**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171111113 | **COURSE NAME** | Atatürk’s Pr. & The History of Rev. I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (x ) ELECTIVE () | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | |  | |  |
| Quiz | | | | | 1 | | 40 |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The Description of the term “revolution”; major historical events in the Ottoman Empire to the end of World War I; a general overview of Mustafa Kemal’s life; certain associations and their activities; arrival of Mustafa Kemal to Samsun; the congresses, 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; 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** | | | | | To help the students to appreciate the hard conditions under which the war of independence, under the leadership of Mustafa Kemal, was fought and how an independent Turkish state was created. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To underline the idea that the national unity based on the principle “peace in the country peace in the world” can only be achieved through political, economic and military progress. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. At the end of this course; Students  1.Explains Principles of Atatürk and main concepts related to Revolution history.  1.1.Explians the concepts of Reform/Revolution.  1.2.Describes the concept of National Forces.  1.3.Explains the concepts of Republic/Democracy.  1.4.Recognizes the concept of Ideology.  2.Explains the main points of the period related to Turkish War of Independence and foundation of the Turkish State.  2.1.Explains the developments at Ottoman Empire before Turkish Revolution.  2.2.Describes the World War I and its results.  2.3.Explains Turkish War of Independence.  2.4.Recognizes Turkish Revolution.  2.5.Remembers the mian principles of Turkish foreign politics.  2.6.Explains Principles of Atatürk and their importance.  3.Explains the effects of the developments at Europe and World on Turkish Republic.  3.1.Explains the effects of European and World politics on Turkey and the results of them.  3.2.Describes the effects of Capitalism/Emperialism on Turkey.  3.3.Explains the relations / problems between Turkey and its neighbours.  3.4.Explains the importance of Turkey at Europe and World. | | | | | | | |
| **TEXTBOOK** | | | | | Gazi Mustafa Kemal Atatürk, **Nutuk (Söylev)**, C. I-II, TTK., Ank., 1986. Türk İnkılâp Tarihi, Cemil Öztürk (ed.), Ank., 2011. | | | | | | | |
| **OTHER REFERENCES** | | | | | Niyazi Berkes, **Türkiye’de Çağdaşlaşma**, İstanbul, 1978.  Enver Ziya Karal, **Atatürk ve Devrim** (Konferanslar ve Makaleler), TTK., Ankara, 1980.  Enver Ziya Karal, **Atatürk’ten Düşünceler**, MEB. Yay., Ankara, 1981.  Bernard Lewis, **Modern Türkiye’nin Doğuşu**, Çev.M.Kıratlı, TTK., Ankara, 1970. Ahmet Mumcu, Tarih Açısından Türk Devriminin Temelleri ve Gelişimi, Ankara, 1976. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Projection Machine, Maps, Photographs, Diagrams | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The Description of the term “revolution”; |
| 2 | Major historical events in the Ottoman Empire to the end of World War I |
| 3 | General overview of Mustafa Kemal’s life |
| 4 | Certain associations and their activities |
| 5 | Arrival of Mustafa Kemal to Samsun |
| 6 | The congresses, gathering of the last Ottoman Assembly and the proclamation of the “national oath. |
| 7-8 | MID-TERM EXAM |
| 9 | Opening of the Turkish Grand National Assembly |
| 10 | War of independence to the Victory of Sakarya |
| 11 | Victory of Sakarya; financial sources of the war of independence. |
| 12 |  |
| 13 | Grand counter-attack; Armistice of Mudanya; abolution of the Sultanate |
| 14 | Peace Conference of Lausanne |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | X |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | X |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | X |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | X |  |  |
| 5 | Ability to follow and interpret the contemporary issues | X |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  | X |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | X |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | X |
| 9 | Ability to explain natural events based on scientific basis. | X |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | X |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | X |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | X |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | X |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | X |
| 15 | Ability to identify and solve the problems in accordance with stages. |  | X |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assis. Prof. Dr. Volkan MARTTİN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171111114 | **COURSE NAME** | Introduction to Educational Science |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | |  | | | | | |
| **Theory** | | **Practice** | | **Labratory** | | **Credit** | | **ECTS** | **TYPE OF COURSE** | | **LANGUAGE OF COURSE** |
| I | 3 | | 0 | | 0 | | 3 | | 6 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | **General Culture Knowledge** | | | | **Elective Course** | | | | |
| %75 | |  | | %25 | | | | General Knowledge( ) Content Knowledge ( ) | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 20 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | | \_\_ | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Basic concepts of education, basic concepts of teaching and teaching as a profession, the development of teacher education in Turkey and innovations and developments in the field of teacher education, the legal foundations of education, the psychological foundations of education, the philosophical foundations of education, the historical foundations of education, the economical foundations of education, the psychological foundations of education, the political foundations of education, method in educational science, functions of education, looking, social change and innovation from the perspective of educational sciences, school as a social system, class as a social system and learning environment, Turkish Education System, alternative perspectives in education, criticisms about school and education. | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The purpose of this course is to ensure general knowledge about educational science to teacher candidates and to gain a perspective about teaching as a profession. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | | 1. Having knowledge about the basic concepts of education and their meanings. 2. Having knowledge about basic concepts of teaching and their contexts. 3. Understanding the properties of teaching profession. 4. Understanding the main roles of teachers in the classroom, in the school and in the environment.  5. Understanding the legal, social, psychological, philosophical, historical, economic, political foundations of education.  6. Analyzing the structure and function of the school. 7. Analyzing the class as a social system. 8. Interpreting and evaluating the different perspevtives to school and education.  9. Understanding the structure and function of Turkish Education System.  10. Analyzing the issues about school and education in national and international dimensions. | | | | | | |
| **TEXTBOOK** | | | | | | Şişman, M. (2011). Eğitim Bilimine Giriş (9. baskı). Ankara: Pegem A Yayıncılık. | | | | | | |
| **OTHER REFERENCES** | | | | | | Şişman, M. (2011). Eğitim Bilimine Giriş (9. baskı). Ankara: Pegem A Yayıncılık.Özden, Y. & Turan, S. (Ed.). (2011). Eğitim Bilimine Giriş (1. baskı). Ankara: Pegem A Yayıncılık.Küçükahmet, L. (Ed.). (201). Eğitim Bilimine Giriş (8. baskı). Ankara: Nobel Yayın Dağıtım.Demrel, Ö. & Kaya, Z. (Ed.). (2011). Eğitim Bilimine Giriş (6. baskı). Ankara: Pegem A Yayıncılık.Karip, E. (Ed.). (2011). Eğitim Bilimine Giriş (4. baskı). Ankara: Pegem A Yayıncılık.Oktay, A. (Ed.). (2011). Eğitim Bilimine Giriş (5. baskı). Ankara: Pegem A Yayıncılık.Karslı, M. D. (Ed.). (2010). Eğitim Bilimine Giriş (3. baskı). Ankara: Pegem A Yayıncılık. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concepts, purpose and function of education |
| 2 | The historical foundations of education |
| 3 | The social foundations of education |
| 4 | The legal foundations of education |
| 5 | The political foundations of education |
| 6 | The economical foundations of education |
| 7-8 | MID-TERM EXAM |
| 9 | The philosophical foundations of education |
| 10 | The psychological foundations of education |
| 11 | Teaching as a profession |
| 12 | Research methods in educational sciences |
| 13 | The structure and properties of Turkish Education System |
| 14 | New dimensions and alternative perspectives about education |
| 15-16 | FINAL EXAM |

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| **NO** | **ELEMENTARY SCIENCE EDUCATION PROGRAM OUTCOME** | **3** | **2** | **1** |
| 1 | Ability to comprehend and apply knowledge related to Basic Science |  | **x** |  |
| 2 | Ability to plan and prepare Teaching Activities in Science, to use general teaching principles, methods and techniques |  |  | **x** |
| 3 | Ability to transfer knowledge learned in Science to life and to narrate to third person with this transfer |  | **x** |  |
| 4 | Ability to understand the importance and place of science, to apply this when it is necessary and connect to interdisciplinary fields. |  | **x** |  |
| 5 | Ability to follow and interpret contemporary issues |  | **x** |  |
| 6 | Ability to work in collaboration, gain professional and ethical responsibility |  |  | **x** |
| 7 | Ability to develop science literacy for the purposes of basic objects of Science Teaching |  | **x** |  |
| 8 | Ability to analysis the new Science program (gain, teaching-learning process, evaluation etc.) |  |  | **x** |
| 9 | Ability to explain natural phenomena on the basis of the scientific basis |  |  | **x** |
| 10 | Ability to gain scientific process skills and to facilitate their lives by using these in different stages of the later life |  | **x** |  |
| 11 | Ability to use methods and techniques suitable for characteristics of students’ personal development |  |  | **x** |
| 12 | Ability to prepare a plan by utilizing Science program, to present a lesson by organizing equipment and materials |  |  | **x** |
| 13 | Ability to select, design and apply science experiments suitable for the subject, to analyze data and to make scientific report by interpreting them |  |  | **x** |
| 14 | Ability to have a knowledge of laboratory safety and to use it when it is necessary |  |  | **x** |
| 15 | Ability to identify the problems and solve them in accordance with stages | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist Prof. Dr. Elif ÖZOĞLU AYDOĞDU

** ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171111108 | **COURSE NAME** | Physics I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 4 | | 0 | 0 | | | 4 | 5 | COMPULSORY ( X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| x | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 40 |
| Quiz | | | | | - | | - |
| Homework | | | | | 1 | | 5 |
| Project | | | | | - | | - |
| Report | | | | | - | | - |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 55 |
| **PREREQUIEITE(S)** | | | | | --------- | | | | | | | |
| **BRIEF CONTENT OF COURSE** | | | | | Standards, SI unit system, dimension analysis, vectors. Movement Science (Kinematic): Definition of movement and variables, Examples of one and two dimension motion in space, Relative speed. Force Science (Dynamic): Newton’s laws and practices, Universal gravitation, Friction force. Energy: Work, Power, Mechanical energy types, Energy in conservative and non-conservative force system. Push, linear momentum: Mass center, interaction in one and two dimension space. Rotational Motion: Equilibrium in solid objects, Kinematics and dynamics, energy and angular momentum of rotational and rolling motion. Mechanical Properties of Matter: Granular structure of matter and its phases, Elongation, shear and volume flexibility, Pressure, Lifting force, Viscosity and Moving fluids, Bernoulli’s principles. Damped Motion: Kinematic, dynamic and energy of simple harmonic motion, damped and forced oscillation, resonance. | | | | | | | |
| **COURSE AIMS** | | | | | Giving the basic concepts and principles in mechanic/ electric subjects of physic to students in clear and logical manner provides an understanding of basic principles and concepts of physics in a wider perspective. | | | | | | | |
| **CONTRIBUTION OF THE COURSE TO PROVIDE OCCUPATIONAL EDUCATION** | | | | | Comprehend the knowledge of Science related to physic field, gaining problem solving skills and relate this information to everyday life. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Ability to understand knowledge on basic sciences, 2. Ability to analyze and evaluate basic physic science knowledge, 3. Ability to relate scientific knowledge related to physic science with everyday life, 4. Ability to relate Physic with the other science fields, 5. Ability to know , formulate and solve the problems of physic, | | | | | | | |
| BASIC COURSE BOOK | | | | | PHYSIC 1, SERWAY, Translation: Prof.Dr. Kemal Çolakoğlu, Palme Publishing | | | | | | | |
| HELPFUL RESOURCES | | | | | Basic Physic, Volume I; P. Fishbane, S. Gasiorovicz, S. T. Thornton, Translation: Prof.Dr. Cengiz YALÇIN, Arkadaş Publishing,Physic Principles 1; Frederick J. Bueche ve David A. Jerde, Translation: Prof.Dr. Kemal Çolakoğlu, Palme Publishing, 3. General Physic I-II, Kamil Temizyürek, Atlas Publication Distribution,  4. General Physic-I, Newtonian Theory of Force and Motion, Editors: M. F. Taşar, M. Orbay, Pegem Academy,  5. GENERAL PHYSIC and Scientific Principals of Technology, Editors: M. Orbay, Feda Öner, PegemA Publishing, | | | | | | | |
| **TOOLS AND MATERIALS NEEDED IN THE COURSE** | | | | | Writing Board, Computer, Projector. | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Standards, SI unit system, dimension analysis, vectors. |
| 2 | Movement Science ( Kinematic): Definition of movement and variables. |
| 3 | Examples of one and two dimension motion in space, Relative speed. |
| 4 | Force Science ( Dynamic): Newton’s laws and practices, Universal gravitation, Friction force. |
| 5 | Energy: Work, Power, Mechanical energy types, Energy in conservative and non-conservative force system. |
| 6 | Push, linear momentum: Mass center, interaction in one and two dimension space. |
| 7-8 | MID-TERM EXAM |
| 9 | Rotational Motion: Equilibrium in solid objects. |
| 10 | Kinematics and dynamics, energy and angular momentum of rotational and rolling motion. |
| 11 | Mechanical Properties of Matter: Granular structure of matter and its phases. |
| 12 | Elongation, shear and volume flexibility, Pressure, Lifting force. |
| 13 | Viscosity and Moving fluids, Bernoulli’s principles. |
| 14 | Damped Motion: Kinematic, dynamic and energy of simple harmonic motion, damped and forced oscillation, resonance. |
| 15-16 | FINAL EXAM |

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| **NO** | **ELEMENTARY SCIENCE EDUCATION PROGRAM OUTCOME** | **3** | **2** | **1** |
| 1 | Ability to comprehend and apply knowledge related to Basic Science |  | **x** |  |
| 2 | Ability to plan and prepare Teaching Activities in Science, to use general teaching principles, methods and techniques |  |  | **x** |
| 3 | Ability to transfer knowledge learned in Science to life and to narrate to third person with this transfer |  | **x** |  |
| 4 | Ability to understand the importance and place of science, to apply this when it is necessary and connect to interdisciplinary fields. |  | **x** |  |
| 5 | Ability to follow and interpret contemporary issues |  | **x** |  |
| 6 | Ability to work in collaboration, gain professional and ethical responsibility |  |  | **x** |
| 7 | Ability to develop science literacy for the purposes of basic objects of Science Teaching |  | **x** |  |
| 8 | Ability to analysis the new Science program (gain, teaching-learning process, evaluation etc.) |  |  | **x** |
| 9 | Ability to explain natural phenomena on the basis of the scientific basis |  |  | **x** |
| 10 | Ability to gain scientific process skills and to facilitate their lives by using these in different stages of the later life |  | **x** |  |
| 11 | Ability to use methods and techniques suitable for characteristics of students’ personal development |  |  | **x** |
| 12 | Ability to prepare a plan by utilizing Science program, to present a lesson by organizing equipment and materials |  |  | **x** |
| 13 | Ability to select, design and apply science experiments suitable for the subject, to analyze data and to make scientific report by interpreting them |  |  | **x** |
| 14 | Ability to have a knowledge of laboratory safety and to use it when it is necessary |  |  | **x** |
| 15 | Ability to identify the problems and solve them in accordance with stages | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Özden TEZEL

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | Fall |

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| **COURSE CODE** | 171111109 | **COURSE NAME** | General Physics Laboratory I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 0 | | 2 | 0 | | | 1 | 2 | COMPULSORY (x )ELECTIVE () | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | | 1 | | 30 |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | Practice | | | | | 1 | | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | |  | | --- | | Newton’s I. laws of motion, Newton’s II. laws of motion, Elastic collision, Inelastic collision, Explosive event in one dimension, Energy Conversion and kinetic energy, Moment of inertia, Spiral spring. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1.To give the prospective teachers the ability to lecture using the method of laboratory, design and implement experiments to make them recognize the tools and materials.  2.To develop the power of thinking practical while making experiments | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the knowledge and skills to (design) develop the science lab experiments and activities | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Students will discuss the results of experiment and report them.  2) Students will have knowledge and skills about using laboratory.  3) Students will have knowledge of laboratory safety and to use it when it is necessary | | | | | | | |
| **TEXTBOOK** | | | | | Aral E. (2010) , Genel FizikI-II Laboratuvar Kitabı | | | | | | | |
| **OTHER REFERENCES** | | | | | Test sheets prepared by the Instructors | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Aimed at course experiment tools | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Use of basic laboratory techniques. |
| 2 | Laboratory safety measures |
| 3 | Newton’s I. laws of motion, |
| 4 | Newton’s II. laws of motion |
| 5 | Newton’s II. laws of motion |
| 6 | Elastic collision, |
| 7-8 | MID-TERM EXAM |
| 9 | Inelastic collision |
| 10 | Explosive event in one dimension |
| 11 | Energy Conversion |
| 12 | Energy Conversion and kinetic energy |
| 13 | Moment of inertia |
| 14 | Spiral spring. |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | **x** |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| 9 | Ability to explain natural events based on scientific basis. | **x** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **x** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. M. Zafer BALBAĞ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | Fall |

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| **COURSE CODE** | 171111110 | **COURSE NAME** | **General Chemistry I** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 4 | | 0 | 0 | | | 4 | 5 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | |  | | | | x | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Areas, importance of chemistry, effect living and , brief regard to the story of its development matter and its properties, scientific method, significant figures, properties and classification of matter, atom and its electron structure: nuclear atom, atomic theories, electron structure. Chemical compound: introduction to periodic table, types of chemical compounds and their formulas. Chemical reactions: Chemical equations, acid- base reactions,oxidation- reduction reactions. Gases: The ideal gases, nonideal gase. Thermochemistry: entalpy, internal energy, entropy. Periodic table: Classification of elements, periodic properties of the elements. Chemical compound: formation of compound, (hybridization, formation of hybrid orbitals and moleculer geometri), formulas, species and properties. Chemical bounds: Basic concept, bound theories and bound kinds | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to strengthen insights into the fundamental concepts of chemistry related to topics of course and to improve the knowledge of students to be able to make comments, | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Occupational contribution is learning about the basic concepts of general chemistry.  Establishing the relationship between daily life issues and to developing basic skills and knowledge to use later in their lives. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Students will have the basic knowledge on the concepts such as properties and states of matter, structure of atom, chemical bonds and molecular structure 2. Students will be able to the write the formulas of ionic compound and Lewis’s formula of compound 3. Students will be able to determine molecular geometries by using compound formulas 4. Students will be able to make chemical calculations 5. Students will be able to balance chemical equations 6. Students will be able to solve gas problems 7. will learn about the types of chemical compounds and chemical bonds | | | | | | | |
| **TEXTBOOK** | | | | | **Petrucci,R., Harwood, W., (1994),** Genel Kimya I, ANKARA | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. **Chang, R.,(2000),** Kimya, İSTANBUL 2. Prof.Dr. Ender Erdik, Prof.Dr. Yüksel Sarıkaya,(2002), Temel Üniversite Kimyası, ANKARA | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Whitboard, computer | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The main object of the course is to strengthen insights into the fundamental concepts of chemistry related to topics of course and to improve the knowledge of students to be able to make comments, areas, importance of chemistry, effect living and , brief overview of the historical development of chemistry |
| 2 | Matter and its properties, scientific method, significant figures, properties and classification of matter, |
| 3 | Atom and its electron structure: |
| 4 | Nuclear atom, atomic theories, electron structure |
| 5 | Chemical compounds: Introduction to the periodic table, compounds and formulas |
| 6 | Chemical reactions: Chemical equations, |
| 7-8 | MID-TERM EXAM |
| 9 | Acid- base reactions,oxidation- reduction reactions. |
| 10 | Gases: The ideal gases, nonideal gases . |
| 11 | Thermochemistry: entalpy, internal energy, entropy. |
| 12 | Periodic table: Classification of elements, periodic properties of the elements. |
| 13 | Chemical compound: formation of compound, ( hybridization, formation of hybrid orbitals and moleculer geometri), formulas, species and properties. |
| 14 | Chemical bounds: Basic concept, bound theories and bound kinds |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues |  |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  |  |
| 9 | Ability to explain natural events based on scientific basis. |  | **x** |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **x** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Burcu ANILAN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171111111 | **COURSE NAME** | **General Chemistry Laboratory I** |  |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| I | 0 | | 2 | 0 | | | 1 | 2 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| x | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Studying techniques of chemical Laboratory, safety rules, accidents and precautions, safety marks and their meanings on chemical materials, equipment and materials which must be in chemical laboratory and their using, the rules while working with chemical materials in chemical laboratory and their importance, the rules while working with mercury, poisoned by mercury and it’s symptom, experiment which are parallel to the courses and suitable to topics of course students level | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to provide to be managed experiment in laboratory and to give information aboult experiment technics, to improve the skill of student making experiment related to course contents. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | The primary objective of the course is to establish the relationship between daily life in the laboratory and to develop basic knowledge and skills students will use later in their lives. The results obtained experimentally will be linked with theoretical knowledge and thus will form a laboratory  habit. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. gain the supplement knowledge to basic chemistry 2. synthesis the knowledge on science with the content of this course 3. analyze and estimate the data in the related scientific problem 4. learn and distinguish the content and type of knowledge on science 5. gain ability on research and learn scientific method 6. gain the ability to attain balance between oral, written and applied scientific activities 7. get professional qualification on this course and gain ability to follow the knowledge in contemporary issues 8. apply the content of this course on current subject 9. design and conduct experiments as well as to analyze and interpret data 10. use techniques, skills, and modern tools necessary for practice in chemistry 11. get information about definition, formulation and solution of problems 12. gain ability on teamwork   13.Students will be able to associate the result of experimental with theoretical knowledge  14.Students will know the apparatus used in chemistry laboratories. | | | | | | | |
| **TEXTBOOK** | | | | | Şirin Gülten (2006), Genel Kimya Laboratuar Kitabı, İstanbul | | | | | | | |
| **OTHER REFERENCES** | | | | | **Güler,H., Saraydın,D.,Ulusoy, U.,**Genel Kimya Laboratuvarı  **Anadolu Üniversitesi** Açıköğretim Fakültesi İlköğretim Öğretmenliği Lisans Tamamlama Programı, Laborauvar Uygulamaları ve Fen Öğretiminde Güvenlik, Cilt 3 | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Laboratory tools and equipment, computer, projector | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Studying techniques of chemical Laboratory, |
| 2 | safety rules, accidents and precautions, safety marks and their meanings on chemical materials, |
| 3 | equipment and materials which must be in chemical laboratory and their using, the rules while working with chemical materials in chemical laboratory and their importance, the rules while working with mercury, poisoned by mercury |
| 4 | experiment which are parallel to the courses and suitable to topics of course students level  Experimental application I |
| 5 | Experimental application II |
| 6 | Experimental application III |
| 7-8 | MID-TERM EXAM |
| 9 | Experimental application IV |
| 10 | Experimental application V |
| 11 | Experimental application VI |
| 12 | Experimental application VII |
| 13 | Experimental application VIII |
| 14 | Experimental application IX |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  | **x** |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  |  | **x** |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  |  | **x** |
| 5 | Ability to follow and interpret the contemporary issues |  |  | **x** |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| 9 | Ability to explain natural events based on scientific basis. |  | **x** |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **x** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **x** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr Asiye BERBER

