| 7,8 | Mid – term exam |
| 9 | Automotive brake system |
| 10 | Mechatronics in automotive steering systems |
| 11 | Testing and maintenance of automotive mechatronic systems |
| 12 | New developments in automotive (hybrid, smart vision system) |
| 13 | Presentation |
| 14,15 | Presentation |
| 16,17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241113017 | **COURSE**  **NAME** | Trouble Shooting, Maintenance And Repair |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 2 | | 0 | 0 | | | 2 | | 3 | COMPULSORY( X ) ELECTIVE() | | |  |
| **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  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | This course describes mechatronic (machine and electronic systems)  devices or machines in terms of failure detection methods and maintenance methods in the process of failure. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aims to detect and maintain faults in systems such as sensors  and transducers, signal conditioning components, data display systems, pneumatic and hydraulic systems, mechanical actuation systems, electrical actuation systems, machine parts (gear wheels, miller, etc.). | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Mechatronic parts will be able to detect and maintain malfunctions. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1- Obtain the ability to detect and maintain the machines or parts containing  sensors and transducers, signal conditioning components, data display systems.  2 - Pneumatic and hydraulic systems, mechanical actuation systems, electrical actuation systems, machine parts (gear wheels, miller, etc.) will be able to find and care for the malfunction.  3-Normal and periodic maintenance is the reason and will learn the differences. | | | | | | | | |
| **TEXTBOOK** | | | | | 1-Önder Şişer, Elektronikte arıza bulma ve giderme teknikleri,  Yayınevi: [Altaş Yayıncılık](https://www.seckin.com.tr/browser/fy/971412269), 229 | | | | | | | | |