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 171111112 | **COURSE NAME** | GENERAL MATHEMATICS I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| I | 4 | | 0 | 0 | | | 4 | 5 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| %60 | | - | | | | %40 | | | | | - |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | Written | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None. | | | | | | |
| **COURSE DESCRIPTION** | | | | | Numbers: concept of a set, systems of numbers and their properties, mathematical induction, intervals and salt value. Relations: ordered pairs, Cartesian product, definition of a relation, properties of them, inverse relation, equivalence relation, order relation. Function: definition of a function, properties, types of functions, inverse function, compound function, trigonometric functions, exponential functions, logarithmic functions, inverse trigonometric functions and special functions. Limit: limit of a real variable, determination of limit of functions, trigonometric limits. Continuity: definition of continuity, left and right continuity, properties of continuity of functions and types of continuity. Derivative: definition of derivative, geometric interpretation, principal derivative rules, high-order derivatives. | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aims to express: historical development of numbers and systems of numbers; mathematical induction and relation, function and properties of special functions; limit, continuity, reading and interpretation of graphs; applications and properties of derivative. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course includes mathematical concepts needed in the science education Bachelor’s degree teaching program. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Comprehend concepts of symbolic logic, set; and relationships between them; systems of numbers, real numbers, intervals and their properties.  2.Explain mathematical induction and give principal examples.  3.Describe ordered pairs, relation, special functions; and relationships among them. Express differences among them.  4.Learn types of functions and make applications.  5.Comprehend concept of limit and limit of a real variable. Calculate limit values of special functions.  6.Explain concept of continuity and its relation with limit value. Learn types of continuity and discontinuity and interprets them in a function graph.  7.Express definition of derivative, geometrical interpretations. Learn and apply principal derivative rules of functions. | | | | | | |
| **TEXTBOOK** | | | | | Dernek, A. (2011). Genel Matematik, Nobel Yayınevi, Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | Ayres, F. (1978). Teori ve Problemlerle Diferansiyel ve İntegral Hesap (Calculus). Çeviri Güzin Gökmen, Güven Kitapevi Yayınları, Ankara.Çoker, D., Özer, O., Taş, K. & Küçük, Y. (1996). Genel Matematik: Cilt I, Bilim Yayınları, Ankara.Edwards, H.C. & Penney, D.E. (2001). Matematik Analiz ve Analitik Geometri, Cilt:1, Çeviri Ed: Ömer Akın, Palme Yayıncılık, Ankara.Karadeniz, A.A. (1979). Yüksek Matematik I, Çağlayan Kitapevi, Ankara.Sezer, M. & Kurt, N. (2009). Genel Matematik I, Mengithan Matbaası, İzmir.Stein, S. & Barcellos, A. (1992). Calculus and Analytic Geometry, 5th Edition, McGraw-Hill Inc. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Concept of a set, systems of numbers and construction of them. Properties of real numbers. |
| 2 | Some inequalities, exact and salt value of a real number, mathematical induction. |
| 3 | Ordered pairs, Cartesian product and relations. Inverse relation and equivalence and order relations. |
| 4 | Concept of a function, special functions, inverse function and compound functions. |
| 5 | Exponential, logarithmic and trigonometric functions. |
| 6 | Inverse trigonometric functions. Limit of a real variable, geometric interpretation. Limit theorems. |
| 7-8 | MID-TERM EXAM |
| 9 | Limit of trigonometric functions and special functions and applications. |
| 10 | Undetermined cases in limit and applications. Continuity and discontinuity concepts and their types. |
| 11 | Continuity theorems.Concept of derivative,geometric interpretations and notations.Main derivative rules. |
| 12 | Chain rule. Derivative of trigonometric and implicit functions and applications. |
| 13 | Derivative of inverse function, inverse trigonometric, exponential and logarithmic functions. |
| 14 | High-order derivatives, Leibnitz formula. General applications and examples. |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **X** |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | **X** |  |
| 5 | Ability to follow and interpret the contemporary issues |  |  | **X** |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | **X** |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. |  |  | **X** |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **X** |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **X** |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **X** |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Emre EV ÇİMEN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 171111104 | **COURSE NAME** | Turkish I: Written Expression |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| I | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| %70 | | - | | | | %20 | | | | | %10 |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 35 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 15 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | Written | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | No | | | | | | |
| **COURSE DESCRIPTION** | | | | | Definition and importance of language; language- culture relations; Basic characteristics of writing language and written communication, main differences between written and oral language. Expression: written and oral expression; subjective expression, objective expression; writing language and its characteristics; external structure and rules in written expression, dictation rules and punctuation marks; point of view, supporting ideas, writing paragraph; types of paragraphs, composition concept, rules and plans in writing a composition, composition roof in elected writing, theme, examining the paragraph, correction studies in composition, general expression defeats, thinking and expression of thinking; different writing types (memory, anecdote, story criticism, novel etc.), formal writings (auto biography, petition, report, announcement, bibliography, official writings, scientific writings, article et .) | | | | | | |
| **COURSE OBJECTIVES** | | | | | Understand the conscious of mother tongue and making a habit of using Turkish correctly by paying attention to the incorrect usage of Turkish. Comprehending interior and exterior structure of the text by giving an integrated point of view. Reminding the information about the types of composition (forms, didactic texts, and literature types) and applying the examples. Removing the deficiencies in that area. To become alive to the note taking and fast reading techniques as a precondition of appropriate use of language. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Being able to use Turkish language correctly and effectively 2. Having scientific and objective thinking skills 3. Having writing skills fitted with rules 4. Being able to use paragraphs correctly in writing 5. Being able to arrange written notice, bibliography and report 6. Understanding and expressing thoughts correctly 7. Being able to understand and summarize a book 8. Having note taking skills 9. Being able to write a story, poem etc 10. Gain morality of critical thinking and writing. 11. Learn writing types necessary for their daily activities | | | | | | |
| **TEXTBOOK** | | | | | Beyreli, L., Çetindağ, Z. ve Celepoğlu, A. (2011). Yazılı ve sözlü anlatım. (5. Baskı) Ankara: Pegem Akademi. | | | | | | |
| **OTHER REFERENCES** | | | | | Ağca, H. (1999). *Yazılı anlatım.* Ankara:Gündüz Eğitim ve Yayıncılık.  Ağca, H. (2001). *Sözlü ve yazılı anlatımda Türkçenin kullanımı.* Ankara: Atatürk Kültür Merkezi Başkanlığı Yayınları.  Akbayır, S. (2010). *Yazılı anlatım: Nasıl yazabilirim?* Ankara: Pegem Akademi.  Dara, R. (2000). Y*azılı anlatıma giriş***.** Bursa:Asa Kitabevi.  Fray, N. ve Fisher, D. (2006). *Language arts workshop.* Ohaio: Merrill Prentice Hall.  Haris, K. R. ve Graham, S. (1996). *Making the writing process work: Strategies for composition and self regulation.* Cambridge: Brookline Boks.  Kavcar, C., Oğuzkan, F. ve Aksoy, Ö. (2005). *Yazılı ve sözlü anlatım.*Ankara: Anı Yayıncılık.  Oral, G. (2002). *Yine yazı yazıyoruz.* Ankara: Pegem Akademi.  Temur, T. ve Çakıroğlu, A. (2010). *Etkinliklerle yazılı ve sözlü anlatım.* Ankara: Pegem Akademi. Tompkins, G. E. (2008). Teaching writing. Balancing process and product.(5th ed.). New Jersey Columbus, Ohio: Pearson Merrill Prentice Hall. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and importance of language; language- culture relations; |
| 2 | Basic characteristics of writing language and written communication, main differences between written and oral language. |
| 3 | External structure and rules in written expression, dictation rules and punctuation marks; classroom practice. |
| 4 | Plan in writing theme, point of view, supporting ideas, writing paragraph; types of paragraphs; classroom practice. |
| 5 | Plan in writing theme, point of view, supporting ideas, writing paragraph; types of paragraphs; classroom practice. |
| 6 | Expression: written and oral expression; subjective expression, objective expression; composition concept, rules and plans in writing a composition, composition roof in elected writing, theme, classroom practice. |
| 7-8 | MID-TERM EXAM |
| 9 | Expression, forms of expression, classroom practice. |
| 10 | Paragraph review, classroom practice. |
| 11 | Thinking and expression of thinking; different writing types (memory, anecdote, story criticism, novel etc.), classroom practice. |
| 12 | Different writing types (memory, anecdote, story criticism, novel etc.), classroom practice. |
| 13 | Formal writings (auto biography, petition, report, announcement, bibliography, official writings, scientific writings, article et .), classroom practice. |
| 14 | Formal writings (auto biography, petition, report, announcement, bibliography, official writings, scientific writings, article et .), classroom practice. |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences |  |  | X |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | X |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  |  | X |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  |  | X |
| 5 | Ability to follow and interpret the contemporary issues |  | X |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibility |  | X |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | X |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | X |
| 9 | Ability to explain natural events based on scientific basis. |  |  | X |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | X |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | X |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | X |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | X |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | X |
| 15 | Ability to identify and solve the problems in accordance with stages. |  |  | X |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Hüseyin ANILAN

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

** ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171112113 | **COURSE NAME** | Atatürk’s Pr. & The History of Rev. II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | | **LANGUAGE** | |
| II | 2 | | 0 | 0 | | | 2 | 2 | | COMPULSORY ( X ) ELECTIVE () | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | | **General Culture Knowledge** | | | | **Elective Course** | | | | |
|  | |  | | | X | | | | General Knowledge ( ) Content Knowledge ( ) | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Basic concepts about Atatürk Principles and Revolution, Atatürk Principles and Revolutions. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | To help the students to appreciate the hard conditions under which the war of independence, under the leadership of Mustafa Kemal, was fought and how an independent Turkish state was created. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | To underline the idea that the national unity based on the principle “peace in the country peace in the world” can only be achieved through political, economic and military progress. | | | | | | | |
| **COURSE OUTCOMES** | | | | | | At the end of this course; Students  1.Explains Principles of Atatürk and main concepts related to Revolution history.  1.1.Explians the concepts of Reform/Revolution.  1.2.Describes the concept of National Forces.  1.3.Explains the concepts of Republic/Democracy.  1.4.Recognizes the concept of Ideology.  2.Explains the main points of the period related to Turkish War of Independence and foundation of the Turkish State.  2.1.Explains the developments at Ottoman Empire before Turkish Revolution.  2.2.Describes the World War I and its results.  2.3.Explains Turkish War of Independence.  2.4.Recognizes Turkish Revolution.  2.5.Remembers the mian principles of Turkish foreign politics.  2.6.Explains Principles of Atatürk and their importance.  3.Explains the effects of the developments at Europe and World on Turkish Republic.  3.1.Explains the effects of European and World politics on Turkey and the results of them.  3.2.Describes the effects of Capitalism/Emperialism on Turkey.  3.3.Explains the relations / problems between Turkey and its neighbours.  3.4.Explains the importance of Turkey at Europe and World | | | | | | | |
| **TEXTBOOK** | | | | | | Turan, Şerafettin (1995). Türk Devrim Tarihi, 3. ve 4. Kitap | | | | | | | |
| **OTHER REFERENCES** | | | | | | Timur, Taner. (1997). Türk Devrimi ve Sonrası. Ankara: İmge Kitabevi. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic qualities of Revolutions & Turkish Revolution |
| 2 | Currents of Affecting the Turkish Revolution |
| 3 | Democratic State of Law |
| 4 | Establishment of the Turkish Law System |
| 5 | Establishment of the Turkish Education System |
| 6 | Restructuring of the Turkish Economy |
| 7-8 | MID-TERM EXAM |
| 9 | Nature of the General Principle of Principles and Republicanism |
| 10 | Nationalism Policy |
| 11 | Principles of Populism and Statism |
| 12 | Laicism Policy |
| 13 | Policy Revolution |
| 14 | Criticisms and Responses Against Atatürk |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences |  |  | **X** |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  |  | **X** |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  |  | **X** |
| 5 | Ability to follow and interpret the contemporary issues |  |  | **X** |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | **X** |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. |  |  | **X** |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **X** |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **X** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **X** |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **X** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. |  | **X** |  |
| **1**: None. **2**: Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Volkan MARTTİN

**Signature Date:**



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171412155 | **COURSE NAME** | Educatıon Psychology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | | **LANGUAGE** | |
| II | 3 | | 0 | 0 | | | 3 | 6 | | COMPULSORY ( X) ELECTIVE () | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | | **General Culture Knowledge** | | | | **Elective Course** | | | | |
|  | |  | | | X | | | | General Knowledge( ) Content Knowledge ( ) | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 40 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Definition and functions of educational psychology, learning and development-related basic concepts, physical, cognitive, emotional, social and moral development, factors affecting learning, learning theories, learning theories reflections on the teaching process, factors affecting learning. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The main objective of this course is to learn the nature, factors affecting learning, learning theory and the psychology of learning to teach is also occurring during childhood physical, mental, emotional, and social development, to investigate. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | | know education as a science, understand the relation between education and other sciences. know the relation between education and other social institutions, understand new perspectives and approaches in education | | | | | | | |
| **TEXTBOOK** | | | | | | Senemoğlu, N. (2011). Gelişin öğrenme ve öğretim Kuramdan Uygulama. Ankara: Pgem Akademi Yayıncılık. | | | | | | | |
| **OTHER REFERENCES** | | | | | | Yeşilyaprak, B. (2011). Eğitim Psikolojisi gelişim, öğrenme, öğretim.Ankara: Pegem Akademi Yayıncılık.  Yavuzer, H. (2012). Çocuk Psikolojisi. Ankara: Remzi Kitabevi | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The importance of training teachers and students in psychology, the nature of development, |
| 2 | Development of physical and Devinsel |
| 3 | Cognitive development |
| 4 | Language development |
| 5 | Personality development |
| 6 | Moral Development |
| 7-8 | MID-TERM EXAM |
| 9 | The role of educational institutions and teachers to facilitate the development of children and adolescent |
| 10 | The nature of learning |
| 11 | Behavioral Theories of Learning |
| 12 | Social Learning Theory |
| 13 | Behavioral Theories of Learning |
| 14 | Humanistic Learning Theory |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences |  |  | **X** |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **X** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | **X** |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. | **X** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. | **X** |  |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **X** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. |  | **X** |  |
| **1**: None. **2**: Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Ayşe AYPAY

**Signature**  **Date:**

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171112105 | **COURSE NAME** | Turkish II: Oral Expression |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| %50 | |  | | | | %40 | | | | | %10 |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 35 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 15 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | Oral | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | No | | | | | | |
| **COURSE DESCRIPTION** | | | | | The basic features of verbal language and communication. Verbal expression; The basic features of speaking ability (using the body and natural language) ; the basic principles of an effective speaking; The basic features of an effective speaker (stress, intonation, discontinuance; diction etc.). Prepared and unprepared speaking; phases of prepared speaking (selection and limitation of the subject; aim, view, determining the main and supporting ideas, planning, writing the text; presentation of speaking). types of speaking: (mutual speaking, conversation, introducing oneself, answering the questions, christmas, birth day, feast etc. celebrate an important event, telling the way, speaking on a phone, asking for a job, interviewing with someone, radio and television speeches, joining to various culture, art program mesas a speaker etc. ). Speaking on different subjects’ unpreparely, studies on sample speaking and verbal expression practices, correcting language and expression mistakes in speeches. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Gaining basic knowledge and skills about voice education; paying attention to the results of the deficiencies in this subject. Showing the ways for effective speech with the basis of some techniques to the preparation before speech, introduction to speech and helping speech. With this regards, attract attention to the harmony between content of speech and body language. Raising the ability of meaning, reading-listening to the upper level. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Understand the sound structure of Turkish and gain pronunciation and diction suitable to this. 2. Understand basic features of the ability of listening and speaking. 3. Learn types of verbal expression and perform these 4. Acquire the ability of speaking before crowd. 5. Gain the skill of harmonious use of body language along with speaking 6. Grasp the importance of voice usage for the effective speaking 7. Gain the ability of affective speaking unprepared about different topics | | | | | | |
| **TEXTBOOK** | | | | | Beyreli, L., Çetindağ, Z. ve Celepoğlu, A. (2011). Yazılı ve sözlü anlatım. (5. Baskı) Ankara: Pegem Akademi. | | | | | | |
| **OTHER REFERENCES** | | | | | Ağca, H. (2001). *Sözlü ve yazılı anlatımda Türkçenin kullanımı.* Ankara: Atatürk Kültür Merkezi Başkanlığı Yayınları.  Akbayır, S. (2011). *Sözlü anlatım: Nasıl konuşabilirim?* Ankara: Pegem Akademi.  Fray, N. ve Fisher, D. (2006). *Language arts workshop.* Ohaio: Merrill Prentice Hall.  Kavcar, C., Oğuzkan, F. ve Aksoy, Ö. (2005). *Yazılı ve sözlü anlatım.*Ankara: Anı Yayıncılık. Temur, T. ve Çakıroğlu, A. (2010). Etkinliklerle yazılı ve sözlü anlatım. Ankara: Pegem Akademi. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The basic features of verbal language and communication. Verbal expression; The basic features of speaking ability (using the body and natural language), classroom practice. |
| 2 | The basic principles of an effective speaking; The basic features of an effective speaker (stress, intonation, discontinuance; diction etc.), classroom practice. |
| 3 | Prepared and unprepared speaking; phases of prepared speaking (selection and limitation of the subject; aim, view, determining the main and supporting ideas, planning, writing the text; presentation of speaking), classroom practice. |
| 4 | Types of speaking: (mutual speaking, conversation, introducing oneself, answering the questions, christmas, birth day, feast etc. celebrate an important event, telling the way, speaking on a phone, asking for a job, interviewing with someone, radio and television speeches, joining to various culture, art program mesas a speaker etc. ), classroom practice. |
| 5 | Types of speaking: (mutual speaking, conversation, introducing oneself, answering the questions, christmas, birth day, feast etc. celebrate an important event, telling the way, speaking on a phone, asking for a job, interviewing with someone, radio and television speeches, joining to various culture, art program mesas a speaker etc. ), classroom practice. |
| 6 | Types of speaking: (mutual speaking, conversation, introducing oneself, answering the questions, christmas, birth day, feast etc. celebrate an important event, telling the way, speaking on a phone, asking for a job, interviewing with someone, radio and television speeches, joining to various culture, art program mesas a speaker etc. ), classroom practice. |
| 7-8 | MID-TERM EXAM |
| 9 | Types of speaking: (mutual speaking, conversation, introducing oneself, answering the questions, christmas, birth day, feast etc. celebrate an important event, telling the way, speaking on a phone, asking for a job, interviewing with someone, radio and television speeches, joining to various culture, art program mesas a speaker etc. ), classroom practice. |
| 10 | Speaking on different subjects’ unpreparely, studies on sample speaking and verbal expression practices, correcting language and expression mistakes in speeches, classroom practice. |
| 11 | Speaking on different subjects’ unpreparely, studies on sample speaking and verbal expression practices, correcting language and expression mistakes in speeches, classroom practice. |
| 12 | Studies on sample speaking and verbal expression practices, correcting language and expression mistakes in speeches, classroom practice. |
| 13 | Studies on sample speaking and verbal expression practices, correcting language and expression mistakes in speeches, classroom practice. |
| 14 | Studies on sample speaking and verbal expression practices, correcting language and expression mistakes in speeches, classroom practice. |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences |  |  | **X** |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  |  | **X** |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  |  | **X** |
| 5 | Ability to follow and interpret the contemporary issues |  | **X** |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibility |  | **X** |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | **X** |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. |  |  | **X** |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **X** |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **X** |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **X** |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Hüseyin ANILAN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | Spring |

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| **COURSE CODE** | 171112108 | **COURSE NAME** | **Physics II** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| II | 4 | | 0 | 0 | | | 4 | 5 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary Mathematics Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| x | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 64 + 66 | | 40 |
| Quiz | | | | | - | | - |
| Homework | | | | | 64 + 66 | | 5 |
| Project | | | | | - | | - |
| Report | | | | | - | | - |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 64 + 66 | | 55 |
| **PREREQUIEITE(S)** | | | | | --------- | | | | | | | |
| **BRIEF CONTENT OF COURSE** | | | | | Electric Force and Field: Charge and conservation, electrification, Insulators and conductors, Coulomb’s law, electric fields of discrete and continuous loads, Gauss’ law. Static Charge Potential Energy: Potential in discrete and continuous loads, potential difference, dielectrics, binding and energy in capacitor. Direct current: Current, power supply, emk, resistors, energy and force, direct current circuit, structure of measurement tools, electricity usage and security. Magnetic Force and Field: Conductors with currents and magnetic field interaction between moving charges, Biot-Savart law, Fields produced by different forms of conductive currents, The Hall effect, magnetic properties of matter. Electromagnetic Induction: Faraday’s law of induction, Lenz law, core induction, magnetic field energy. Alternating current circuits: electric motors, transformers. AC Circuits: resistance in RL, RC and RLC circuits, current, phase difference, resonance, radio transmitter and receiver. Electromagnetic Waves: Electric and magnetic field emission, e.m.waves dipol antennae in, spectrum, energy and momentum of e.m. waves. | | | | | | | |
| **COURSE AIMS** | | | | | Giving the basic concepts and principles in mechanic/ electric subjects of physic to students in clear and logical manner provides an understanding of basic principles and concepts of physics in a wider perspective. | | | | | | | |
| **CONTRIBUTION OF THE COURSE TO PROVIDE OCCUPATIONAL EDUCATION** | | | | | Comprehend the knowledge of Science related to physic field, gaining problem solving skills and relate this information to everyday life. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Ability to understand knowledge on basic sciences, 2. Ability to analyze and evaluate basic physic science knowledge , 3. Ability to relate scientific knowledge related to physic science with everyday life, 4. Ability to relate Physic with the other science fields, 5. Ability to know , formulate and solve the problems of physic, | | | | | | | |
| BASIC COURSE BOOK | | | | | PHYSIC 2, SERWAY, Translation: Prof.Dr. Kemal Çolakoğlu, Palme Publishing | | | | | | | |
| HELPFUL RESOURCES | | | | | Basic Physic, Volume II; P. Fishbane, S. Gasiorovicz, S. T. Thornton, Translation: Prof.Dr. Cengiz YALÇIN, Arkadaş Publishing,Physic Principles 2; Frederick J. Bueche ve David A. Jerde, Translation: Prof.Dr. Kemal Çolakoğlu, Palme Publishing, 3. General Physic I-II, Kamil Temizyürek, Atlas Publication Distribution,  4. General Physic-II, Newtonian Theory of Force and Motion, Editors: M. F. Taşar, M. Orbay, Pegem Academy,  5. GENERAL PHYSIC and Scientific Principals of Technology, Editors: M. Orbay, Feda Öner, PegemA Publishing, | | | | | | | |
| **TOOLS AND MATERIALS NEEDED IN THE COURSE** | | | | | Writing Board, Computer, Projector. | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Electric Force and Field: Charge and conservation, electrification, Insulators and conductors, Coulomb’s law, electric fields of discrete and continuous loads. |
| 2 | Gauss’ law. |
| 3 | Static Charge Potential Energy: Potential in discrete and continuous loads, potential difference, dielectrics, binding and energy in capacitor. |
| 4 | Direct current: Current, power supply, emk, resistors, energy and force, direct current circuit, structure of measurement tools, electricity usage and security. |
| 5 | Magnetic Force and Field: Conductors with currents and magnetic field interaction between moving charges. |
| 6 | Biot-Savart law, Fields produced by different forms of conductive currents. |
| 7-8 | MID-TERM EXAM |
| 9 | The Hall effect, magnetic properties of matter. |
| 10 | Electromagnetic Induction: Faraday’s law of induction. |
| 11 | Lenz law, core induction, magnetic field energy. |
| 12 | Alternating current circuits: electric motors, transformers. |
| 13 | AC Circuits: resistance in RL, RC and RLC circuits, current, phase difference, resonance, radio transmitter and receiver. |
| 14 | Electromagnetic Waves: Electric and magnetic field emission, e.m.waves dipol antennae in, spectrum, energy and momentum of e.m. waves. |
| 15-16 | FINAL EXAM |

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| **NO** | **MATHEMATIC EDUCATION PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to comprehend and apply knowledge related to Basic Science |  | **x** |  |
| 2 | Ability to plan and prepare Teaching Activities in Science, to use general teaching principles, methods and techniques |  |  | **x** |
| 3 | Ability to transfer knowledge learned in Science to life and to narrate to third person with this transfer |  |  | **x** |
| 4 | Ability to understand the importance and place of science, to apply this when it is necessary and connect to interdisciplinary fields. |  |  | **x** |
| 5 | Ability to follow and interpret contemporary issues |  | **x** |  |
| 6 | Ability to work in collaboration, gain professional and ethical responsibility |  |  | **x** |
| 7 | Ability to develop science literacy for the purposes of basic objects of Science Teaching |  | **x** |  |
| 8 | Ability to analysis the new Science program (gain, teaching-learning process, evaluation etc.) |  | **x** |  |
| 9 | Ability to explain natural phenomena on the basis of the scientific basis |  | **x** |  |
| 10 | Ability to gain scientific process skills and to facilitate their lives by using these in different stages of the later life |  |  | **x** |
| 11 | Ability to use methods and techniques suitable for characteristics of students’ personal development | **x** |  |  |
| 12 | Ability to prepare a plan by utilizing Science program, to present a lesson by organizing equipment and materials |  |  | **x** |
| 13 | Ability to select, design and apply science experiments suitable for the subject, to analyze data and to make scientific report by interpreting them |  | **x** |  |
| 14 | Ability to have a knowledge of laboratory safety and to use it when it is necessary |  | **x** |  |
| 15 | Ability to identify the problems and solve them in accordance with stages | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Özden TEZEL

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171112109 | **COURSE NAME** | General Physics Laboratory II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 0 | | 2 | 0 | | | 1 | 2 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | | 1 | 30 |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | Practice | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Electrolysis, Frequency Assignment, Ohm's Law, Resistances in series and parallel connection, Wheatstone Bridge, Magnetic field created by a current-carrying wire, Transformers, The electric motor and ring, To obtain alternating current and electromagnetic induction, General evaluation of the course. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1.To give the prospective teachers the ability to lecture using the method of laboratory, design and implement experiments to make them recognize the tools and materials.  2.To develop the power of thinking practical while making experiments | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the knowledge and skills to (design) develop the science lab experiments and activities | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Students will discuss the results of experiment and report them.  2) Students will have knowledge and skills about using laboratory.  3) Students will have knowledge of laboratory safety and to use it when it is necessary | | | | | | |
| **TEXTBOOK** | | | | | Aral E. (2010) , Genel FizikI-II Laboratuvar Kitabı | | | | | | |
| **OTHER REFERENCES** | | | | | Test sheets prepared by the Instructors | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Aimed at course experiment tools | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Use of basic laboratory techniques. |
| 2 | Laboratory safety measures |
| 3 | Electrolysis |
| 4 | Frequency Assignment |
| 5 | Ohm's Law |
| 6 | Resistances in series and parallel connection |
| 7-8 | MID-TERM EXAM |
| 9 | Wheatstone Bridge |
| 10 | Resistances in series and parallel connection |
| 11 | Transformers |
| 12 | The electric motor and ring |
| 13 | To obtain alternating current and electromagnetic induction |
| 14 | General evaluation of the course. |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | **x** |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| 9 | Ability to explain natural events based on scientific basis. | **x** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **x** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. M. Zafer BALBAĞ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171112110 | **COURSE NAME** | **General Chemistry II** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 4 | | 0 | 0 | | | 4 | 5 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | The main object of the course is to strengthen insights into the fundamental concepts of chemistry related to topics of course and to improve the knowledge of students to be able to make comments, areas, importance of chemistry, effect living and , brief regard to the story of its development matter and its properties, scientific method, significant figures, properties and classification of matter, atom and its electron structure: nuclear atom, atomic theories, electron structure. Chemical compound: introduction to periodic table, types of chemical compounds and their formulas. Chemical reactions: Chemical equations, acid- base reactions,oxidation- reduction reactions. Gases: The ideal gases, nonideal gases. Thermochemistry: entalpy, internal energy, entropy. Periodic table: Classification of elements, periodic properties of the elements. Chemical compound: formation of compound, (hybridization, formation of hybrid orbitals and moleculer geometri), formulas, species and properties. Chemical bounds: Basic concept, bound theories and bound kinds | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to strengthen insights into the fundamental concepts of chemistry related to topics of course and to improve the knowledge of students to be able to make comments, | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Occupational contribution is learning about the basic concepts of general chemistry.  Establishing the relationship between daily life issues and to developing basic skills and knowledge to use later in their lives. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. such as properties and states of matter, structure of atom, chemical bonds and molecular structure 2. Students will be able to the write the formulas of ionic compound and Lewis’s formula of compound 3. Students will be able to determine molecular geometries by using compound formulas 4. Students will be able to make chemical calculations 5. Students will be able to balance chemical equations   6 Students will be able to solve gas problems  7. will learn about the types of chemical compounds and chemical bonds | | | | | | |
| **TEXTBOOK** | | | | | Petrucci,R., Harwood, W., (1994), Genel Kimya I, ANKARA | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Chang, R.,(2000), Kimya, İSTANBUL 2. Prof.Dr. Ender Erdik, Prof.Dr. Yüksel Sarıkaya,(2002), Temel Üniversite Kimyası, ANKARA | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Whitboard, computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The main object of the course is to strengthen insights into the fundamental concepts of chemistry related to topics of course and to improve the knowledge of students to be able to make comments, areas, importance of chemistry, effect living and , brief overview of the historical development of chemistry |
| 2 | Matter and its properties, scientific method, significant figures, properties and classification of matter, |
| 3 | Atom and its electron structure: |
| 4 | Nuclear atom, atomic theories, electron structure |
| 5 | Chemical compounds: Introduction to the periodic table, compounds and formulas |
| 6 | Chemical reactions: Chemical equations, |
| 7-8 | MID-TERM EXAM |
| 9 | Acid- base reactions,oxidation- reduction reactions. |
| 10 | Gases: The ideal gases, nonideal gases . |
| 11 | Thermochemistry: entalpy, internal energy, entropy. |
| 12 | Periodic table: Classification of elements, periodic properties of the elements. |
| 13 | Chemical compound: formation of compound, ( hybridization, formation of hybrid orbitals and moleculer geometri), formulas, species and properties. |
| 14 | Chemical bounds: Basic concept, bound theories and bound kinds |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to comprehend and apply knowledge related to Basic Science | **x** |  |  |
| 2 | Ability to plan and prepare Teaching Activities in Science, to use general teaching principles, methods and techniques |  |  |  |
| 3 | Ability to transfer knowledge learned in Science to life and to narrate to third person with this transfer |  | **x** |  |
| 4 | Ability to understand the importance and place of science, to apply this when it is necessary and connect to interdisciplinary fields. | **x** |  |  |
| 5 | Ability to follow and interpret contemporary issues |  |  |  |
| 6 | Ability to work in collaboration, gain professional and ethical responsibility |  |  |  |
| 7 | Ability to develop science literacy for the purposes of basic objects of Science Teaching | **x** |  |  |
| 8 | Ability to analysis the new Science program (gain, teaching-learning process, evaluation etc.) |  |  |  |
| 9 | Ability to explain natural phenomena on the basis of the scientific basis |  | **x** |  |
| 10 | Ability to gain scientific process skills and to facilitate their lives by using these in different stages of the later life |  | **x** |  |
| 11 | Ability to use methods and techniques suitable for characteristics of students’ personal development |  |  |  |
| 12 | Ability to prepare a plan by utilizing Science program, to present a lesson by organizing equipment and materials |  |  |  |
| 13 | Ability to select, design and apply science experiments suitable for the subject, to analyze data and to make scientific report by interpreting them |  | **x** |  |
| 14 | Ability to have a knowledge of laboratory safety and to use it when it is necessary |  |  |  |
| 15 | Ability to identify the problems and solve them in accordance with stages | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Burcu ANILAN

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

**ESOGU Maths and Science Education Department** (Science Education)



**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171112111 | **COURSE NAME** | **General Chemistry Lab. II** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 0 | | 2 | 0 | | | 1 | 2 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | | 1 | 10 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Experiment which are parallel to the courses of science and technology teaching curriculum scheduled in 4.and 8 classes and suitable to student level. 4 | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course is Students are able to design and set up chemical reactions in the laboratory and teaching students how to set up a chemical reaction related to the subjects taught in the main lecture | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | The primary objective of the course is to establish the relationship between daily life in the laboratory and to develop basic knowledge and skills students will use later in their lives. The results obtained experimentally will be linked with theoretical knowledge and thus will form a laboratory  habit. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. gain the supplement knowledge to basic chemistry 2. synthesis the knowledge on science with the content of this course 3. analyze and estimate the data in the related scientific problem 4. learn and distinguish the content and type of knowledge on science 5. gain ability on research and learn scientific method 6. gain the ability to attain balance between oral, written and applied scientific activities 7. get professional qualification on this course and gain ability to follow the knowledge in contemporary issues 8. apply the content of this course on current subject 9. design and conduct experiments as well as to analyze and interpret data 10. use techniques, skills, and modern tools necessary for practice in chemistry 11. get information about definition, formulation and solution of problems 12. gain ability on teamwork | | | | | | |
| **TEXTBOOK** | | | | | Şirin Gülten (2006), Genel Kimya Laboratuar Kitabı, İstanbul | | | | | | |
| **OTHER REFERENCES** | | | | | Güler,H., Saraydın,D.,Ulusoy, U.,Genel Kimya Laboratuvarı  Anadolu Üniversitesi Açıköğretim Fakültesi İlköğretim Öğretmenliği Lisans Tamamlama Programı, Laborauvar Uygulamaları ve Fen Öğretiminde Güvenlik, Cilt 3 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Laboratory tools and equipment, computer, projector | | | | | | |

|  |  |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Experiment which are parallel to the courses of science and technology teaching curriculum scheduled in 4.and 8 classes and suitable to student level. 4  Experiment I |
| 2 | Experiment II |
| 3 | Experiment III |
| 4 | Experiment IV |
| 5 | Experiment V |
| 6 | Experiment VI |
| 7-8 | ARA SINAV |
| 9 | Experiment VII |
| 10 | Experiment VIII |
| 11 | Experiment IX |
| 12 | Experiment X |
| 13 | Experiment XI |
| 14 | Experiment XII |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  | **x** |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  |  | **x** |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  |  | **x** |
| 5 | Ability to follow and interpret the contemporary issues |  |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| 9 | Ability to explain natural events based on scientific basis. |  | **x** |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **x** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **x** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Asiye BERBER

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171112112 | **COURSE NAME** | GENERAL MATHEMATICS II |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| II | 4 | | 0 | 0 | | | 4 | 5 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| %60 | | - | | | | %40 | | | | | - |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | Written | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None. | | | | | | |
| **COURSE DESCRIPTION** | | | | | Concept of differential. Geometric applications of derivative: maximum-minimum problems, exponential indeterminate forms, curve sketching, differential equations. Indefinite integral: definition of indefinite integral, separation of variables, integration by parts, integration of rational functions, integration of trigonometric functions, integration of irrational functions. Definite integral: properties of definite integral, computation of area, volume and arc-length. Improper integrals. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of this course is to make comprehend applications of derivative and to express its usage areas in the real world; to explain mathematical aspects of Newton’s cooling principle; to introduce basic differential equations and concepts of infinitesimal small and integral and show the relationships of differential calculus applications with physics and related areas. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | This course contributes to science teacher education via introducing mathematical aspects of physical world (Gauss principle, theory of electromagnetism etc) with technological applications, which will be held along the Bachelor’s degree. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1.Using derivative’s geometrical interpretation, comprehend maximum-minimum problems, explain and make applications.  2.By the help of derivative solve exponential indeterminate forms, make conversion table and sketch function graphs.  3.Comprehend that infinite integral is anti-operator of differential and give examples.  4.Learn basic integration rules of functions and apply them to separable differential equations.  5.Comprehend the finite integral by the aid of infinitesimal small concept and apply this to area, volume and arc-length computation applications.  6.Explain mathematical aspects of physical applications.  7.Explain differences when the integral has infinite bound or a discontinuity function and make applications. | | | | | | |
| **TEXTBOOK** | | | | | Dernek, A. (2011). Genel Matematik, Nobel Yayınevi, Ankara. | | | | | | |
| **OTHER REFERENCES** | | | | | Ayres, F. (1978). Teori ve Problemlerle Diferansiyel ve İntegral Hesap (Calculus). Çeviri Güzin Gökmen, Güven Kitapevi Yayınları, Ankara.Çoker, D., Özer, O., Taş, K. & Küçük, Y. (1996). Genel Matematik: Cilt I, Bilim Yayınları, Ankara.Edwards, H.C. & Penney, D.E. (2001). Matematik Analiz ve Analitik Geometri, Cilt:1, Çeviri Ed: Ömer Akın, Palme Yayıncılık, Ankara.Karadeniz, A.A. (1979). Yüksek Matematik I, Çağlayan Kitapevi, Ankara.Sezer, M. & Kurt, N. (2009). Genel Matematik I, Mengithan Matbaası, İzmir.Stein, S. & Barcellos, A. (1992). Calculus and Analytic Geometry, 5th Edition, McGraw-Hill Inc. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer and Projection. | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Concept of differential, approximate calculations and application to real world. |
| 2 | Maximum-minimum problems and applications to real world. |
| 3 | Exponential indeterminate forms, L’Hospital rule and Newton’s method. |
| 4 | Curve sketching and applications. |
| 5 | Mathematical modeling, construction of differential equations, Newton’s cooling principle. |
| 6 | Indefinite integral (anti-derivative) concept, basic integration rules and integration by parts. |
| 7-8 | MID-TERM EXAM |
| 9 | Integral of rational functions. |
| 10 | Integral of trigonometric functions. Integral of irrational functions. |
| 11 | Definite integral and its properties. Main theorems of differential calculus. Computation of area. |
| 12 | Computations of volumes and arc-lengths and applications. |
| 13 | Improper integrals. Physical applications (center of mass, work, kinetic energy). |
| 14 | Computer applications of integral (Mathematica and Maple). |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **X** |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | **X** |  |
| 5 | Ability to follow and interpret the contemporary issues |  |  | **X** |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | **X** |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. |  |  | **X** |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **X** |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **X** |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **X** |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Emre Ev ÇİMEN