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| --- | --- |
|  | 2-[Mustafa Köksal](https://www.eganba.com/kisiler/mustafa-koksal), Bakım Planlaması, [Seçkin Yayıncılık](https://www.eganba.com/markalar/seckin-yayincilik)  3-Yaza[r W. Bolton](http://www.pandora.com.tr/Yazar/w-bolton/22842) Çevirme[n B. Koray Tunçalp,](http://www.pandora.com.tr/Yazar/b-koray-tuncalp/95807) Mekatronik, ISBN 9786054057085 | Türkçe | 580 Sayfa |
| **OTHER REFERENCES** | None |
| **TOOLS AND EQUIPMENTS REQUIRED** | Computer and Projection |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | What is fault finding, maintenance and repair? |
| 2 | What are mechatronic systems |
| 3 | How to get security in finding a fault and how to get it? |
| 4 | Logical approach to fault finding |
| 5 | Electronic fault finding techniques |
| 6 | Sensors and transducers, signal conditioning components, fault finding in data display systems |
| 7 | Pneumatic and hydraulic systems, mechanical actuation systems, electrical actuation systems, machine  parts (gear wheels, miller, etc.) to find and maintain fault. |
| 8-9 | Mid – term exam |
| 10 | Analogue / digital integrators and tests |
| 11 | Identification of defective electronic equipment |
| 12 | Electronic troubleshooting and maintenance techniques |
| 13 | Electronic card and material test methods |
| 14 | Difference between normal and periodic maintenance |
| 15 | Examples of normal or periodic maintenance for machines with mechatronic systems |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241113018 | **COURSE**  **NAME** | 3D PRINTING |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 3 | 2 | | 0 | 0 | | | 2 | | 3 | COMPULSORY( ) ELECTIVE(X) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 30 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | 30 | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 40 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Three-dimensional (3D) prototyping technology and its application areas. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1- Learn the advantages and limitations of three-dimensional (3D) prototyping technologies.  2-Learn the programs used in three-dimensional (3D) prototyping technologies.  3- Students will learn the parts and materials used in the three-dimensional (3D) prototyping device. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | The ability to use, manufacture and use the new technology, 3D prototyping technologies, will contribute to the vocational training of the parts, materials and programs | | | | | | | | |
| **COURSE OUTCOMES** | | | | | -What are the three-dimensional (3D) prototyping technologies?  - Working principle of three dimensional (3D) prototyping devices  - Programs used in three-dimensional (3D) prototyping technologies  - Parts and materials used in a three-dimensional (3D) prototyping device | | | | | | | | |
| **TEXTBOOK** | | | | | 1- Bora Arlı, Yavuz Kerem Demirbaş, Uygulamalarla 3 Boyutlu Yazıcı Yapımı ve Kullanımı, Abaküs Kitap - Yayınevi Genel Dizisi, (Türkçe)  2- Oliver Bothmann, 3D Printers: A Beginner's Guide, Fox Chapel Publishing (January 1, 2015, ISBN-10: 1565238710 (İngilizce)  3-Yazar W. Bolton Çevirmen B. Koray Tunçalp, Mekatronik, ISBN 9786054057085 | Türkçe | 580 Sayfa | | | | | | | | |
| **OTHER REFERENCES** | | | | | None | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | TOPİCS |
| 1 | 3D prototyping technology and history |
| 2 | 3D prototyping technique and types |
| 3 | 3D prototyping working principle (Extruder and Hot Print Ucu, electronic, motor, software, hot printing  area) |
| 4 | 3D prototyping working principle (Extruder and Hot Print Ucu, electronic, motor, software, hot printing  area) |
| 5 | 3D prototyping working principle (Extruder and Hot Print Ucu, electronic, motor, software, hot p rinting  area) |
| 6 | 3D prototyping materials |
| 7 | 3D prototyping application areas |
| 8-9 | Midterm exam |
| 10 | CAD (Computer Aided Design) and Modeling |
| 11 | CAD (Computer Aided Design) and Modeling |
| 12 | CAD-3D program compatibility: STL File Formation |
| 13 | Printing Techniques and Higher Quality Printing, calibration, G-code |
| 14 | Printing Techniques and Higher Quality Printing, calibration, G-code |
| 15 | Sample application in 3D printer |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241114010** | **COURSE**  **NAME** | PROGRAMMABLE LOGIC  CONTROLLERS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 2 | 0 | | | 3 | | 5 | COMPULSORY( X ) ELECTIVE() | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | |  | | |  | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | | 6 | | | %60 | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | %40 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Learning connections of PLC, using PLC on control circuits, writing PLC  codes, I/O and motor applications with PLC, analogue data applications on  PLC. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is learning and identifying PLC systems, solving  control problems with PLC. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | This course creates a basis for use of PLC as a controller in mechatronics systems. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1)Set up PLC system  2)Writing PLc codes  3)I/O applications on PLC  4)Motor control with PLC  5)Analogue Data on PLC | | | | | | | | |
| **TEXTBOOK** | | | | | “PLC Programlama ve S7 - 1200”, Yavuz Eminoğlu, Birsen Yayınevi | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1)“Uygulamalı PLC Programlama ve Operatör Panel Konfigürasyonu”,  Hasan Bayazıt, Dora Yayıncılık  2)“Codesys ile PLC Programlama”, Fatih Arslan, Birsen Yayınevi  3)Laboratory Sheets  4)Siemens s7-1200 Manuel, Festo Codesys Manuel | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | PC, Projection, PLC software, PLC, Power Supply, Control Circuits  Devices. | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic Technology of PLC, PLC units, PLC interface program |
| 2 | PLC interface, PLC programming |
| 3 | PLC interface, PLC programming |
| 4 | Ladder diagrams, programming PLC with ladder diagrams |
| 5 | Programming PLC with ladder diagrams, digital inputs / outputs on PLC |
| 6 | Analogue inputs / outputs on PLC |
| 7 | Panels with PLC |
| 8-9 | Mid – term exam |
| 10 | Laboratory work |
| 11 | Laboratory work |
| 12 | Laboratory work |
| 13 | Laboratory work |
| 14 | Laboratory work - PLC usage on a scenario with control circuit devices |
| 15 | Laboratory work - PLC usage on a scenario with control circuit devices |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241114002** | **COURSE**  **NAME** | HYDROLIC AND PNEUMATIC  SYSTEMS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 3 | | 2 | 0 | | | 4 | | 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 | | | 40 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | | 1 | | | 10 | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | To learn basic concepts of hydrolics and Pneumatics | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | In this lesson it is aimed that students gain sufficient info about hydrolic and  Pneumatic systems and fundemetal maintenance and failure correction skills | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL**  **EDUCATION** | | | | | Fundamental info about hydrolic and Pneumatic systems | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Learn parts that work with hydrolic and Pneumatic power in real working conditions | | | | | | | | |
| **TEXTBOOK** | | | | | Hidrolik Pnömatik, İsmail Karacan, Birsen Yayıncılık 2003 | | | | | | | | |
| **OTHER REFERENCES** | | | | | Hidrolik Pnömatik Sistemler, Kemal Demirel  Hidrolik-Pnömatik, Hamdi Özkara | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and projector | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Hydraulic Systems, Principles of Hydraulics, SI Units, Hydraulic Pressure and Force |
| 2 | Solving problems on force transmission in hydrolic circuits , Hydraulic Fluids |
| 3 | Hydraulic Circuits and Hydraulic Elements |
| 4 | Hydrolic Pumps and Motors, Hydrolic Cylinders |
| 5 | Direction Control Valves, Pressure Control and Flow Fontrol Valves |
| 6 | Hydraulic Connectors, Hydraulic Sealing Components |
| 7,8 | Mid – term exam |
| 9 | Pneumatic Systems, Principles of Pneumatics, Pneumatic Pressure and Theories |
| 10 | Properties of Air, Pneumatic Circuits and Pneumatic Elements |
| 11 | Compressors, Cylinders, Pneumatic Motors |
| 12 | Pneumatic Valves, FRLs |
| 13 | Implementation |
| 14 | Implementation |
| 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