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

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | **171113136** | **COURSE NAME** | **Computer I** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 2 | | 2 | 0 | | | 3 | 6 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Sciences** | | | | **……Department Pedagogical Content Knowledge**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
|  | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Features of computer technology, various programming languages, operating systems, create a table of calculation notes, listing. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To acquire basic computer skills. Information technology is getting to be on the terminology | | | | | | |
| **CONTRIBUTION OF THE COURSE TO PROVISION OF PROFESSIONAL EDUCATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be able to   1. Know basic concepts about the information technologies, 2. Comprehend the units and functions of basic hardware and software in a computer system 3. Have competency in basic degree about the purposes and use of operating systems, 4. Use a word processing software in level that fulfills their occupational requirements, 5. Use a spreadsheet software in level that fulfills their occupational requirements 6. Use a preparing presentation software in level that fulfills their occupational requirements, 7. Become conscious about using effective and secure internet, 8. Have knowledge about copyright and ethical principles relating information technologies | | | | | | |
| **TEXTBOOK** | | | | | Güneş A. (2007). Bilgisayar I-II (Temel Bilgisayar Becerileri). Ankara: Pegema Yayıncılık. | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | computer | | | | | | |

|  |  |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| **1** | Using calculator, electronic telecommunications and technology, advantage-disadvantage. |
| **2** | The history of computers technology, developments, structures, the number systems,  algorithms and logic circuits |
| **3** | Flowcharts, programming languages, operating systems, units and operating principles. |
| **4** | Hardware, operating systems setup, options, viruses, formatting HD, and partitions. |
| **5** | Disc operating system, commands, executable files, filenames and extensions, editors and features. |
| **6** | Electronic tabulating, setting the rows and columns, mathematical operators. |
| **7-8** | **MIDTERM EXAM** |
| **9** | Application of mathematical functions, examples. |
| **10** | Application of mathematical functions, examples. |
| **11** | Application of mathematical functions, examples. |
| **12** | Application of mathematical functions, examples. |
| **13** | Application of mathematical functions, examples. |
| **14** | Application of mathematical functions, examples. |
| **15-16** | **FINAL EXAM** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **X** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibility |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. | **X** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Esra EREN

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171113132 | **COURSE NAME** | General Biology Laboratory I. |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| III | 0 | | 0 | 2 | | | 1 | 2 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | |  | | | | x | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | |  | |  |
| Quiz | | | | | 1 | | 15 |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | | 1 | | 25 |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Examination of photosynthesis in plant. Examination of single cell living things and tissues. Cultivation of living things in laboratory. Examination of embriological development stages in living things (frog, chick), Observation of respiration in living things, Examination of blood cells, determination of blood groups. Determination of carbonhydrate, fat, protein in foods | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Of use of different materials, techniques, and basic laboratory examination under the microscope | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the knowledge and skills to (design) develop the biology lab experiments and activities | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. be able to observe of photosynthesis in plant 2. be able to investigate of single cell living things 3. be able to observe respiration in living things 4. be able to perceive determination of blood groups   be able to make determination of carbonhydrate, fat, protein in foods | | | | | | | |
| **TEXTBOOK** | | | | | Kılıç A**.,** 2000, Genel Biyoloji Laboratuvarı | | | | | | | |
| **OTHER REFERENCES** | | | | | Test sheets prepared by the Instructors | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Microscope | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Examination of photosynthesis in plant. |
| 2 | Examination of tissue samples of plant I |
| 3 | Examination of tissue samples of herbal II |
| 4 | Examination of vegetable organs I |
| 5 | Examination of vegetable organs II |
| 6 | Examination of animal tissues I |
| 7-8 | MID-TERM EXAM |
| 9 | Examination of animal tissues II |
| 10 | Observation of respiration in living things, |
| 11 | Examination of embriological development stages in living things (frog, chick), |
| 12 | Examination of embriological development stages in living things (frog, chick), |
| 13 | Examination of blood cells, determination of blood groups. |
| 14 | Determination of carbonhydrate, fat, protein in foods |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **x** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  | **x** |  |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | **x** |  |
| **5** | Ability to follow and interpret the contemporary issues |  | **x** |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  | **x** |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞÇEN

**Signature**:

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171113131 | **COURSE NAME** | **General Biology I** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | | | **COURSE OF** | | | | |
| **Theory** | | | **Practice** | | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| III | 4 | | 0 | | 0 | | | | 4 | 4 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | | | Description of biology, areas, importance, effect effect on our life and a short glance to the historical development of biology, classification and diversity of living things. Importance branchs of biology, classification and diversity of living things, Living and lifeless structure. The living science: Viruses, Bacteria(Archae and eubacteria), Eucarya(Protozoa, Fungi, Plants, Animals). Species concept and taxonomical structures. Viruses.Monera. Protista, Fungi. Plant structure and features, Basic unit of living: Cell, Cell structure and function, Cell membrane, cytoplasm,organels. Nucleus, Cell reproduction; Mitosis, Meiosis and, uncontrolled cell reproduction. Tissues: Plant tissues; meristem tissue, stable tissue. Plant organs and structure, vegatative organs, generative organs, Reproduction, fertilization and growth in without flowers and flowering plants. Classification of animals: similarity and dissimilarity. | | | | | | |
| **COURSE OBJECTIVES** | | | | | | | The main aim of this course is: explaining to science and scientific method; learning to main concepts and principles of Biology; exposing to general characteristics of living things and their differences from nonliving things; explaining to main structure and elements of living things and biochemical reactions; describing cell and its structure; introducing to different types of cell and issues; learning to biology of plants and animals | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education. | | | | | | |
| **COURSE OUTCOMES** | | | | | | | be able to comment on biological events scientifically  be able to know basic biological concepts an principles  be able to distinguish living things from nonliving things  be able to understand biochemical events in organisms  be able to recognize cell and it different types  be able to distinguish plants and animals each other  be able to identify different tissues and organ systems  be able to comprehend the functions of organ systems  be able to perceive different organism types. | | | | | | |
| **TEXTBOOK** | | | | | | | Kiziroğlu İ., “Genel Biyoloji” 2008, Okutman Yayıncılık | | | | | | |
| **OTHER REFERENCES** | | | | | | | Campbell&Reece “Biyoloji” 2006. Çeviri Editörleri: Prof.Dr. Ertunç Gündüz, Prof.Dr. Ali Demirsoy, Prof.Dr. İsmail Türkan, Palme yayıncılıkŞahin, Y. “Yaşambilim” 2005. İstanbul: Bilim Teknik YayıneviDemirsoy, A. Yaşamın Temel Kuralları (Genel Biyoloji-Genel Zooloji) 1997. Ankara:Meteksan A.Ş. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | | Computer, Projector, Models | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description of biology, areas, importance, effect effect on our life and a short glance to the historical development of biology |
| 2 | Classification and diversity of living things, Living and lifeless structure Species concept and taxonomical structures. |
| 3 | Prokaryotes (Archae domain characteristics, importance, classification)  (Bacteria domain characteristics, importance, classification) |
| 4 | Viruses group characteristics, importance, classification |
| 5 | Eukaryotes (Protista, and Fungi kingdom characteristics, importance, classification |
| 6 | Characteristics of plants and animal kingdom, their importance |
| 7-8 | MID-TERM EXAM |
| 9 | Basic Unit of life: the cell, the cell structure and function. Cell membrane, cytoplasm and organelles. The core. |
| 10 | Cell division, mitosis, meiosis, and uncontrolled cell division. |
| 11 | Tissues: Plant tissues; divided tissue, a constant tissue. |
| 12 | Vegetable Organs and Structures: vegetative organs |
| 13 | Generative organs. Non-flowering and flowering plants, reproduction, fertilization, and development. |
| 14 | Classification of animals: animals according to similarities and differences in classification, these features of life forms (nourishment, their place in nature). |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **x** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  | **x** |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞÇEN



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | FALL |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171113133 | **COURSE NAME** | General Physıcs III |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| III | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X ) ELECTIVE ( ) | | TURKISH | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Thermodynamics: Heat and temperature, thermal properties of matter (specific heat, thermal conductivity, thermal expansion), first and second law of thermodynamics, reversible and irreversible process, efficiency and entropy. Geometric optics: the structure, velocity and source of light, reflection and mirrors, refraction and lenses. Wave optics: Interference, Thin films, diffraction, resolution, polarization. Optics Instruments: Magnifying glass, Eye wear, Microscope, Overhead projector, Projection, Field glasses, Telescope, Camera, Prism spectrometer. Wave motion: Kinematics, dynamics, energy, reflection, diffraction and interference of waves, Sound waves, Standing waves, resonance, sound wave intensity, Doppler Effect. AC circuits: Resistivity, current, phase difference, resonance of RL, RC and RLC circuits, radio transmitter and receiver. Electromagnetic waves: oscillation of electric and magnetic field, Electromagnetic waves produced in dipole antenna, spectrum, energy and momentum of electromagnetic waves, Nucleaer Physics: Binding energy, natural and artyificial radioactivity, Nuclear reactions (fission fusion) and their energy , nuclear reactors. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to provide a basic understanding of thermodynamics, optics and waves, and nuclear physics | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be able to understand thermodynamics, optics, waves and nuclear physics quantities and to be able to apply and use the gained knowledge in daily life, and explain to other people | | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this module students will be able to:   1. Understand thermodynamics and optics quantities, 2. Identify, formulate, and solve problems analytically that appear in optical systems. 3. Explain the interference and diffraction in wave optics 4. Explain the wave kinematics 5. Analyze and resolve natural and artificial radioactive phenomenon and protect themselves from radiation | | | | | | | |
| **TEXTBOOK** | | | | | 1. Serway, R.A. (1990). Physics for Scientists and Engineers. Philadelphia: Saunders College Publishing. | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. (1996). Physics for Scientists and Engineers. Prentice Hall, Inc. 2. Halliday, D. , Resnick, R., &  [Walker](http://www.amazon.com/exec/obidos/search-handle-url/index=books&field-author-exact=Jearl%20%20Walker&rank=-relevance%2C%2Bavailability%2C-daterank/002-8598554-4103264), J. (2006) 6th ed. Fundamentals of Physics. New York: John Wiley & Sons, Inc. 3. Bueche, F., (1981) Technical Physics, Harper&Row, Publishers, NewYork 4. Korkmaz, Ş., Fizik-Fizik Optik- Geometrik Optik (2005), Eskişehir | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculater | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Temperature and its measurement of temperature, thermometers |
| 2 | Thermal expansion of liquids and gases, specific heat, description of ideal gas |
| 3 | Work and heat in thermodynamics process, First law of thermodynamics |
| 4 | Heat engines, Entropy and second law of thermodynamics |
| 5 | Kinetic theory of gases, Kinetic interpretation of temperature |
| 6 | Electromagnetic waves, light and its propagation, the law of reflection, Mirrorr and image formation |
| 7-8 | MID-TERM EXAM |
| 9 | Lenses, optics systems |
| 10 | Interference, diffraction and polarization of light |
| 11 | Wave motion and sound waves |
| 12 | Harmonic sound waves and Doppler effect |
| 13 | Binding energy, natural and artificial radioactivity, radioactive decays, |
| 14 | Fission fusion and nuclear power plant |
| 15-16 | FINAL EXAM |

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| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **X** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| **9** | Ability to explain natural events based on scientific basis. | **X** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| **15** | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof.Dr. M. Zafer BALBAĞ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 171113134 | **COURSE NAME** | GENERAL PHYSICS LAB III |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| III | 0 | | 0 | 2 | | | 2 | 2 | Compulsory (X ) Elective ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | | 14 | | 50 |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Mechanical equivalent of calorie, obtain of thermal expansion coefficient and thermal conduction of solids, Reflection laws and the properties of image formed by surface mirror, formation of images by concave and convex mirror and properties of image, formation of image by converging (thin) and diverging (thick) lenses, the travel of speed while it changes medium and light prism, interference produced by double slit, resonance, interference of water waves and Doppler effect, formation and propagation of sound, absorption of sound, reflection of sound and formation of echo.  To enrich these subjects with examples from daily life and to connect with science and technology teaching curriculum scheduled in 4.and 8 classes. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to strengthen insights into the fundamental concepts of physics related to heat and optic through direct investigations and provide hands-on experience. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be able to understand thermodynamics, optics, waves and nuclear physics quantities and to be able to create and organize new experiments using the gained knowledge from General physics III | | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this module students will be able to:   1. Understand thermodynamics and optics quantities, 2. Identify, formulate, and solve problems analytically 3. Understand the importance of quality and quantity examination 4. Improve physics interest 5. Develop an appreciation for qualitative and quantitative reasoning. 6. Develop the skills of team works 7. Make e objective observation of physical phenomena 8. Conclude physical phenomena from data and observation 9. Analysis quantitative data using statistics 10. Discuss the experimental data 11. Prepare report of experiment | | | | | | | |
| **TEXTBOOK** | | | | | 1. Aral, E., Korkmaz, Ş., Sarpün, İ. H., Kurtaran, S., Kılıç, G., (1998)Fizik III (Optik) Deneyleri , 2. Titreşimler ve Dalgalar Deneyleri / Ertunç. Aral, E. Aral ve Ş. Korkmaz | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Serway, R.A. (1990). Physics for Scientists and Engineers. Philadelphia: Saunders College Publishing. 2. Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. (1996). Physics for Scientists and Engineers. Prentice Hall, Inc. 3. Halliday, D. , Resnick, R., &  [Walker](http://www.amazon.com/exec/obidos/search-handle-url/index=books&field-author-exact=Jearl%20%20Walker&rank=-relevance%2C%2Bavailability%2C-daterank/002-8598554-4103264), J. (2006) 6th ed. Fundamentals of Physics. New York: John Wiley & Sons, Inc. 4. Bueche, F., (1981) Technical Physics, Harper&Row, Publishers, NewYork 5. Korkmaz, Ş., Fizik-Fizik Optik- Geometrik Optik (2005), Eskişehir | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculater | | | | | | | |

|  |  |
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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Laboratory Rules and security in Laboratory |
| 2 | Determination of thermal expansion coefficient, |
| 3 | Determination of specific heat and determination of latent heat |
| 4 | Reflection of light, Refraction of light |
| 5 | Dispersion of light |
| 6 | Focus length of cylindrical mirrors |
| 7-8 | MID-TERM EXAM |
| 9 | Focal point of converging lenses |
| 10 | Angle of refraction of Prism |
| 11 | Measurement of refractive index of liquid |
| 12 | Diffraction grating |
| 13 | Polarization |
| 14 | Brewster angle |
| 15-16 | FINAL EXAM |

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| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **X** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty | **X** |  |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| **9** | Ability to explain natural events based on scientific basis. | **X** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. | **X** |  | **-** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **X** |  |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary | **X** |  |  |
| **15** | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. M. Zafer BALBAĞ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171113135 | **COURSE NAME** | **General Chemistry**  **(Analytical Chemistry) III** |

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| **SEMESTER** | | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** | | |
| III | | | 2 | | 2 | 0 | | | 3 | 4 | | COMPULSORY (X) ELECTIVE ( ) | Turkish | | |
| **COURSE CATAGORY** | | | | | | | | | | | | | | | |
| **Basic Science** | | | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** | |
|  | | | |  | | | | x | | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | | **Evaluation Type** | | | | **Quantity** | | | **%** | |
| Mid-Term | | | | 1 | | | 40 | |
| Quiz | | | |  | | |  | |
| Homework | | | |  | | |  | |
| Project | | | |  | | |  | |
| Report | | | |  | | |  | |
| Others (………) | | | |  | | |  | |
| **FINAL EXAM** | | | | | | |  | | | | 1 | | | 60 | |
| **PREREQUIEITE(S)** | | | | | | |  | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | | **Content of the course is as follows**: Description and purpose of analytical chemistry, methods for the identification of qualitative and quantitative analysis, solutions, solvents, solubility, solution of concentrations,important chemical reactions for analytical chemistry: precipitation, neutralization,complex,redox. Chemical equilibrium, homogen and heterogen of equilibrium reaction, Acids and bases, weak acids and weak bases, strong acids and strong bases, monoacid-monobase, polyfunctional acids, pH and pOH, acids and bases of equilibras, buffer solutions. Quantitative analysis: gravimetric analysis, titrimetry analysis, nonaqueas media titrations, complexometric analysis, the errors on chemical analysis, methods of instrumental analysis. | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | | To give the ability of performing titrimetric and gravimetric analysis to students. , öğrencinin kimyasal analizle ilgili teoriyi ve kısmen pratik uygulamaları kavrayarak, karşılaştığı bir problemin çözümünde bunlardan yararlanmayı öğrenmesidir. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | | Occupational contribution is learning about the basic concepts of general chemistry (Analytical Chemistry) III.  Establishing the relationship between daily life issues and to developing basic skills and knowledge to use later in their lives. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | | | 1. Gain the supplement knowledge to basic chemistry 2. Synthesis the knowledge on science with the content of this course 3. Analyze and estimate the data in the related scientific problem 4. Learn and distinguish the content and type of knowledge on science 5. Gain ability on research and learn scientific method 6. Gain the ability to attain balance between oral, written and applied scientific activities 7. Get professional qualification on this course and gain ability to follow the knowledge in contemporary issues 8. Apply the content of this course on current subject 9. Design and conduct experiments as well as to analyze and interpret data 10. Use techniques, skills, and modern tools necessary for practice in chemistry 11. Get information about definition, formulation and solution of problems 12. Students will be able to learn the structure of matter and its components 13. Students will be able to understand the methods of quantitative and qualitative analysis of matter | | | | | | | | |
| **TEXTBOOK** | | | | | | | Analitik Kimya, (1991)Anadolu Üniversitesi Açıköğretim Fakültesi Kimya Lisans Tamamlama programı | | | | | | | | |
| **OTHER REFERENCES** | | | | | | | 1. **Harris, D.C. (1994)** Analitik Kimya, Çev.Editörü:Güler Somer,Gazi Büro Kitapevi 2. **Gündüz, T. (1997)** Kantitatif Analiz Ders Kitabı, Bilge Yayımcılık 3. **Skoog, D.A., West, D.M., Holler , F.J. (1996)** Fundamentals of Analytical Chemistry | | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | | |
| 1 | Description and purpose of analytical chemistry, methods for the identification of qualitative and quantitative analysis, | | | | | | | | | | | | |
| 2 | solutions, solvents, solubility, | | | | | | | | | | | | |
| 3 | solution of concentrations, | | | | | | | | | | | | |
| 4 | important chemical reactions for analytical chemistry: precipitation, neutralization,complex,redox. | | | | | | | | | | | | |
| 5 | important chemical reactions for analytical chemistry: precipitation, neutralization,complex,redox. | | | | | | | | | | | | |
| 6 | Chemical equilibrium, homogen and heterogen of equilibrium reaction | | | | | | | | | | | | |
| 7-8 | MID-TERM EXAM | | | | | | | | | | | | |
| 9 | Chemical equilibrium, homogen and heterogen of equilibrium reaction | | | | | | | | | | | | |
| 10 | , Acids and bases, weak acids and weak bases, strong acids and strong bases, monoacid-monobase, polyfunctional acids, pH and pOH, acids and bases of equilibras, buffer solutions | | | | | | | | | | | | |
| 11 | , Acids and bases, weak acids and weak bases, strong acids and strong bases, monoacid-monobase, polyfunctional acids, pH and pOH, acids and bases of equilibras, buffer solutions. | | | | | | | | | | | | |
| 12 | Quantitative analysis: gravimetric analysis, titrimetry analysis, | | | | | | | | | | | | |
| 13 | Quantitative analysis: gravimetric analysis, titrimetry analysis, | | | | | | | | | | | | |
| 14 | nonaqueas media titrations, complexometric analysis, the errors on chemical analysis, methods of instrumental analysis. | | | | | | | | | | | | |
| 15-16 | FINAL EXAM | | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **x** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| 9 | Ability to explain natural events based on scientific basis. |  | **x** |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **x** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  | **x** |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Asiye BERBER

**Signature**:



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

|  |  |
| --- | --- |
| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171113137 | **COURSE NAME** | Teaching Principles and Methods |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** | |
| III | 3 | | - | - | | | 3 | 5 | | COMPULSORY (X ) ELECTIVE ( | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Sciences** | | | | **……Department Pedagogical Content Knowledge**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | | %100 | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | | **%** |
| Mid-Term | | | | 1 | | | 30 |
| Quiz | | | |  | | |  |
| Homework | | | | 1 | | | 30 |
| Project | | | |  | | |  |
| Report | | | |  | | |  |
| Others (………) | | | |  | | |  |
|  | | | |  | | |  |
| **FINAL EXAM** | | | | |  | | | | 1 | | | 40 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The course content includes the main concepts about instruction, the principles for learning and teaching, the importance and benefits of planned study, planning of instruction (year plan, daily plan and sample exercises), learning and teaching strategies, instructional methodologies and techniques and the relationships of those to the practice, instructional tools and equipment, the responsibilities and duties of a teacher for increasing the quality of instructional service, the evaluation of teacher proficiencies and instructional service. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aims to provide the teacher candidates with the basic skills and capabilities for instructional principles, strategies, models, approaches and methods and planning teaching-learning situations, which will respond to students’ needs and fit into good quality learning and effective teaching. | | | | | | | |
| **CONTRIBUTION OF THE COURSE TO PROVISION OF PROFESSIONAL EDUCATION** | | | | | By the end of this course, the teacher candidate will possess the required professional skills of planning the instructional principles-based instructional activities for effective and efficient instruction to take place and of applying the instructional approaches used in the organization of student-centered teaching-learning processes, instructional strategies and instructional methods and techniques. | | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be able to   1. Define the main concepts related to the specialization. 2. Explain the program development process. 3. İnquire the relationship among the elements of program development process 4. Discuss the curricula related to their specialization 5. Explain the major characteristics of instructional principles 6. Examine different learning approaches 7. Determine teaching strategies in accordance with the objectives, content and student characteristics 8. Use various instructional methods and techniques 9. Discuss the importance of planning instructional activities 10. Explain the types of plans used in instruction 11. Explain the qualities to be found in a lesson plan 12. Plan instruction by employing the appropriate teaching strategies, methods and techniques. 13. Define teacher proficiencies | | | | | | | |
| **TEXTBOOK** | | | | | The textbooks for the instructional principles and methodologies. | | | | | | | |
| **OTHER REFERENCES** | | | | | \* Arslan, Mehmet. (2007). Öğretim İlke ve yöntemleri. Ankara: Anı Yayıncılık.\* Küçükahmet, Leyla. (1994). Öğretim İlke ve Yöntemleri. Ankara: Gazi Büro Kitabevi.\* Sönmez, Veysel. (2007). Öğretim İlke ve Yöntemleri. Ankara: Anı Yayıncılık.\* Açıkgöz, Kamile Ün. (1998). Etkili Öğrenme ve Öğretme. İzmir: Kanyılmaz Matbaası.\* Bilen, M. (1998). Plandan Uygulamaya Öğretim. Ankara: Takau Matbaası.\* Demirel, Özcan. (1996). Genel Öğretim Yöntemleri. Ankara: USEM Yayın No: 11.\* -------. (1999). Plandan Değerlendirmeye Öğretme Sanatı. Ankara\* Fidan, Nurettin. (1986). Okulda Öğrenme ve Öğretme. Ankara: Kadıoğlı Matbaacılık\* Gültekin, M. (2006). Öğretimde Planlama ve Değerlendirme. Eskişehir: AFÖ Yayınları.\* Senemoğlu, N. (1997). Gelişim, Öğrenme ve Öğretim. Ankara: Ertem Matbaacılık. **\*** Sönmez, Veysel (1993). Program Geliştirmede Öğretmen El Kitabı. 4. Baskı. Ankara: Adım Yayıncılık. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Data projector, computer, internet, overhead projector and other instructional Technologies and materials to be used for this field | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| **1** | Information about and Introduction to the course and general concepts |
| **2** | Program Development Process- Objectives and content |
| **3** | Program Development Process- Teaching-learning process-Evaluation |
| **4** | Teaching and learning principles |
| **5** | Teaching and learning strategies |
| **6** | Teaching and Learning Strategies |
| **7** | Midterm |
| **8** | Midterm |
| **9** | Instructional methods and techniques |
| **10** | Instructional methods and techniques |
| **11** | Planning the instructional activities |
| **12** | Planning the instructional activities |
| **13** | The influential factors upon the quality of instructional service |
| **14** | Teacher proficiencies |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | X |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | X |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | X |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | X |  |
| 5 | Ability to follow and interpret the contemporary issues |  |  | X |
| 6 | Ability to work in cooperation and to gain career and ethical responsibility |  |  | X |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | X |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) | X |  |  |
| 9 | Ability to explain natural events based on scientific basis. |  |  | X |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | X |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. | X |  |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | Χ |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | Χ |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Zuhal ÇUBUKÇU

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSE CODE** | 171113130 | **COURSE NAME** | Foreign Language I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | | **LANGUAGE** |
| III | 3 | | 0 | 0 | | | 3 | 5 | | COMPULSORY ( X) ELECTIVE () | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | | **General Culture Knowledge** | | | | **Elective Course** | | | |
|  | |  | | | X | | | | General Knowledge( ) Content Knowledge ( ) | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 40 |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | | To Be, Possessive Adjectives Objective Pronouns , Indefinite & Definite Article, Have Got ? Has Got (9) ? There Is ? Are ? This, That Adverb Of Place / Time In ,On , At, Simple Present, How Often ? Frequency Adverbs, Simple Present, Related Exercises, Some, Any, A Lot, Much, Many, Nobody/ No One/ Nothing Somebody, Anything, Nowhere, Not + Any, No, Non, Not + Anybody/ Anyone/ Anything, Present Cont. (3,4) ? And, So, Because, But (97) Past Simple, Past Cont., Future Tense, Modals, | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The purpose of teaching foreign language is to provide teaching basic rules of foreign language, enhanceing foreign language vocabulary, understending reading and listening foreign language and expressing orally or in writing. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | Candidate teachers reach information of social and professional life by knowing basic level a foreign language thanks to this course. | | | | | | |
| **COURSE OUTCOMES** | | | | | | Candidate teachers understand different social issues by reading English. Candidate teachers gain abilities of reading, writing daily life’s issues. Candidate teachers gain ability of talking about themselves. | | | | | | |
| **TEXTBOOK** | | | | | | Murphy, R. 2006; Essential Grammar In Use, Cambridge, Great Britain | | | | | | |
| **OTHER REFERENCES** | | | | | | Redston, C. 2006; Face2face Elementary Course Book, Cambridge, Great Britain | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | To Be, Possessive Adjectives Objective |
| 2 | Pronouns , Indefinite & Definite Article |
| 3 | Have Got ? Has Got (9) |
| 4 | There Is ? Are ? |
| 5 | This, That Adverb Of Place |
| 6 | How Often ? Frequency Adverbs, |
| 7-8 | MID-TERM EXAM |
| 9 | Simple Present Contious |
| 10 | Simple Past |
| 11 | Past Contious |
| 12 | Future Tense |
| 13 | So, Because, But |
| 14 | Modals |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **X** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. | **X** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):**

**Signature**  **Date:**

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | SPRING |

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| **COURSE CODE** | 171114135 | **COURSE NAME** | COMPUTER II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 2 | | 2 | 0 | | | 3 | 6 | COMPULSORY (x) ELECTIVE () | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Basic concepts related to computer assisted instruction, elements, theoretical foundations, benefits and limitations, application procedures, common formats used in computer assisted instruction, evaluation and selection of educational software, distance learning applications, database applications, computer and internet on children / teens negative effects on and prevention. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Educational software, educational software, types, use the advanced productivity applications, to gain knowledge and skills about the use of the Internet. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | **The students will be able to;** | | **1)** Use a spreadsheet software as a professional user, | 1,4,6,14 | A,F |  | | **2)** Use a software to prepare a presentation professionally, | 1,4,6,14 | A,F |  | | **3)** Become conscious about obtaining trustworthy information from  the internet, | 1,4,6,14 | A,F |  | | **4)** Use the internet tools for education, | 1,4,6,14 | A,F |  | | **5)** Use Microsoft Office tools, which they have learned part by part,  as parts of a complete system. |  |  |  | | | | | | | |
| **TEXTBOOK** | | | | | Güneş A. (2007). Bilgisayar I-II (Temel Bilgisayar Becerileri). Ankara: Pegema Yayıncılık. | | | | | | |
| **OTHER REFERENCES** | | | | | Levent Çelik,2011, Bilgisayar ve Temel Bilgi Teknolojileri, 1. Baskı | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Internet use (advantages and disadvantages), ethical issues |
| 2 | Searching for information on the Internet and transfer (the use of search engines) |
| 3 | Advanced PowerPoint (effective presentation design) |
| 4 | Internet communication (e-mail, interview, group e-mail) |
| 5 | Data transfer on the Internet |
| 6 | Printer, scanner and other devices connected to the computer usage |
| 7-8 | MID-TERM EXAM |
| 9 | Data storage devices |
| 10 | Data storage devices |
| 11 | Data archiving, backup |
| 12 | MS Excel applications (data entry and processing) |
| 13 | Excel applications (processed data View: graphing and charting) |
| 14 | Teaching the use of computer applications |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | X |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | X |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | X |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | X |  |
| 5 | Ability to follow and interpret the contemporary issues |  |  | X |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | X |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | X |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) | X |  |  |
| 9 | Ability to explain natural events based on scientific basis. |  |  | X |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | X |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. | X |  |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | Χ |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | Χ |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Esra EREN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171114140 | **COURSE NAME** | The Biological Wealth |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| IV | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( ) ELECTIVE ( x) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | |  | | | | x | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | This course provides fauna, flora, endemic species concepts, flora and fauna wealth of Turkey, endemic species, risk factors in habitat of living things, effect of air, water and soil pollution, “in situ” and “exs situ” protective methods of gene resources, impotance of gene banking, national parks, [arboretum](http://www.seslisozluk.com/?word=arboretum), [herbarium](http://www.seslisozluk.com/?word=herbarium), individual and foundation protective of biological wealth, important of education | | | | | | | |
| **COURSE OBJECTIVES** | | | | | For recognition and protection of the biological wealth of Turkey as a teacher and a citizen shall have the knowledge and skills related to the necessity of what | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. be able to perception biological wealth concept 2. be able to perception how formed biological wealth 3. be able to acknowledgment biological wealth in Turkey | | | | | | | |
| **TEXTBOOK** | | | | | 1. Türkiye’nin Biyolojik Zenginlikleri. Türkiye Çevre Vakfı. Ocak 2005 Ankara | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Çevresel Etki Değerlendirmesi N. Yiğit, Ankara 2003 2. Türkiye’nin Omurgalıları, Demirsoy, A., 3. Türkiye’nin Sürüngenleri, Demirsoy,A., 4. ’Türkiye’nin Zoocoğrafyası, Demirsoy,A., | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, Projection | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Fauna, flora, endemic species concepts |
| 2 | Marine Fauna |
| 3 | Freshwater Fauna |
| 4 | Invertebrates |
| 5 | Amphibia and Reptiles |
| 6 | Aves |
| 7-8 | MID-TERM EXAM |
| 9 | Mammalia |
| 10 | Plantae |
| 11 | Abundance of common plants in ecosystems |
| 12 | Forests and National Parks |
| 13 | The importance of gene banks, principle of operation |
| 14 | Protection of biological wealth individuals, institutions and organizations responsibilities in this respect, the importance of education |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **x** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. |  | **x** |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞÇEN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | SPRING |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171114137 | **COURSE NAME** | **Science- Program And Planning Technology** |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | | **COURSE OF** | | | | |
| **Theory** | | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | | 3 | | | 0 | 0 | | | 3 | 5 | COMPULSORY (x) ELECTIVE () | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | | | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 50 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | | | The define of curriculum, the principles of curriculum development, the main approaches of curriculum development, curriculum development process, development of primary science and technology curriculum and component of primary science and technology curriculum, yearly plan, lesson plan and daily plan, general teaching principles, methods and techniques. | | | | | | |
| **COURSE OBJECTIVES** | | | | | | | To acquaint students with curriculum development studies and science and technology education standards. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | | | |  | | --- | | **The students will be able to;** | | 1. define main concepts of curriculum development, | 1,4,6,14 | A,F |  | | 1. evaluate Science and Technology curriculum, | 1,4,6,14 | A,F |  | | 1. plan teaching activities, | 1,4,6,14 | A,F |  | | 1. know and practice teaching principles and methods, | 1,4,6,14 | A,F |  | | 1. prepare lesson plans, 2. relate matter with everyday life activite. |  |  |  | | | | | | | |
| **TEXTBOOK** | | | | | | | |  | | --- | |  | | 1) Demirel (1999). Kuramdan Uygulamaya Eğitimde Program Geliştirme. Ankara: PegemA Yayıncılık.  2) Varış (tarihsiz). Eğitimde Pogram Geliştirme. İstanbul: Alkım Yayınevi. | |  | | | | | | | |
| **OTHER REFERENCES** | | | | | | | 3) İlköğretim Fen ve Teknoloji Dersi Öğretim Programı ve Kılavuzu (2006). Ankara: MEB Yayınları. | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | | |
| **WEEK** | | **TOPICS** | | | | | | | | | | | |
| 1 | | The main concepts in curriculum development, education, teaching, education curriculum, teaching curriculum, lesson plan, implicit programme | | | | | | | | | | | |
| 2 | | Theoretical mains of curriculum development: historical basis, philosophical basis | | | | | | | | | | | |
| 3 | | |  | | --- | | Psychological mains of curriculum development: Behaviourism, Cognitive Theories Social mains of curriculum development | | | | | | | | | | | | |
| 4 | | Main approaches of curriculum development The models of curriculum development at education: in ABD, in Europe, in Turkey | | | | | | | | | | | |
| 5 | | The process of the curriculum development | | | | | | | | | | | |
| 6 | | The new approach of curriculum development | | | | | | | | | | | |
| 7-8 | | MID-TERM EXAM | | | | | | | | | | | |
| 9 | | Development of primary science and technology curriculum and component of primary science and technology curriculum | | | | | | | | | | | |
| 10 | | Yearly plan, lesson plan and daily plan | | | | | | | | | | | |
| 11 | | Pre-test | | | | | | | | | | | |
| 12 | | General teaching principles, methods and techniques | | | | | | | | | | | |
| 13 | | General teaching principles, methods and techniques | | | | | | | | | | | |
| 14 | | General teaching principles, methods and techniques | | | | | | | | | | | |
| 15-16 | | FINAL EXAM | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | X |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | X |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | X |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | X |  |
| 5 | Ability to follow and interpret the contemporary issues |  |  | X |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | X |
| 7 | Ability to develop science literacy based on the purposes of the basic science education |  |  | X |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) | X |  |  |
| 9 | Ability to explain natural events based on scientific basis. |  |  | X |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | X |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. | X |  |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | Χ |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | Χ |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. |  |  | **X** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Ersin KARADEMİR

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

 **ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

|  |  |
| --- | --- |
| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171114134 | **COURSE NAME** | General Chemistry IV(Organic Chemistry) |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| x | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Alkanes, alkenes, alkynes, circular aliphatic compounds, reactions of aromatic compounds, peptides, proteins, enzymes, metabolic circulations, membrane structure and functions, metabolic regulation systems. | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach basic subjects of organic chemistry which consist of carbon compounds chemistry and biochemistry which chemical structure of living things and chemical events happen in life span superficially. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Occupational contribution is learning about the basic concepts of general chemistry IV (Organic Chemistry).  Establishing the relationship between daily life issues and to developing basic skills and knowledge to use later in their lives | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. apply knowledge of basic chemistry 2. conduct applications as well as to analyze and interpret data 3. function on multi-disciplinary teams 4. identify, formulate, and solve chemical problems 5. computer, software as contemporary methods, techniques apply to chemistry 6. communicate effectively 7. understand the broad education necessary to understand the impact of chemical solutions in a global and societal context 8. get a recognition of the need for, and an ability to engage in life-long learning 9. gain a knowledge of contemporary issues 10. Students of organic compounds, alkanes, Alkenes, Alkynes, alkyl halides, and aromatic compounds, Nomenclature, properties, synthesis methods and will have knowledge about reactions   11. Students are alcohols, ethers, aldehydes, ketones, carboxylic acids, amines and esters are named, will have knowledge about the general properties and reactions | | | | | | |
| **TEXTBOOK** | | | | | Anadolu Üniversitesi Yayınları no:1080, Açıköğretim Fakültesi Yayınları no:598 Fen Bilgisi Öğretmenliği cilt 2, 1999 | | | | | | |
| **OTHER REFERENCES** | | | | | Uyar, T., vd., ”Organik Kimya”, Palme Yayıncılık, Ankara, 1998.  Okay, G., Yıldırır,Y., vd., “Organik Kimya”, Literatür Yayıncılık, İstanbul, 2002.  Bağ, H. (Editör), (2008), Genel Kimya IV, Ankara: Pegem Akademi | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Alkanes, alkenes, alkynes, |
| 2 | Alkanes, alkenes, alkynes, |
| 3 | Alkanes, alkenes, alkynes, |
| 4 | Alkanes, alkenes, alkynes, |
| 5 | circular aliphatic compounds |
| 6 | reactions of aromatic compounds, |
| 7-8 | ARA SINAV |
| 9 | alcohols |
| 10 | aldehydes |
| 11 | Ketones |
| 12 | Karboksilik asitler, karbonhidratlar, |
| 13 | peptides, proteins, enzymes |
| 14 | metabolic circulations, membrane structure and functions, metabolic regulation systems. |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **x** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| 9 | Ability to explain natural events based on scientific basis. |  | **x** |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **x** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  | **x** |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Asiye BERBER

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171114132 | **COURSE NAME** | General Biology Laboratory II. |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 0 | | 0 | 2 | | | 1 | 2 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  |  |
| Quiz | | | | | 1 | 15 |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | | 1 | 25 |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Examination of photosynthesis in plant. Examination of single cell living things and tissues. Cultivation of living things in laboratory. Examination of embriological development stages in living things (frog, chick), Observation of respiration in living things, Examination of blood cells, determination of blood groups. Determination of carbonhydrate, fat, protein in foods | | | | | | |
| **COURSE OBJECTIVES** | | | | | Of use of different materials, techniques, and basic laboratory examination under the microscope | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the knowledge and skills to (design) develop the biology lab experiments and activities | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. be able to observe of photosynthesis in plant 2. be able to investigate of single cell living things 3. be able to observe respiration in living things 4. be able to perceive determination of blood groups   be able to make determination of carbonhydrate, fat, protein in foods | | | | | | |
| **TEXTBOOK** | | | | | Kılıç A**.,** 2000, Genel Biyoloji Laboratuvarı | | | | | | |
| **OTHER REFERENCES** | | | | | Test sheets prepared by the Instructors | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Microscope | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Examination of photosynthesis in plant. |
| 2 | Examination of tissue samples of plant I |
| 3 | Examination of tissue samples of herbal II |
| 4 | Examination of vegetable organs I |
| 5 | Examination of vegetable organs II |
| 6 | Examination of animal tissues I |
| 7-8 | MID-TERM EXAM |
| 9 | Examination of animal tissues II |
| 10 | Observation of respiration in living things, |
| 11 | Examination of embriological development stages in living things (frog, chick), |
| 12 | Examination of embriological development stages in living things (frog, chick), |
| 13 | Examination of blood cells, determination of blood groups. |
| 14 | Determination of carbonhydrate, fat, protein in foods |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **x** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  | **x** |  |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | **x** |  |
| **5** | Ability to follow and interpret the contemporary issues |  | **x** |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  | **x** |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞÇEN