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**Mechatronics – Course Information Form**

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

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| **COURSE CODE** | **241114020** | **COURSE NAME** | MICROCONTROLLER BASED  CONTROL |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 3 | | 0 | 0 | | | 3 | | 3 | COMPULSORY( X ) ELECTIVE() | | |  |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with (****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 50 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | All Necassary Operations for developing microcontroller based system. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1.Uploading program to the microcontroller  2.Constructing algorithm and flow diagram for solving the problem  3.Using registers of microcontrollers.  4. Using codes of microcontrollers.  5. Constructing fundamental input-output programmes by using microcontrollers  6. Program compiling. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL**  **EDUCATION** | | | | | Selecting a microcontroller for solving a problem and designing an algorithm  for this controller. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | To select the appropriate microcontroller according to the work by learning the hardware and software of the controllers & uploading the program to the microcontroller. | | | | | | | | |
| **TEXTBOOK** | | | | | PIC 16F877A Proje Tasarımı,Fevzi Akar Mustafa Y. Şeçkin Yayınevi, 2007  The C Programming Language, Kernighan, Ritchie, 1988  Bilgisayar Sistemleri Mimarisi, M. Morris Mano, 2015 | | | | | | | | |
| **OTHER REFERENCES** | | | | | Internet | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Microcontroller Hardware |
| 2 | Microcontroller Hardware |
| 3 | Uploading Program to Microcontroller |
| 4 | Designing Algorithm |
| 5 | Flow Diagrams |
| 6 | Memory and Registers in Microcontroller |
| 7,8 | Midterm exam |
| 9 | Memory and Registers in Microcontroller |
| 10 | Microcontroller program codes |
| 11 | Microcontroller program codes |
| 12 | Fundamental input output programs |
| 13 | Program Compiling |
| 14,15 | Applications |
| 16,17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241114012** | **COURSE**  **NAME** | COMPUTER AIDED MACHINE TOOLS |

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| **SEMESTE R** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 2 | 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 | | **X** | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 40 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Learning computer-controlled machining workbenches and programming  especially with the differences of CNC lathe and CNC milling benches and G  codes. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is;  -CNC lathe lathe and CNC milling loom connecting parts and learning to reset the cutting tool.  - To understand the differences between CNC lathes and CNC milling looms.  -CNC lathes and CNC milling machine to run the necessary programs to learn and G-codes to write. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL**  **EDUCATION** | | | | | It will be able to write the necessary programs for CNC lathe and milling  looms, to make parts and cutting tool reset, and to use related devices. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1)Learn the differences between computer aided machine tools and especially the difference between CNC lathe and milling machine.  2) To connect parts and cutter for CNC lathe and milling machine and to be able to do zeroing.  3) Gaining the ability to use CNC lathe and milling machine control panel  4) To do basic program coding for CNC lathe and milling machine. | | | | | | | | |
| **TEXTBOOK** | | | | | 1-Bilgisayar Destekli, Takım Tezgahlar (CNC) ve Bilgisayar Destekli Tasarım  ve İmalat,(CAD–CAM Sistemleri), [Mustafa Akkurt,](https://www.seckin.com.tr/browser/fa/212558713/kitap/Mustafa%20Akkurt) / 400 Syf.  2- Takım Tezgahları Teori ve Hesapları, Yazar: [Faruk Mendi](http://www.idefix.com/Yazar/faruk-mendi/s%3D105271) | | | | | | | | |