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

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171114131 | **COURSE NAME** | **General Biology II** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 4 | | 0 | 0 | | | 4 | 4 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Energy exchange with the environment, energy transport systems in living things, celluler respiration, photosynthesis and comparision with respiration, Animal tissues and structure: tissue diversity, functions and working properties. Reproduction in animals, fertilization and development: Importance of reproduction, fertilization types, embryologic development stages, Nutrition and digestion in animals; Respiratory system in animals, Excretory system in animals. circulatory system in animals, Nervous system in animals, animal organization and homeostasis. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of this course is: explaining how to transport substances and energy in living organisms; learning to events of reproduction, growth and development of plants and animals; explaining to how plants and animals do their biological activities. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education | | | | | | |
| **COURSE OUTCOMES** | | | | | be able to comment on substance and energu cyclus in living things  be able to perceive similarities and differences between biological activities of plants and animals.  be able to explain metabolic periods of plants  be able to understand reproductive and developmental periods of plants and animals  be able to know organ systems of animals and their physiology  be able to recognize to body and organ systems of human beings | | | | | | |
| **TEXTBOOK** | | | | | Kiziroğlu İ., “Genel Biyoloji” 2008, Okutman Yayıncılık | | | | | | |
| **OTHER REFERENCES** | | | | | Campbell&Reece “Biology” 2006. Çeviri Editörleri: Prof.Dr. Ertunç Gündüz, Prof.Dr. Ali Demirsoy, Prof.Dr. İsmail Türkan, Palme yayıncılıkŞahin, Y. “Yaşambilim” 2005. İstanbul: Bilim Teknik Yayınevi  1. Demirsoy, A. Yaşamın Temel Kuralları (Genel Biyoloji-Genel Zooloji) 1997. Ankara:Meteksan A.Ş. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, Projector, Models | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Energy exchange with the environment, energy transport systems in living things, celluler respiration, |
| 2 | Photosynthesis |
| 3 | Photosynthesis and comparision with respiration, Animal tissues and structure: |
| 4 | Tissues, functions and working properties |
| 5 | Reproduction in animals, fertilization and development |
| 6 | Importance of reproduction, fertilization types, embryologic development stages,. |
| 7-8 | MID-TERM EXAM |
| 9 | Nutrition and digestion in animals |
| 10 | Respiratory system in animals |
| 11 | Excretory system in animals. |
| 12 | Circulatory system in animals |
| 13 | Nervous system in animals |
| 14 | Animal organization and homeostasis. |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **x** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  | **x** |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof.Dr. Cansu FİLİK İŞÇEN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

|  |  |
| --- | --- |
| **SEMESTER** | SPRING |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171114133 | **COURSE NAME** | INTRODUCTION TO MODERN PHYSICS |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** | |
| IV | 2 | | 0 | 0 | | | 2 | 2 | | COMPULSORY (X ) ELECTIVE ( ) | TURKISH | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | | **%** |
| Mid-Term | | | | 1 | | | 40 |
| Quiz | | | |  | | |  |
| Homework | | | | 1 | | | 10 |
| Project | | | |  | | |  |
| Report | | | |  | | |  |
| Others (………) | | | |  | | |  |
| **FINAL EXAM** | | | | |  | | | | 1 | | | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Relativity: relativity of time, dimension and mass. Photons: Quantum concept, wave-photon dilemma Black body radiation, Photoelectric effect and Compton scattering. The structure of atom: Atom models, energy levels, atomic and molecular spectrums. Quantum mechanics:, De Broglie waves, Uncertainty principle, Schrödinger wave. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to is to give fundamental concepts about Modern Physics | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be able to understand the concepts of modern physics and to be able to apply and use the gained knowledge in daily life, and to have the skill explain to other people | | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this module students will be able to:   1. Understand relativity and relativistic mass and energy, 2. Understand wave –particle dilemma 3. Learn quantum concept 4. Explain the wave kinematics 5. Learn the structure of atomic structure | | | | | | | |
| **TEXTBOOK** | | | | | 1. Beiser A. Concepts of modern physics, McGraw-Hill | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Taylor J.R., Zafaritos C., Dubson M. A., Modern physics for scientists and engineers, Prentice Hall, Inc. 2. Serway, R.A. (1990). Physics for Scientists and Engineers. Philadelphia: Saunders College Publishing 3. Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. (1996). Physics for Scientists and Engineers. Prentice Hall, Inc. 4. Bueche, F., Technical Physics,Harper&Row, Publishers, NewYork | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculater | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Special relativity, Michelson Morley experiment |
| 2 | Time dilation, length contraction |
| 3 | Lorentz transformation |
| 4 | Relativistic momentum, mass and energy |
| 5 | The particle nature of waves: Black body radiation |
| 6 | The particle nature of waves: Photoelectric effect |
| 7-8 | MID-TERM EXAM |
| 9 | The particle nature of waves: Compton effect and pair formation |
| 10 | Atomic spectrum, atom models, Rutherford atom model, |
| 11 | Bohr atom model |
| 12 | The wave nature of particles, De Broglie relation, Heisenberg uncertainty principle |
| 13 | Quantum mechanics and wave equation |
| 14 | Hydrogen atom and Schrödinger wave equation |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **X** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| **9** | Ability to explain natural events based on scientific basis. | **X** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| **15** | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Deniz KORKMAZ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | Spring |

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| **COURSE CODE** | 171114130 | **COURSE NAME** | Foreign Language II |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | | **TYPE** | **LANGUAGE** | | |
| IV | | 3 | | 0 | 0 | | | 3 | 5 | | | COMPULSORY ( X) ELECTIVE () | Turkish | | |
| **COURSE CATAGORY** | | | | | | | | | | | | | | | |
| **Professional Knowledge** | | | **Content Knowledge** | | | **General Culture Knowledge** | | | | **Elective Course** | | | | | |
|  | | |  | | | X | | | | General Knowledge( ) Content Knowledge ( ) | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | | **Evaluation Type** | | | | **Quantity** | | | **%** | |
| 1st Mid-Term | | | | 1 | | | 40 | |
| 2nd Mid-Term | | | |  | | |  | |
| Quiz | | | |  | | |  | |
| Homework | | | |  | | |  | |
| Project | | | |  | | |  | |
| Report | | | |  | | |  | |
| Others (………) | | | |  | | |  | |
| **FINAL EXAM** | | | | | | |  | | | | 1 | | | 60 | |
| **PREREQUIEITE(S)** | | | | | | | None | | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | | Present Perfect ,Present Perfect Continuous , Adjectives , Adjectives & Adverbs , Adjectives & Adverbs , Passives , Passives , Conditionals , Relative Clause , Relative Clause , Noun Clause (49), Reported Speech (50), Gerunds And Infinitives . | | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | | The purpose of teaching foreign language is to provide teaching basic rules of foreign language, enhanceing foreign language vocabulary, understending reading and listening foreign language and expressing orally or in writing. | | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | | Candidate teachers reach information of social and professional life by knowing basic level a foreign language thanks to this course. | | | | | | | | |
| **COURSE OUTCOMES** | | | | | | | Candidate teachers understand different social issues by reading English. Candidate of Classroom teachers gain abilities of reading, writing daily life’s issues. Candidate of Classroom teachers gain ability of talking about themselves. | | | | | | | | |
| **TEXTBOOK** | | | | | | | Murphy, R. 2006; Essential Grammar In Use, Cambridge, Great Britain | | | | | | | | |
| **OTHER REFERENCES** | | | | | | | Redston, C. 2006; Face2face Elementary Course Book, Cambridge, Great Britain | | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | | | |
| 1 | Present Perfect, Present Perfect Contious | | | | | | | | | | | | | |
| 2 | Adjectives | | | | | | | | | | | | | |
| 3 | Adjectives & Adverbs | | | | | | | | | | | | | |
| 4 | Adjectives & Adverbs 2 | | | | | | | | | | | | | |
| 5 | Passives | | | | | | | | | | | | | |
| 6 | Passives 2 | | | | | | | | | | | | | |
| 7-8 | MID-TERM EXAM | | | | | | | | | | | | | |
| 9 | Conditionals , | | | | | | | | | | | | | |
| 10 | Conditionals 2 | | | | | | | | | | | | | |
| 11 | Relative Clause , | | | | | | | | | | | | | |
| 12 | Noun Clause | | | | | | | | | | | | | |
| 13 | Noun Clause 2 | | | | | | | | | | | | | |
| 14 | Reported Speech, Gerunds And Infinitives . | | | | | | | | | | | | | |
| 15-16 | FINAL EXAM | | | | | | | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Efficiently and effectively use designing, planning, implementing, and managing process of educational technology; design and prepare required products, changes and updates by examining these processes |  |  | **X** |
| 2 | Reaching, analyzing, synthesing and evaluating knowledge and using and adapting knowledge to new situations by using information technologies |  |  | **X** |
| 3 | Have sufficient knowledge, skill and competence about issues related to teaching profession and to perform this profession |  |  | **X** |
| 4 | Knows how to use instructional technologies and materials in lessons; developing, using and guiding applications such as educational software, e-learning, distance learning, learning management systems |  |  | **X** |
| 5 | Develop materials to enrich learning activities, by using special developed programs to prepare graphic designing and animation, web designing and educational software |  |  | **X** |
| 6 | Identifies, models and solves problems in Computer and Instructional Technologies Education field |  |  | **X** |
| 7 | Planning technological needs by analyzing the current situation and leads the use of these technologies in education and training process |  |  | **X** |
| 8 | Used domain-specific teaching-learning theories, teaching-learning strategies, methods and techniques to apply |  |  | **X** |
| 9 | Determine measurement and evaluation methods used into Information education technology and techniques. |  |  | **X** |
| 10 | To be skills and competence of computer hardware, operating systems, computer networks and programming languages |  |  | **X** |
| 11 | Create solutions for social problems within the framework of social responsibility and professional ethics. |  | **X** |  |
| 12 | Having skills about Turkish verbal and written communication |  |  | **X** |
| 13 | Having skills about critical thinking, create new ideas, have the ability to solve problems and to discover | **X** |  |  |
| 14 | Having knowledge of the general culture |  |  | **X** |
| 15 | Apply to projects processes and conduct to project in the electronic environment, an interdisciplinary team-work |  | **X** |  |
| **1**: None. **2**: Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Semra Kıranlı Güngör

**Signature**  **Date:**

**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| **SEMESTER** |  |

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| **COURSE CODE** | 171114139 | **COURSE NAME** | **Living Language of Chemistry** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| IV | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( ) ELECTIVE (X) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | | 1 | 10 |
| Others (presentation) | | | | | 1 | 30 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Content of the course is as follows: Nature and chemistry, Living and chemistry, chemistry of live, ancient civilization of chemistry, paint, cosmetics, polymers | | | | | | |
| **COURSE OBJECTIVES** | | | | | the main object of the course is to show application of chemistry in daily live | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | often encountered in daily life to explain the location of some of the topics and concepts of chemistry | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. gain the supplement knowledge to basic chemistry 2. synthesis the knowledge on science with the content of this course 3. learn and distinguish the content and type of knowledge on science 4. gain ability on research and learn scientific method 5. gain the ability to attain balance between oral, written and applied scientific activities 6. apply the content of this course on current subject   gain ability on teamwork | | | | | | |
| **TEXTBOOK** | | | | | Chemistry books | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Kimyanın Öyküsü (2000). Tübitak Popüler Bilim Kitapları, I. Basım.  2. 107 Kimya Öyküsü (1999).(Çeviri: Nihal Sarıer) Tübitak Popüler Bilim Kitapları | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Nature and chemistry, |
| 2 | Nature and chemistry, |
| 3 | Living and chemistry, |
| 4 | Living and chemistry, |
| 5 | chemistry of live, |
| 6 | ancient civilization of chemistry |
| 7-8 | MID-TERM EXAM |
| 9 | paint, |
| 10 | cosmetics, |
| 11 | polymers |
| 12 | polymers |
| 13 | biotechnology |
| 14 | biotechnology |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **x** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| 9 | Ability to explain natural events based on scientific basis. |  | **x** |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **x** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  | **x** |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Asiye BERBER

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171115126 | **COURSE NAME** | Scientific Research Methods |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | |  | | | | | |
| **Theory** | | **Practice** | | **Labratory** | | **Credit** | | **ECTS** | **TYPE OF COURSE** | | **LANGUAGE OF COURSE** |
| V | 2 | | 0 | | 0 | | 2 | | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | **General Culture Knowledge** | | | | **Elective Course** | | | | |
| %25 | | %50 | | %25 | | | | General Knowledge( ) Content Knowledge ( ) | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | | \_\_ | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Science and basic concepts (facts, knowledge, certain, true, false, universal knowledge, etc.), basic information about the history of science, the structure of scientific research, types of scientific research, scientific methods and different opinions about these methods, problem, research design, sampling, data collection and data collection methods (quantitative and qualitative data collection techniques), data recording and analyzing, interpretation and reporting, basic statistical information, examing articles and thesis. | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The purpose of this course is to understand theoretical knowledge in the context of course and using this knowledge to join the discussion, as a result a teacher candidate can prepare scientific research proposal report. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | | 1. Defining the basic concepts about scientific research methods.. 2. Refers to the importance of scientific research. 3. Obtaining information about the types and stages of research.  4. Explaining the process of writing a scientific research proposal.  5. Implementing the process of preparing a scientific research proposal.  6. Searching the literature and resources. 7. Preparing a scientific research proposal report. | | | | | | |
| **TEXTBOOK** | | | | | | Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş. ve Demirel, F. (2008). Bilimsel Araştırma Yöntemleri. Ankara: Pegem A Yayıncılık. | | | | | | |
| **OTHER REFERENCES** | | | | | | Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş. ve Demirel, F. (2008). Bilimsel Araştırma Yöntemleri. Ankara: Pegem A Yayıncılık.Karasar, N. (2007). Bilimsel Araştırma Yöntemi. Ankara: Nobel Yayınevi.Kaptan, S. (1998). Bilimsel Araştırma ve İstatistik Teknikleri. Ankara: Tekışık Web Ofset Tesisleri. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concepts, principals and approaches about scientific research |
| 2 | Types of research |
| 3 | Stages of the research process |
| 4 | Defining the research problem |
| 5 | Search and examine literature |
| 6 | Examine a thesis or article by the theoretical knowledge learned in this course |
| 7-8 | MID-TERM EXAM |
| 9 | Sampling methods |
| 10 | Data collection tools |
| 11 | Analyzing data and interpration |
| 12 | Reporting the research |
| 13 | Preparing a research proposal |
| 14 | Presenting the prepared research |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **X** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  | **X** |  |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **X** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | **X** |  |
| **5** | Ability to follow and interpret the contemporary issues |  | **X** |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **X** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  | **X** |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **X** |  |
| **9** | Ability to explain natural events based on scientific basis. |  | **X** |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **X** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **X** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  | **X** |  |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **X** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Munise SEÇKİN KAPUCU

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | [171115122](javascript:window_open('http://193.140.141.9:7777/pls/osmangaziuniversitesibilgisistemi/ASP.pageid_000097?param01=17111171115122A101128&param02=3312&param03=AC178&param04=12055662078',1)) | **COURSE NAME** | Science Education Laboratory Practices I |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY( X) ELECTIVE( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| 80 % | | 20 % | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 20 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | | 1 | | 20 |
| Report | | | | | 1 | | 20 |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | Practice | | | | | 1 | | 40 |
| **PREREQUIEITE(S)** | | | | | Lab coat | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The rules that should be obeyed and safety and security measures that should be considered in the laboratory. Cell and cell activities, using microscope, microscoping examination of plant and animal cell, photosynthesis and reactions of photosynthesis, examination of the root-stem- leaf and flowers of plants in the laboratory, human eye and modeling it, examination of the human body, force and motion, pressure of solids, liquids and gases, heat and temperature (experiment of boiling and freezing), experiment of boiling and condensing, electrolyse and experiments. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to lecture teacher candidates by using laboratory method and to gain the ability to design and implement experiments. To provide recognizing tools and materials used in the lesson. To develop power of practical thinking while carrying out an experiment. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | 1. Students will learn the safety and security measures that should be considered in the laboratory.  2. Students will increase their self-confidence, develop their knowledge and skills for a future career. Efficiency obtained from the course will be maximum. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Students will be able to design and implement open and closed-ended experiments in the laboratory.  2. Students will be able to discuss and report the experimental results.  3. Students will have the knowledge and skills for the use of laboratory.  4. Students will be able to design alternative experiments. | | | | | | | |
| **TEXTBOOK** | | | | | 1. Ekem N., Ütenler E., Balbag Z.- Anılan B.-Görgülü A., Fen-Bilgisi II Deney Föyü, Eskişehir Osmangazi Üniversitesi Eğitim Fakültesi 2. İlköğretim 6-7-8 Fen ve Teknoloji ders kitapları 3. Güneş, T. (Ed). (2006). Fen Bilgisi Laboratuar Deneyleri, Anı Yayıncılık, Ankara | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Özmen, H. ve Yiğit, N. (2005). Fen Bilgisi Öğretiminde Laboratuar Kullanımı, Anı Yayıncılık, Ankara  2. Source book for science teaching, Unesco | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | All experiment materials provided by DAYM in 6-7 and 8th grade classrooms. | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The rules that should be obeyed and safety and security measures that should be considered in the laboratory |
| 2 | Cell and cell activities, using microscope, microscoping examination of plant and animal cell |
| 3 | The experiment of examination corpuscle and blood group |
| 4 | Photosynthesis and reactions of photosynthesis |
| 5 | Microscoping examination of protists |
| 6 | Examination of the root-stem- leaf and flowers of plants in the laboratory |
| 7-8 | MID-TERM EXAM |
| 9 | Examination of human eye, ear, body and their models. |
| 10 | Examination of kidney, heart and DNA models. |
| 11 | Reagents and experiments of them |
| 12 | Experiment of force and motion |
| 13 | Pressure of solids, liquids and gases and experiments of them |
| 14 | Heat and temperature (experiment of boiling and freezing), experiment of boiling and condensing |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | **x** |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| 9 | Ability to explain natural events based on scientific basis. | **x** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **x** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. M. Zafer BALBAĞ

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **SEMESTER** | FALL |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171115117 | **COURSE NAME** | SPECIAL TOPICS IN PHYSICS |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| V | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X ) ELECTIVE ( ) | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Semiconductors: Diode, transistor, solar cells and the field of its usage, lasers. Superconductivity and the field of its usage. X-Rays: Structure, the use in chemical analysis and quality control. The instrument of communication technology: Computers and its components, Integrated circuits, fiber optics, different physical sensors (optics, thermal, pressurized, electrical, magnetic based) Integrated circuits, Numerical (digital) systems, Nanotechnology. Visualization techniques and instruments: Ultrasound, Nuclear Magnetic Resonance, Tomography, Scintigraphy, Electron and scanning electron microscope. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to show the industrial and technological application of physics | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be able to understand the concepts of modern physics and to be able to apply and use the gained knowledge in daily life interdisciplinary fields, correlate directly with technology and industry and to have the skill explain to other people | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this module students will be able to:   1. Learn semiconductors and their importance in computer technology, 2. Explain superconductivity 3. Learn nanotechnology 4. Learn laser 5. Know visualization techniques and instruments: | | | | | | |
| **TEXTBOOK** | | | | | 1. Beiser A. Concepts of modern physics, McGraw-Hill | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Serway, R.A. (1990). Physics for Scientists and Engineers. Philadelphia: Saunders College Publishing 2. Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. (1996). Physics for Scientists and Engineers. Prentice Hall, Inc. 3. Bueche, F., Technical Physics,Harper&Row, Publishers, NewYork | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculater | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Semiconductors, |
| 2 | Diod, Transistors, Solar cells |
| 3 | Laser |
| 4 | Superconductivity |
| 5 | X-Rays: Structure, Formation and the effect on living |
| 6 | X-Rays: The usage of them on chemical analysis and quality control |
| 7-8 | MID-TERM EXAM |
| 9 | Equipment of communication technology, Computers and integrated circuits |
| 10 | Equipment of communication technology: Digital systems and fiber optics |
| 11 | Different physical sensors (optics, thermal, pressurized, electrical, magnetic based) |
| 12 | Visualization techniques and instruments: Ultrasound, Nuclear Magnetic Resonance, Tomography, |
| 13 | Visualization techniques and instruments: Scintigraphy, Electron and scanning electron microscope |
| 14 | Nanotechnology |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **X** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| **9** | Ability to explain natural events based on scientific basis. | **X** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| **15** | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr Zafer BALBAĞ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171115127 | **COURSE NAME** | Human Anatomy and Physiology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| V | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description of anatomy and physiology, organ systems: nutrition and metabolism, digestion system, circulatory system, excretory system, respiratory system, female reproduction system and menstruation circle, male reproduction system, fertilization and embryologic development stages, musculoskeletal system, endocrine system,nervous system and sense organs. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Human body organs and systems belonging to examine the anatomical and morphological | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learning system structure and functions 2. Learning system definition and concept 3. Understanding human body organization 4. Understanding the homeostatic equilibrium between systems. | | | | | | |
| **TEXTBOOK** | | | | | Aktümsek A.,2006, Anatomi ve Fizyoloji: İnsan Biyolojisi, | | | | | | |
| **OTHER REFERENCES** | | | | | 1.İnsan Anatomisi ve Fizyolojisine Giriş, Eldra Pearl Solomon,  2. test sheets prepared by the Instructors | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, Projector, Models | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description of anatomy and physiology |
| 2 | Organ systems: nutrition and metabolism, digestion system |
| 3 | Motion system (skeletal) |
| 4 | Motion system (muscle) |
| 5 | Respiratory system |
| 6 | Digestive system |
| 7-8 | MID-TERM EXAM |
| 9 | Circulatory system |
| 10 | Excretory system |
| 11 | Nervous system |
| 12 | Sense organs |
| 13 | Endocrine system |
| 14 | Reproduction system |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **x** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues |  | **x** |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. |  |  | **x** |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof.Dr. Cansu FİLİK İŞÇEN

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 171115119 | **COURSE NAME** | Statistics |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 0 | 0 | | | 2 | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary Mathematics Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| %75 | | %25 | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | Set theory and sample space, permutation and combination, basic concepts in probability theory ( addition rule and multiplication rule, Bayes’ theorem), random variables, probability functions, expected value and moments, discrete probability distributions (Bernoulli, Binomial, Hypergeometric, Poisson distributions), distributions of continuous random variables ( normal distribution, exponential distribution, gamma distribution, chi-square distribution), functions of random variables, sampling distributions ( t-distribution, F distribution, central limit theorem) | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The purpose of this course is to teach preservice teachers basic concepts of probability and statistics and methods of calculation. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1. to have information about set theory and sample space. 2. to have information about basic concepts of permutation, combination and probability theory. 3. to have information about random variables and their properties. 4. to have information about probability functions. 5. to have information about expected value and moments. 6. to have information about discrete probability distributions. 7. to have information about distributions of continuous random variables. 8. to have information about functions of random variables. 9. to have information about sampling distributions. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | |  | | | | | | | |
| **TEXTBOOK** | | | | | AKDENİZ, F. (2011).Probability and Statistics, Adana: Nobel Publications | | | | | | | |
| **OTHER REFERENCES** | | | | | DEMİR, H. (2007). Probability, 2nd Edition, Ankara: Nobel Publications.SERPER, Ö. (2000). Applied Statistics-I, 4th Edition, Bursa: Ezgi BookstoreYILMAZ, B. (2010). Statistics, Ankara: Nobel Publications | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Set Theory |
| 2 | Basic concepts of permutation, combination and probability theory |
| 3 | Random variables and their properties |
| 4 | Probability functions |
| 5 | Expected value and moments |
| 6 | Discrete probability distributions |
| 7-8 | MID-TERM EXAM |
| 9 | Distributions of continuous random variables |
| 10 | Normal distribution |
| 11 | Exponential distribution |
| 12 | Gamma and Chi-square distribution |
| 13 | Functions of random variables |
| 14 | Sampling distributions |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **x** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues |  | **x** |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. |  |  | **x** |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  |  | **x** |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Ersin KARADEMİR

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

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171115118 | **COURSE NAME** | **Special topics in Chemistry** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X ) ELECTIVE ( ) | |  | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| X | |  | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Content of the course is as follows: Air pollution (acid rains, prevention and fogy pollution). Chemical regard to health and food. Enthalpy sources of the world. Greenhouse gases and importance. Drinking water to river water. Glasses and ceramics. Relation of chemistry and visual art. Photography chemistry. Corrosion chemistry and importance. Biological process and equilibrium. Medicine treatment and chemistry (blood chemistry). Chemical cleaning materials and correct using Matter with carbon. Chemistry on the living process, environmental and environmental. Chemical pollution, nuclear energy. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to show the industrial application of chemistry | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | To be able to understand the concepts of chemistry and to be able to apply and use the gained knowledge in daily life interdisciplinary fields, correlate directly with technology and industry and to have the skill explain to other people | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. learn application and using of chemistry in industry. 2. Apply and link the gained knowledge of natural sciences to interdisciplinary fields. 3. Correlate and apply gained knowledge directly with technology and industry. | | | | | | | |
| **TEXTBOOK** | | | | | Kimyada Özel Konular,2009 Hüseyin Bağ | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Gündüz, T. (2000), Çevre Sorunları, Ankara: Gazi Kitabevi 2. Gündüz, T. Çevre Bilimi  ChemCom (Chemistry in Community), American Chemical Society | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Air pollution (acid rains, prevention and fogy pollution). |
| 2 | Enthalpy sources of the world. Greenhouse gases and importance |
| 3 | Chemical regard to health and food. |
| 4 | . Drinking water to river water |
| 5 | . Glasses and ceramics. Relation of chemistry and visual art. |
| 6 | Photography chemistry. Corrosion chemistry and importance |
| 7-8 | MID-TERM EXAM |
| 9 | . Biological process and equilibrium. |
| 10 | Medicine treatment and chemistry (blood chemistry ). |
| 11 | Chemical cleaning materials and correct using. |
| 12 | Matter with carbon. |
| 13 | Chemistry on the living process, |
| 14 | environmental and environmental problems. Chemical pollution, nuclear energy |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **X** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. | **X** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Asist. Prof. Dr. Asiye BERBER

**Signature**:  **Date**

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171115125 | **COURSE NAME** | Instructional Technology And Material Development |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** | |
| V | 2 | | 2 | 0 | | | 3 | 6 | | COMPULSORY (X ) ELECTIVE | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Sciences** | | | | **Science Teaching** | | | | | | **Social Science** |
|  | | X | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | | **%** |
| Mid-Term | | | | 1 | | | 30 |
| Quiz | | | |  | | |  |
| Homework | | | | 1 | | | 30 |
| Project | | | |  | | |  |
| Report | | | |  | | |  |
| Others (………) | | | |  | | |  |
|  | | | |  | | |  |
| **FINAL EXAM** | | | | |  | | | | 1 | | | 40 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The characteristics of various instructional Technologies, their place and use in the instructional process, the development of instructional materials by means of the instructional technologies and the evaluation of materials of varied qualities. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The characteristics of various instructional Technologies, their place and use in the instructional process, the development of instructional materials by means of the instructional technologies and the evaluation of materials of varied qualities. | | | | | | | |
| **CONTRIBUTION OF THE COURSE TO PROVISION OF PROFESSIONAL EDUATION** | | | | | The instructional process is organized with instructional methodologies and instructional technology materials. The teaching ability is dependent on the teacher’s being able to use the instructional methodologies and materials. With the use of instructional materials, the instruction gets more effective and fruitful. Therefore, the instructional materials hold an important place in the development of teaching skills. | | | | | | | |
| **COURSE OUTCOMES** | | | | | Students will be able to   1. explain the conceptual and theoretical foundations of instructional technologies and materials design. 2. explain the importance and benefits of using instructional technologies in the educational process. 3. utter the characteristics of various instructional technologies in their specializations. 4. explain the principles of the instructional technologies and materials design. 5. design and develop the necessary instructional materials in their own specializations. 6. choose the most appropriate instructional materials by considering the factors having an important role in the selection of the instructional materials in their specializations. 7. develop positive attitudes for using the instructional materials in their respective specializations 8. evaluate the various kinds of instructional technologies or materials developed in their specializations. | | | | | | | |
| **TEXTBOOK** | | | | | The textbooks for the instructional technologies and materials development | | | | | | | |
| **OTHER REFERENCES** | | | | | Öğretim Teknolojileri Ve Materyal Geliştirme, H. İbrahim YALIN, Nobel Yay.  Öğretim Teknolojileri Ve Materyal Geliştirme, İsa HALİS, Nobel Yay.  Öğretim Teknolojileri Ve Materyal Geliştirme, Rauf YILDIZ, Nobel Yay.  Öğretim Teknolojileri Ve Materyal Geliştirme, Özcan DEMİREL, Pegem Yay.  Öğretim Teknolojileri Ve Materyal Geliştirme, Aytekin İŞMAN, Pegem Yay.  Öğretim Teknolojileri Ve Materyal Geliştirme, Zeki KAYA, Pegem Yay.  Özel Öğretim Teknolojileri Ve Materyal Geliştirme, Salih UŞUN, Pegem Yay.  Öğretim Teknolojileri Ve Materyal Geliştirme, Tuğba YANPAR, Anı Yay.  Öğrenme Öğretme Teknikleri Ve Materyal Geliştirme, Çetin BAYTEKİN, Anı Yay.  Eğitim Teknolojileri, Cevat ALKAN, Anı Yay.  Öğretim Teknolojileri ve Materyal Geliştirme, Ö. Demirel; E. Altun, Pegem Yay.  Öğretim Teknolojileri ve Materyal Geliştirme, Salih Uşun, Pegem Yay. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Data projector, computer, internet, overhead projector and other instructional Technologies and materials to be used for this field | | | | | | | |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **X** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. | **X** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist Prof. Dr. Ersin KARADEMİR

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171115121 | **COURSE NAME** | Turkish Educational History |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| V | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish | |
| **COURSE CATEGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | | %70 | | | |  | | | | | | %30 |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 50 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | Homework | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Mega trends and problems related to education; Teacher education; school management; curriculum development; quality issues in education; educational finance; technology in education, instructional methods, school-community relations; multicultural education; national and international restructuring and reform efforts in educational; historical foundations of Turkish educational system; Turkish school law; structure of the Turkish education system; basic educational system; secondary education; higher education system; vocational and technical education; organizational and administrative structure of Turkish education system; structure of the Turkish Ministry of education; the role of supervision in Turkish educational system. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1. to analyze educational policies 2. to recognize the special problems of the Turkish education system 3. Educational planning and social mobility, to examine educational system and the major management problems 4. to identify the key issues related to education 5. to analyze the results of the main problems related to education and resources 6. to see the dimensions of problems related to education, social, cultural, political, economic, psychological, philosophical, managerial, technological and so on. 7. to use the scientific method for detecting and solving problems related to education, 8. to solve problems and develop recommendations related to education-oriented projects | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of the course students should be able to:   1. Understand basic issues in educational systems in Turkey and around the world. 2. Understand historical and legal foundations of Turkish educational system. 3. Understand the structure of Turkish educational system. 4. Know subsystems of Turkish educational system. 5. Identify educational issues and provide alternative solutions to them. 6. Provide and develop projects related to issues in education. | | | | | | | |
| **TEXTBOOK** | | | | | Ada, S. & Baysal, Z. N. (2009). Çeşitli yapıları ve yönetimleri açısından çeşitli ülkelere bir bakış. Pegem yayınları. Ankara.  Ada, S. & Baysal, Z. N.(2010) Türk Eğitim Sistemi ve okul yönetimi, Pegem Akademi yayınları. Ankara.  Apple, M. W. (2006). Eğitim ve iktidar.. (Çev: Ergin Bulut).Kalkedon yayınları.İstanbul.  Balcı, A. (ed.) (2009). Karşılaştırmalı eğitim sistemleri. Pegem Yayınları, Ankara.  Babüroğlu, O. N. (ed.) (2003). Eğitimin geleceği. Üniversitelerin ve eğitimin değişen paradigması. Sabancı Üniversitesi yayınları. İstanbul.  Bourdieu, P. (1990). Reproduction in education, society and culture. Sage publication, London.  DPT. Kalkınma Planları | | | | | | | |
| **OTHER REFERENCES** | | | | | Hoy, W.K. & Miskel, G. C. (2010) Eğitim yönetimi, teori, araştırma ve uygulama. (Turan, S. çeviri ed.). Nobel Yayın Dağıtım. Ankara.  Kaya. Y. K. (1993). İnsan yetiştirme düzenimiz. Yeni bir bakış Bilim yayınları, Ankara.  MEB. Hükümet Programlarında Eğitim  MEB. Kalkınma Planlarında Eğitim.  Olssen, M.& Codd, J. (2004). Education policy: globalization, citizenship and democracy. Sage publication. London  Şişman, M. & Taşdemir, İ. (2008). Türk eğitim sistemi ve okul yönetimi, Pegem Akademi yayınları, Ankara.  Shor , I. & Pari, C. (ed. ) (1999). Education is politics. Critical teaching across differences, K-12: United States. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Giving information about the course content |
| 2 | Analysis of education policy |
| 3 | Special problems of the Turkish education system |
| 4 | Educational planning and social mobility |
| 5 | Fundamental problems related to education |
| 6 | The results of the main problems related to education and resources |
| 7-8 | MID-TERM EXAM |
| 9 | Approaches to planning and organization of the education system |
| 10 | Problems related to education, social, cultural, political and economic dimensions |
| 11 | Problems related to education, psychological, philosophical, managerial and technological dimensions |
| 12 | Structure and functioning of education system in Turkey to develop solutions to problems related to |
| 13 | Diagnosis of the problems related to education and the scientific method |
| 14 | Solving problems related to education-oriented projects and develop proposals |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **X** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| 9 | Ability to explain natural events based on scientific basis. | **X** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| 15 | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. İlknur ŞENTÜRK

**Signature**:  **Date**



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171116119 | **COURSE NAME** | Nature of Science and Science History |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 3 | | 0 | 0 | | | 3 | 4 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| % 90 | | % 10 | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 10 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | | 1 | 20 |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | What is science? Origins of science, basic eras of scientific improvement, general properties of scientific knowledge, description of science history and importance, conditions to be science of something, science in the first civilizations: in Egypt, in Mesopotamia, in India, in China, science in archaic Greek World, science in middle ages: science in Christian and Islamic World, contributions to science of Turks in middle ages, science in Modern ages: science in the Renaissance era, science in 17. 18. 19. and 20 centuries, science in the Republican Era. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Historical improvements of scientific works from the past to the present, to introduce of science people whose achieved contribution to science and was been successful their branch, to define their conception frames, to explain how our present day was affected by created scientific works in the past | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | 1. Establish relations between present day and past, master scientific developments.  2. Give an example from lives of scholars and their philosophies in their courses. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Understand the basic natures of science.  2. Know the scientific works according to their era.  3. Realize the scientific innovation and invention.  4. Understand the contributions of scientific work to the society.  5. Understand the necessity of maintaining of scientific works. | | | | | | |
| **TEXTBOOK** | | | | | 1.Topdemir, H.G.; Unat, Y.; Bilim Tarihi, Pegem Yayıncılık, 2009. | | | | | | |
| **OTHER REFERENCES** | | | | | **1.**Yıldırım, C.; Bilim Tarihi, Remzi Kitapevi, 2009  2. Ronan, C. A. (2005). Çevirenler: Prof Dr. Ekmeleddin İhsanoğlu ve Prof. Dr. Feza Gunergun. Bilim Tarihi. Aydoğdu Matbbası. Ankara  3. Tekeli ve arkadaşları. (2007). Bilim Tarihine Giriş. Nobel Yayın Dağıtım | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | CDs and DVDs about Science History. | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | What is science? Origins of science, basic eras of scientific improvement |
| 2 | General properties of scientific knowledge, description of science history and importance, conditions to be science of something, |
| 3 | Science in the first civilizations: in Egypt, in Mesopotamia, in India, in China, |
| 4 | Science in archaic Greek World |
| 5 | Science in middle ages: science in christian World |
| 6 | Science in middle ages: science in Islam World |
| 7-8 | MID-TERM EXAM |
| 9 | Contributions to science of Turks in middle ages |
| 10 | Science in Modern ages: science in the Renaissance era |
| 11 | Science in 17. 18. centuries |
| 12 | Science in 19. century |
| 13 | Science in 20. century |
| 14 | Science in the Republican Era. |
| 15-16 | FINAL EXAM |

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| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **x** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues |  | **x** |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  | **x** |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. |  | **x** |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc.. Prof. Dr. M. Zafer Balbağ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171116120 | **COURSE NAME** | Environmental Science |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 3 | | 0 | 0 | | | 3 | 4 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Environment: Historical development of environmental sciences. Human and environment, population and environment, Regional and local environmental problems: Water, soil and air pollution, radioactiv pollution and other pollution resources. Biological species and situation in Turkiye: Flora and Fauna. Endemic animal and plants species in Tukiye, living species under threath, Environmental organizations and activities, environmental education, continuing develpoment | | | | | | |
| **COURSE OBJECTIVES** | | | | | The purpose of lecture is introducing environment and factors that form the necessary element for environment in which it can be lived. Learning responsibilities about environment pollution, harms and protecting environment. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. be able to learn environment and historical development of environmental science. 2. be able to know pollution resources 3. be able to understand biological wealth in Turkiye 4. be able to know environmental organizations and activities 5. The role of human in environment pollution 6. Indinidual necessities on environment pollution and precaution | | | | | | |
| **TEXTBOOK** | | | | | 1. Kocataş A., 1996,Ekoloji Çevre Biyolojisi Ege Üniversitesi Basımevi 2. Gökmen S. 2007, Genel Ekoloji Nobel Yayın. | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Egemen Ö., 2000, Çevre ve Su Kirliliği, Ege Üniversitesi, Su Ürünleri Fakültesi Yayınları 2. Gündüz T., 1994, Çevre Sorunları 3. Akman Y., 2000, Çevre Kirliliği, Çevre Biyolojisi   6.Şahin.Y. (2002).Ekoloji. Eskişehir. Bilim Teknik Kitapevi | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic Ecological Concepts |
| 2 | Autecology  Abiotic factors |
| 3 | Biotic Faktors |
| 4 | Population Ecolgy  Population and Structural Properties |
| 5 | Population Dynamics |
| 6 | Community and Features |
| 7-8 | MID-TERM EXAM |
| 9 | Ecosystem and Features |
| 10 | World's Great Ecosystems and distributions |
| 11 | Ecological Problems of Humanity |
| 12 | Environmental Pollution and Control |
| 13 | The Nature Conservancy |
| 14 | New Approaches to Environmental Protection |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **x** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞÇEN

**Signature**:

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171116124 | **COURSE NAME** | Science Education Laboratory Practices II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VI | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
| % 80 | | % 20 | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 20 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | | 1 | | 20 |
| Report | | | | | 1 | | 20 |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | Practice | | | | | 1 | | 40 |
| **PREREQUIEITE(S)** | | | | | Need to laboratory coat | | | | | | | |
| **COURSE DESCRIPTION** | | | | | The concept of the static electricity and the concepts of electroscope, electrical current, potential, resistance, short circuit, Ohm's Law, amper meter, voltmeter, Avometer recognition of measuring devices, the concepts of direct current and alternative current, a simple electrical circuit, a simple battery construction, storage batteries and their characteristics, electrical bell and telegraph, electric motors and parts, magnetism, magnet and its poles, electromagnet, electromagnetic induction, the transformer and its structure, the concept of optic, general characteristics of light, reflection laws, planar mirror and its characteristics, the image on parallel and intersecting planar mirror, refraction laws and the characteristics of light’s transition from the prism, spherical mirror and its characteristics, convex and concave lenses and their characteristics, acids, bases and salt solution experiments, the separation of compounds/mixtures and its experiments, electrolysis of water | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1.To give the prospective teachers the ability to lecture using the method of laboratory, design and implement experiments  to make them recognize the tools and materials  2.to develop the power of thinking practical while making experiments | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | 1) The students will learn the rules of laboratory safety and security considerations.  2) The student will increase his self-confidence, develop his skills and knowledge for future career and the course efficiency will be maximized. | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) Students will design close and open-ended experiments in laboratory and implement.  2) Students will discuss the results of experiment and report them.  3) Students will have knowledge and skills about using laboratory.  4) Students will design alternative experiments. | | | | | | | |
| **TEXTBOOK** | | | | | 1. Ekem N., Ütenler E., Balbag Z.- Anılan B.-Görgülü A., Fen-Bilgisi II Deney Föyü, Eskişehir Osmangazi Üniversitesi Eğitim Fakültesi 2. İlköğretim 6-7-8 Fen ve Teknoloji ders kitapları 3. Güneş, T. (Ed). (2006). Fen Bilgisi Laboratuar Deneyleri, Anı Yayıncılık, Ankara | | | | | | | |
| **OTHER REFERENCES** | | | | | **1.**Özmen, H. ve Yiğit, N. (2005). Fen Bilgisi Öğretiminde Laboratuar Kullanımı, Anı Yayıncılık, Ankara 2. Source book for science teaching, Unesco | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | All experiment tools using at 6, 7, 8. class | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | The concept of the static electricity and the concepts of electroscope |
| 2 | Electrical current, potential, resistance, short circuit, Ohm's Law, ampermeter, voltmeter, Avometer recognition of measuring devices, the concepts of direct current and alternative current, a simple electrical circuit |
| 3 | A simple battery construction, storage batteries and their characteristics, electrical bell and telegraph, electric motors and parts |
| 4 | Magnetism, magnet and its poles, electromagnet, electromagnetic induction |
| 5 | The transformer and its structure |
| 6 | The concept of optic, general characteristics of light, reflection laws, planar mirror and its characteristics, the image on parallel and intersecting planar mirror |
| 7-8 | MID-TERM EXAM |
| 9 | Refraction laws and the characteristics of light’s transition from the prism |
| 10 | Spherical mirror and its characteristics |
| 11 | Convex and concave lenses and their characteristics |
| 12 | Acids, bases and salt solution experiments |
| 13 | The separation of compounds/mixtures and its experiments |
| 14 | Electrolysis of water |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | **x** |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| 9 | Ability to explain natural events based on scientific basis. | **x** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **x** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. M. Zafer Balbağ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171116118 | **COURSE NAME** | Genetic and Biotechnology |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 2 | | 2 | 0 | | | 2 | 2 | COMPULSORY ( X ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | |  |  |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description of genetics and biotechnology, fields, importance, effects to our life and a birief hisrory of genetics and biotechnology. Origination of modern genetic science: Mendel hypotesis, hybridization, deviations from Mendel hypothesis, cytoplasmic inheritance. Natural selections, adaptations, mutations. Molecular biology. Gene technology: molecular genetics. Human genetics and genetic disorders. Populational, scientific nad technological opportunities of genetic engineering. Essential principles of biotechnology: microorganism metabolism, plant-animal cell cultures, fermantation and fermantation technology, basic procedures in biotechnology. Biotechnological applications: microbial biomass production (baker’s yeast, protozoa proteins), production of primer metabolites 8citric acid, fumaric acid, acetic acid, aminoacid, vitamin), fermantation (alcohololik fermantation, production of lactic acid, butric acid, buthanol, aceton), production of seconder metabioltes (antibiyotics), enzyme production, gene biotechnology, environmental biotechnology. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The aim of the course is to give the description of genetics and biotechnology, its fiels, importance and historcal development. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | |  |  |  |  | | --- | --- | --- | --- | | Upon successful completion of this course, the students will be able to;   1. define the genetics and the biotechnology, tell the historical evolution, | 1,2,3,4 | A,B |  | | **2)** explain Mendel’s law and identify deviations from this law, | 1,2,3,4 | A,B |  | | **3)** explain the cytoplasmic heredity, | 1,2,3,4 | A,B |  | | **4)** explain and relate the natural selection, the adaptation and the mutation, | 1,2,3,4 | A,B |  | | **5)** explain the molecular biology and working area, | 1,2,3,4 | A,B |  | | **6)** explain application areas of the gene technology and the molecular genetics with examples, | 1,2,3,4 | A,B |  | | **7)** tell the basic differences of the microorganisms metabolism, | 1,2,3,4 | A,B |  | | **8)** explain basic processes in biotechnology, | 1,2,3,4 | A,B |  | | **9)** estimate biotechnological applications in the future. |  |  |  | | | | | | | |
| **TEXTBOOK** | | | | | 1) Baran Ş, genetik ve boyoteknoloji (Basılmamış Ders Notları) | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Description of genetics and biotechnology |
| 2 | Origin of modern genetics scienc |
| 3 | Mendel’s law, hybridization |
| 4 | Cytoplasmic heridenc |
| 5 | Natural selection, adaptations, mutation |
| 6 | Molecular biology, gene technolog |
| 7-8 | MID-TERM EXAM |
| 9 | Molecular genetics |
| 10 | Basic principles of biotechnolog |
| 11 | Basic principles of biotechnolog |
| 12 | Microorganisms metabolism |
| 13 | Plant-animal cell culture |
| 14 | Fermantation and fermantation technology, basic processes in biotechnolog |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **x** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞCEN