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|  | Yayınevi, [Gazi Kitabevi](http://www.idefix.com/Yayinevi/gazi-kitabevi/s%3D3915)  3- Talaş Kaldırma ve Takım Tezgâhları, [Prof. Dr. Mustafa Akkurt](http://www.kitapyurdu.com/yazar/prof-dr-mustafa-akkurt/53048.html)  [Birsen Yayınevi.](http://www.kitapyurdu.com/yayinevi/birsen-yayinevi/524.html) |
| **OTHER REFERENCES** | None |
| **TOOLS AND EQUIPMENTS REQUIRED** | Computer and projection. |

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| **COURSE SYLLABUS** | |
| **WEEK** | Topics |
| 1 | What are computer controlled machine tools and what are their differences? |
| 2 | CNC Lathe: Cutter types, specifications and usage places, Zeros on the parts and reset  operation |
| 3 | CNC lathe working principle with control panel |
| 4 | CNC lathe application part and cutter tool reset display |
| 5 | Programming codes on CNC lathe |
| 6 | Programming codes on CNC lathe |
| 7 | CNC lathe part exercises |
| 8-9 | Midterm exam |
| 10 | CNC milling cutter types, features and usage places. |
| 11 | Zeros on the parts and reset operation |
| 12 | Working principle of CNC milling machine and control panel |
| 13 | CNC milling machine parts and cutting tool zeroing |
| 14 | Programming codes on CNC milling machine |
| 15 | Programming codes on CNC milling machine |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE CODE** | **241114021** | **COURSE NAME** | PROJECT |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 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 | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Project researching, designing, developing, presenting. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To direct students individual and group studies. To learn project components and process. To develop researching, writing, presenting activities. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Students learn the project process and they will be able to use their experiences in same or different subjects. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Learning individual and group studies, project management, developing research, design, presentation acitivities. | | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Project Research |
| 2 | Project Research |
| 3 | Project Research |
| 4 | Project Research |
| 5 | Project Research |
| 6 | Project Design |
| 7 | Project Design |
| 8-9 | Mid-term exam |
| 10 | Project Design |
| 11 | Project Design |
| 12 | Project Design |
| 13 | Project Design |
| 14 | Project Design |
| 15 | Conclusion Project Presentation |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| --- | --- | --- | --- |
| **COURSE CODE** | 241114022 | **COURSE NAME** | Training |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 0 | | 2 | 0 | | | 0 | | 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 | | |  | | |  | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 100 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Practical Training | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Organization Application | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Organization Application | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Organization Application | | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Practical Training |
| 2 | Practical Training |
| 3 | Practical Training |
| 4 | Practical Training |
| 5 | Practical Training |
| 6 | Practical Training |
| 7 | Practical Training |
| 8-9 | Practical Training |
| 10 | Practical Training |
| 11 | Practical Training |
| 12 | Practical Training |
| 13 | Practical Training |
| 14 | Practical Training |
| 15 | Practical Training |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241114015** | **COURSE**  **NAME** | Renewable Energy |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 0 | 0 | | | 2 | | 3 | COMPULSORY( ) ELECTIVE(X) | | | 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 | | | 40 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definition and importance of energy, Relation between environment and  energy, Non-renewable energy sources, Classification of renewable energy sources, Solar energy, Wind energy, Hydraulic energy, Biomass energy, Hydrogen energy, Geothermal energy, Novel technologies in the field of energy, Energy efficiency and energy saving. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To learn the basic terms and applications of clean and sustainable **energy**  **production.** | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To comprehend the importance of relation between energy and environment. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To understand the relation between energy and environment,  **2.** To comprehend the position and importance of alternative energy sources in energy production. | | | | | | | | |
| **TEXTBOOK** | | | | | 1) Alternatif Enerji Kaynakları, Mustafa Arıcıoğlu, Nobel Yayın Dağıtım,  İstanbul, 2007.  2) Yenilenebilir Enerji Kaynakları, İsmet Akova, Nobel Yayın Dağıtım, 2008.  3) Yenilenebilir Enerji Kaynakları ve Kullanımı, Hüseyin Öztürk, Teknik yayınevi.  4) Güneş Enerjisi Sistemleri ve Tasarımı, [İlhan Ceylan,](http://www.dr.com.tr/Yazar/ilhan-ceylan/s%3D323616) [A. Etem Gürel,](http://www.dr.com.tr/Yazar/a--etem-gurel/s%3D323617) Dora  Yayıncılık. | | | | | | | | |

|  |  |
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| **OTHER REFERENCES** | 1- Yenilenebilir Enerji Kaynakları Ders Notları |
| **TOOLS AND EQUIPMENTS REQUIRED** | Computer and projection. |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and importance of energy |
| 2 | Relation between environment and energy |
| 3 | Non-renewable energy sources |
| 4 | Classification of renewable energy sources |
| 5 | Solar energy |
| 6 | Wind energy |
| 7 | Presentation |
| 8-9 | Mid – term exam |
| 10 | Hydraulic energy |
| 11 | Biomass energy |
| 12 | Hydrogen energy |
| 13 | Geothermal energy |
| 14 | Energy efficiency and energy saving |
| 15 | Presentation |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | 241114016 | **COURSE**  **NAME** | COMMUNICATION TECHNOLOGIES |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 0 | 0 | | | 2 | | 3 | COMPULSORY( ) ELECTIVE(X) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | | 1 | | | 50 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Communication Technologies, parallel communication protocols, serial  communication protocols, fiber optic, communication in industry. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is identifying communication systems between  devices in industry. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Students get ability of usage different types of communication systems in industry. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1)Understanding serial and parallel communication protocols.  2)Understanding communication between devices.  3)Understanding fiber optic technology. | | | | | | | | |
| **TEXTBOOK** | | | | | Kayran, A.H., Analog Haberleşme, Birsen Yayınevi, 2000.  G. Proakis, M. Salehi, Coomunication Ssystems Engineering, third edition, Prentice Hall, 2005.  S. Haykin, Coomunication Systems, fourth edition, Wiley, 2000. | | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to communication |
| 2 | Serial communication protocols |
| 3 | Parallel communication protocols |
| 4 | Laboratory works |
| 5 | MODBUS, PROFIBUS |
| 6 | Ethernet, network technologies |
| 7,8 | Mid – term exam |
| 9 | Fiber optic |
| 10 | Fiber optic |
| 11 | Communication between devices |
| 12 | Communication between devices |
| 13 | Communication in industry |
| 14,15 | Communication in industry |
| 16,17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241114017** | **COURSE**  **NAME** | MECHATRONICS IN RAILWAY  SYSTEMS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 0 | 0 | | | 2 | | 3 | COMPULSORY() ELECTIVE(X) | | | Turkish |
| **COURSE CATEGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Technical** | | | | **Program-Specific Course**  **[if it contains considerable practice, mark with**  **(****)]** | | | | | | **Social Science** | |
|  | |  | | | | () | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID - TERM** | | | | | **Evaluation**  **Type** | | | **Quantity** | | | **%** | | |
| 1st Mid – Term | | |  | | |  | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | | 1 | | | %50 | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | | 1 | | | %50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Mechatronics in railway systems, railway signalization systems,  signalization equipments. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1)Understanding usage of mechatronics in railway systems  2)Understanding railway signalization systems  3)Learning technological developments in railway systems  4)Railway systems examples | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | Identifying application areas of mechatronics. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | Learning developments in railway technlogy and importances of mechatronics in railway systems. | | | | | | | | |
| **TEXTBOOK** | | | | | “Raylı Sistemlerin Temelleri”, Clifford F. Bonnett, Nobel Yayıncılık | | | | | | | | |
| **OTHER REFERENCES** | | | | | 1)Megep Notes | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | PC, Projection, Internet | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction To Railway Systems |
| 2 | Mechatronics In Railway Systems |
| 3 | Introduction To Railway Signalization Systems |
| 4 | Railway Signalization Equipments, Point Machines |
| 5 | Railway Signalization Equipments, Signals, Level Crossings |
| 6 | Railway Signalization Equipments, Track Circuits, Axle Counters |
| 7 | Central Traffic Control (Ctc) |
| 8-9 | Mid – term exam |
| 10 | Central Traffic Control (Ctc) |
| 11 | Railway Signalization Rules |
| 12 | Failure And Maintenance In Railway Signalization Systems |
| 13 | Convensional Lines Technology And Examples, Accelerated Lines Technology And Examples |
| 14 | Light Rail Systems Technology And Examples |
| 15 | Presentations |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241114018** | **COURSE**  **NAME** | STATISTICS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 0 | 0 | | | 2 | | 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 | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 60 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Fundamentals of statistics, Data collection, management and presentation,  Central tendency, Measure of dispersion, Indexes, Probability theory, Random variables, Regression, Trend and Correlation analysis. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Learning fundamentals of statistics, data collection, management and  presentation, ventral tendency. Ability to calculate measure of dispersion, indexes, Learning probability theory, random variables, regression, trend and correlation analysis. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | Provide required statistics knowledge to student. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | **1**. Use of definition and history, data collection methods, analysis methods of  statistics, frequency tables, central tendency measurement, dispersion measurement, probabilistic calculations, hypothesis tests.  **2**. Applications of these issues in field. | | | | | | | | |
| **TEXTBOOK** | | | | | **Yıldız,E.(2004)** İstatistik. Trabzon : Dilara Yayınevi | | | | | | | | |
| **OTHER REFERENCES** | | | | | Anadolu Üniversitesi Açıköğretim Fakültesi (2002) İstatistik. Eskişehir:  Anadolu Üni. Yayını  Çömlekçi,N.(1998) Temel İstatistik. Eskişehir: Bilim Teknik Yayınevi  Poyraz,K(2004) Temel İstatistik Kütahya: Dumlupınar Üni. Yayını | | | | | | | | |

**TOOLS AND EQUIPMENTS**

**REQUIRED** Calculator

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Fundamentals of Statistics |
| 2 | Collecting Data |
| 3 | Data Management |
| 4 | Data Presentation |
| 5 | Central Tendency |
| 6 | Measure of Dispersion |
| 7 | Measure of Dispersion |
| 8-9 | Mid – term exam |
| 10 | Indexes |
| 11 | Probability Theory |
| 12 | Random Variables |
| 13 | Regression Analysis |
| 14 | Trend Analysis |
| 15 | Correlation Analysis |
| 16-17 | 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):**

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

metin, simge, sembol, logo, amblem içeren bir resim

Açıklama otomatik olarak oluşturuldu**ESOGU Eskişehir Vocational School**

**Mechatronics – Course Information Form**

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

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| **COURSE**  **CODE** | **241114019** | **COURSE**  **NAME** | AVIATION MECHATRONICS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | | **ECTS** | **TYPE** | | | **Language** |
| 4 | 2 | | 0 | 0 | | | 2 | | 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 | | | 50 | | |
| 2nd Mid – Term | | |  | | |  | | |
| Quiz | | |  | | |  | | |
| Homework | | |  | | |  | | |
| Project | | |  | | |  | | |
| Report | | |  | | |  | | |
| Others  (Laboratory) | | |  | | |  | | |
| **FINAL EXAM** | | | | |  | | |  | | | 50 | | |
| **PREREQUIEITIE(S)** | | | | | NONE | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Introduction to Mechatronics, Mechatronics Systems in Aero Vehicles, UAV  (Unmanned Aero Vehicles). | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To get knowledge about Mechatronics Systems in Aero Vehicles. | | | | | | | | |
| **ADDITIVE OF COURSE TO**  **APPLY PROFESSIONAL EDUCATION** | | | | | To get knowledge about the usage of Mechatronics Systems in Aviation  Sector. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | To get knowledge about Mechatronics Systems in Aviation Sector. | | | | | | | | |
| **TEXTBOOK** | | | | | MEB Megep Modül ve Dökümanları | | | | | | | | |
| **OTHER REFERENCES** | | | | | THY JAMF Eğitim Dökümanları  İnternet | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection, Computer | | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic Mechatronics Definitions |
| 2 | Control Hardware in Mechatronics |
| 3 | Electronics Hardware in Mechatronics System |
| 4 | Flight Control System |
| 5 | Flight Control System |
| 6 | Propulsion System |
| 7 | Propulsion System |
| 8-9 | Mid – term exam |
| 10 | Avionics System |
| 11 | Avionics System |
| 12 | Environmental Systems |
| 13 | Environmental Systems |
| 14 | UAV (Unmanned Aero Vehicles) |
| 15 | UAV (Unmanned Aero Vehicles) |
| 16-17 | 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):**

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