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

 **ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171116125 | **COURSE NAME** | MEASUREMENT AND EVALUATION |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VI | 3 | | 0 | 0 | | | 3 | 5 | COMPULSORY () ELECTIVE (x) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Mechanical Engineering Profession**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | | X | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | |  |  |
| 2nd Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 40 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | Psychometric techniques that use in primary schools; achievement tests, observation forms, self-assessment, peer-assessment, portfolio, control lists, rubrics and other techniques. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Comprehension the psychometric techniques that use in primary schools. Development and administration psychometric instruments | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | Knows the purpose of use of psychometric instruments, develops a proper psychometric instrument. | | | | | | |
| **TEXTBOOK** | | | | | Halil Tekin, Eğitimde Ölçme ve Değerlendirme, Yargı Yayınevi. | | | | | | |
| **OTHER REFERENCES** | | | | | Fuat Turgut, Yaşar Baykul, Eğitimde Ölçme ve Değerlendirme, Pegem Akademi, Deha Doğan, Ömer Kutlu, İsmail Karakaya, Öğrenci Başarısının Belirlenmesi, Adnan Erkuş, Sınıf Öğretmenleri İçin Ölçme ve Değerlendirme, Ekinoks. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introducing |
| 2 | Basic terms (measurement, types of measurement, types of scales and their properties, evaluation). |
| 3 | Validity, techniques to determine validity of a psychometric instrument. Usefulness. |
| 4 | Review the primary school curriculums. |
| 5 | Developing achievement tests. |
| 6 | Preparing review forms. |
| 7 | Preparing self-assessment forms. |
| 8 | Preparing peer-assessment forms |
| 9 | Portfolio assessment. |
| 10 | Developing control lists. |
| 11 | Developing gradation scales. |
| 12 | Developing rubrics. |
| 13 | Other psychometric techniques. |
| 14 | Administrating the psychometric instruments, and interpretation the results. |
| 15-16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | **x** |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **x** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **x** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| 9 | Ability to explain natural events based on scientific basis. | **x** |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. | **x** |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | **x** |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary | **x** |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Ersin KARADEMİR

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171116127 | **COURSE NAME** | Special Teaching Methods - I |

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| **SEMESTER** | | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VI | | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( X ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Basic Science** | | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** | |
|  | | |  | | | | x | | | | |  | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** | |
| Mid-Term | | | | |  |  | |
| Quiz | | | | |  |  | |
| Homework | | | | | 1 | 50 | |
| Project | | | | |  |  | |
| Report | | | | |  |  | |
| Others (………) | | | | |  |  | |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 50 | |
| **PREREQUIEITE(S)** | | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Science education, basic aims of the science education, scientific literacy, concept teaching (misconceptions, concept mapping, concept cartoons, vee-diagrams, etc) , methods and materials used in science teaching, examining the science program about 4-8 classes (topics, learning outcomes, learning situations and assessment techniques) , evaluation of the lesson, teacher and practice science books | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | To acquaint students with main aims of science teaching, science and technology curriculum and which teaching methods used in science teaching. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | | Upon successful completion of this course, the students will be able to;   1. Earn and use the special teaching methods, 2. Learning theories and use them in practice 3. Prepare instructional materials and use them in practice, 4. Design instructional activities and experiments and use them in practice. | | | | | | | |
| **TEXTBOOK** | | | | | | 1. İlköğretim Fen ve Teknoloji Dersi Öğretim Programı ve Kılavuzu (2006). Ankara: MEB Yayınları. 2. Çepni ve diğerleri (2005). Fen ve Teknoloji Öğretimi. Ankara: PegemA Yayıncılık. 3. Bahar ve diğerleri (2006). Fen ve Teknoloji Öğretimi. Ankara: PegemA Yayıncılık | | | | | | | |
| **OTHER REFERENCES** | | | | | | 1. Bağcı Kılıç (2006). Yeni Yaklaşımlar Işığında İlköğretim Bilim Öğretimi. İstanbul: Morpa Yayıncılık. 2. [İlköğretim Fen Öğretimi (1997). YÖK- Ankara: Dünya Bankası. 3. Ekiz (2001). İlköğretimde Fen Bilimi Öğretimi ve Öğrenimi. Trabzon: Derya Yayınevi. 4. Demirel ve diğerleri (2007). Eğitimde Yeni Yönelimler. Ankara: PegemA Yayıncılık. | | | | | | | |
| **COURSE SYLLABUS** | | | | | | | | | | | | |
| **WEEK** | **TOPICS** | | | | | | | | | | | |
| 1 | Science, historical development and properties of the science, kinds of scientific knowledge | | | | | | | | | | | |
| 2 | Science education, fundamental aims of science education, science and technology literacy | | | | | | | | | | | |
| 3 | Fundamental philosophy and introduction of the science and technology programs, micro teaching applications | | | | | | | | | | | |
| 4 | Learning, teaching and instruction concepts, learning theories and using them in science education, micro teaching applications | | | | | | | | | | | |
| 5 | Piagets learning theory and example of applications, micro teaching applications | | | | | | | | | | | |
| 6 | Bruner, Gagne and Ausubels learning theories and example of applications, micro teaching applications | | | | | | | | | | | |
| 7-8 | MID-TERM EXAM | | | | | | | | | | | |
| 9 | Learning cycle approach and example of applications, micro teaching applications | | | | | | | | | | | |
| 10 | Constructivist learning theory and its properties, micro teaching applications | | | | | | | | | | | |
| 11 | Constructivist learning theory and its properties, micro teaching applications | | | | | | | | | | | |
| 12 | Teaching models of constructivist learning theory (4E, 5E and 7E) and example of applications, micro teaching applications | | | | | | | | | | | |
| 13 | Multiple intelligence theory and example of applications, micro teaching applications | | | | | | | | | | | |
| 14 | Concept teaching, its importance and concept developing processes, micro teaching applications | | | | | | | | | | | |
| 15-16 | FINAL EXAM | | | | | | | | | | | |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **x** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Munise SEÇKUN KAPICI

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171116126 | **COURSE NAME** | Community Services Practices |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VI | 1 | | 2 | 0 | | | 2 | 4 | COMPULSORY (X ) ELECTIVE () | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | |  | | | |  | | | | | | %100 |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | |  | |  |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | | 1 | | 30 |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 70 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Importance of community services applies; to determine current problems of community and to prepare projects for solving those problems; to attend science activities like panel, conference, congress, symposium as viewer, speaker and editor; To attend different projects voluntarily in meaning of social responsibility; The basic information and skills that are about application of community services at schools. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Cognition of the community services applies and making works about aims that are related to those subject in social studies curriculums; association between its discipline and others with a holistic approach and enrichment of pupils’ life about that topic by developing sensitivity to social necessities. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this course students should be able to;   1. Explain importance of community service applies. 2. Relate school and social environment. 3. Debate social problems. 4. Identify social problems related their field. 5. Develop positive attitude about participating to community service applies. 6. Develop project indented at social problems. | | | | | | | |
| **TEXTBOOK** | | | | | 1. Aksoy, B. (Ed) Topluma hizmet uygulamaları, | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of lesson content and review of society and social concepts. |
| 2 | Importance of community servıces practıces |
| 3 | Argument of the point that which areas can be suitable for community service applies and what is the importance of those applies. |
| 4 | Determined problem of society up-to-date and prepared Project to solve this problem |
| 5 | Determined problem of society up-to-date and prepared Project to solve this problem |
| 6 | Participate in panel, lecture, congress, symposium |
| 7-8 | MID-TERM |
| 9 | Participate in various project willingly |
| 10 | Had knowledge and ability about practice of community servıces practıces in school |
| 11 | Participate in society Project with their knowladge and experience |
| 12 | Shane siciety Project which participate |
| 13 | Help student in study time and help old people handicspped person, homeless children |
| 14 | Help student in study time and help old people handicspped person, homeless children |
| 15-16 | FINAL |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  |  | **X** |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **X** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty | **X** |  | **X** |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  |  | **X** |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| **9** | Ability to explain natural events based on scientific basis. |  |  | **X** |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. | **X** |  |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **X** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| **15** | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. S. Deniz KORKMAZ



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171116128 | **COURSE NAME** | Geology |

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| **SEMESTR** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | **LANGUAGE** |
| VI | 2 | | 0 | 0 | | | 2 | 3 | | COMPULSORY ( X ) ELECTIVE () | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Master degree**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| (√) | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | **Quantity** | | **%** |
| Mid-Term | | | |  | |  |
| Quiz | | | |  | |  |
| Homework | | | | 1 | | 40 |
| Project | | | |  | |  |
| Report | | | |  | |  |
| Others (………) | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | None | | | | | | |
| **COURSE DESCRIPTION** | | | | | The Definiton and content of geology. General information about Earth: Shape and dimension of earth, motion of earth,  geosphere , temperature of inner core, gravitation and izostazi, age of the earth. Composition of earth’s crust: Minerals,  description and properties. Important minerals which form rock: Rocks, description and general information, igneous  rocks, metamophism and metamorphic rocks, sedimentary rocks, disintegration (destruction) and soil, disintegration  (destruction) types, the condition of soil formation . Tectonic motion: orogenic motions, epirogenic motions, faults,  volcanoes, earthquakes. Stratigraphy: general principles, geological times. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Gaining the basic concepts of geology, general knowledges of the Earth, materials of the Earth, tectonic movements of the Earth, formation of the soil, concept of stratigraphy and general specialities of the geological times | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | 1) describes the basic concepts of geology.  2) Explains the shape and definitions of the Earth.  3) evaluates the movements and the results of these movements.  4) explains the general knowledges of the Earth’s layers.  5) explains the minerals and schist.  6) classifies schist types.  7) explains the mechanisms of orogenic and epirogenic movements.  8) explains the volcanism’s mechanism and effects of the Earth.  9) Evaluates the connections between earthquake and heaves.  10) explains the concepts of the soil, mechanism of soil formation and soil types.  11) explains the concept of stratigraphy and main principles.  12) explains the history and geological times of the Earth. | | | | | | |
| **TEXTBOOK** | | | | | -Güngördü, E. (2010). Eğitim Fakülteleri için yer bilimleri. Ankara: Gazi Kitabevi.  - Doğanay, H. (2005). Fen Bilimlerinde Özel Konular 2 Yer Bilimi. İstanbul: Aktif Yayınevi. | | | | | | |
| **OTHER REFERENCES** | | | | | -Güney, E. (2011). Yer bilim 2 Jeomorfoloji. İstanbul: Literatür Yayınları. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | atmosphere |
| 2 | The Earth-Materials of the Earth |
| 3 | Minerals and schists |
| 4 | Volcanism |
| 5 | Eathquakes and erosion |
| 6 | Global climate changing |
| 7-8 | MID-TERM EXAM |
| 9 | Geological times and The Earth |
| 10 | Botanics and The Earth |
| 11 | Animals and The Earth |
| 12 | Soil |
| 13 | Geological conditions of Turkey |
| 14 | Main morfological situations of Turkey |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Eyüp ARTVİNLİ

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

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171117119 | **COURSE NAME** | SPECIAL TOPICS IN BIOLOGY |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 20 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Genetically modified organisms (GMO), Stem cell Technology, organ transports and importance of organ donation, Importance of biology in terms of community, science and technology. Developed processes of drugs and cosmetic products and effects in environment. Removal of toxic substance in environment using microorganisms. Prepared food, preparation processes and risks. Chemical matters (drugs, dyes, detergants) and biological effects. Organisms in near environments ( single cells, home mites, insects). Biological sensors. Genetic copying. Usage of nanotechnology in biology. Bioinformatic | | | | | | |
| **COURSE OBJECTIVES** | | | | | Industrial applications of biology to students to show and teach fundamental concepts of modern biology | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education. | | | | | | |
| **COURSE OUTCOMES** | | | | | be able to know genetically modified organisms  be able to understand importance of organ donation  be able to understand removal of toxic substance in environment using microorganisms.  be able to learn chemical matters and biological effects.  be able to know usage of nanotechnology in biology  be able to learn biological sensors, genetic copying | | | | | | |
| **TEXTBOOK** | | | | | Polat F., Biyolojide Özel Konular, 2010, Pegem Akademi | | | | | | |
| **OTHER REFERENCES** | | | | | Topal Ş., 2006. Biyogüvenlik ve Biyoteknoloji  Öner M., 1988, İleri Endüstriyel Mikrobiyoloji Ders Notları | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Importance of biology in terms of community, science and technology |
| 2 | Genetically modified organisms (GMO) |
| 3 | Genetic copying |
| 4 | Stem cell Technology |
| 5 | Bioinformatic Biological sensors |
| 6 | organ transports and importance of organ donation |
| 7-8 | MID-TERM EXAM |
| 9 | Usage of nanotechnology in biology. |
| 10 | Developed processes of drugs and cosmetic products and effects in environment. |
| 11 | Chemical matters (drugs, dyes, detergants) and biological effects |
| 12 | Organisms in near environments ( single cells, home mites, insects) |
| 13 | Removal of toxic substance in environment using microorganisms. |
| 14 | Prepared food, preparation processes and risks. |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. |  |  | **x** |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞÇEN

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171117120 | **COURSE NAME** | Evolution |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 2 | | 0 | 0 | | | 2 | 3 | COMPULSORY (x ) ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Description of evolution, Development of evolution concept. Darwin’s theory and new synthesis theory. Anorganic evolution, evolution of plant and animal. Adaptation, Variation, origin of variation: Mutation, Recombination, migration, determined of genetic variation: across experiments,  artificial selection, natural selection, habitat, seasonal-ethologic-mechanic-physologic isolation (Gametic mortalite) mechanisms. Postzygotic isolation mechanisms: zygotic mortalite, hybrid sterility, species formation approaches: seconder species, primen spesies, allopatric species, parapatric species, human evolution. To enrich these subjects with examples from daily life and to connect with science and technology teaching curriculum scheduled in 4.and 8 classes. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Description of evolution. To enrich these subjects with examples from daily life and to connect with science and technology teaching curriculum scheduled in 4.and 8 classes. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. be able to know development of evolution concept. 2. be able to understand evolution of plant and animals. 3. be able to know basic evolution concept 4. be ab le to connect 8 with science and technology teaching curriculum scheduled in 4.and 8 classes | | | | | | |
| **TEXTBOOK** | | | | | Freeman S., Herron T.C., 2006, Evrimsel Analiz (Çeviri: S. Karaytuğ, İ. Gündüz, B.Çıplak, H.H. Başıbüyük.) Palme Yayınevi | | | | | | |
| **OTHER REFERENCES** | | | | | Demirsoy A., Kalıtım ve Evrim, 1994 | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Evolutionary Biology |
| 2 | Tree of Life: Classification and Phylogeny |
| 3 | Evolutionary Models |
| 4 | Fossil records of evolution |
| 5 | Life History of the biosphere |
| 6 | Evolutionary Geography |
| 7-8 | MID-TERM EXAM |
| 9 | Evolution of Biodiversity |
| 10 | Diversity |
| 11 | Genetic Drift |
| 12 | Natural Selection and Adaptation |
| 13 | Species and Speciation |
| 14 | Evolutionist Science and society |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞCEN

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

|  |  |
| --- | --- |
| **SEMESTER** | Fall |

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| **COURSE CODE** | 171117114 | **COURSE NAME** | School Experience |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VII | 1 | | 4 | 0 | | | 3 | 5 | COMPULSORY (X ) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary School Teaching**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | | x | | | | X | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | | 1 | | 20 |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | Observing the teacher and students daily life in school, observing teacher organization of the course, how to divide the course into stages, how to apply the form of teaching and techniques, how to use activities in the class, how to manage the course and classroom control, how to finish the course and how to assess the students works. Examining the organization structure of the school, responsibility of school headmaster and school relation with society. Preparing portfolio reflecting school experience studies. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Develop observation skills to prepare prospective teachers and school environment | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | . | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Develop skills in asking questions.  2. Course and classroom management skills improve.  3. Develop skills in assessing student work.  4. Lesson planning and transferring skills improve. | | | | | | | |
| **TEXTBOOK** | | | | | Milli Eğitimi Geliştirme Projesi Hizmet Öncesi Öğretmen Eğitimi. YÖK/Dünya Bankası. Ankara. | | | | | | | |
| **OTHER REFERENCES** | | | | | Aday Öğretmen Klavuzu. (1999). YÖK/Dünya Bankası Milli Eğitimi Geliştirme Projesi Hizmet Öncesi Öğretmen Eğitimi. Ankara. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Planning of a term 1. A day of a student and teacher at school. |
| 2 | Observation of lessons 2.1 Directions and instructions 2.2 Observation of questioning |
| 3 | Teaching methods |
| 4 | School and society 5. Chapter about your lesson at school |
| 5 | Preparation of work sheets |
| 6 | Preparation of work sheets |
| 7-8 | MID-TERM EXAM |
| 9 | Preparation test , scoring and analysis |
| 10 | Assessment and recording |
| 11 | Group studies |
| 12 | Benefiting from simulation in education |
| 13 | Planning lesson and marshaling activities |
| 14 | Management of lesson and control of classroom |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **x** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Ersin KARADEMİR

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | FALL |

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| **COURSE CODE** | 171117113 | **COURSE NAME** | Special Education |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | | **LANGUAGE** |
| VII | 2 | | 0 | 0 | | | 2 | 5 | | COMPULSORY (X ) ELECTIVE () | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | | **General Culture Knowledge** | | | | **Elective Course** | | | |
| X | |  | | |  | | | | General Knowledge( ) Content Knowledge ( ) | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| 1st Mid-Term | | | | | 1 | 30 |
| 2nd Mid-Term | | | | | -- | -- |
| Quiz | | | | | -- | -- |
| Homework | | | | | 1 | 35 |
| Project | | | | | -- | -- |
| Report | | | | | -- | -- |
| Others (………) | | | | | -- | -- |
| **FINAL EXAM** | | | | | |  | | | | | 1 | 35 |
| **PREREQUISITE(S)** | | | | | | No prerequisite for this course. | | | | | | |
| **COURSE DESCRIPTION** | | | | | | The topics covered in the special education course are as following: What is special education?; How did special education emerge?; How is the historical development process of special education?; Who are the professionals working with individuals with special needs?; What are the laws and regulations regarding special education?; What is the role of family in special education?; What is the early childhood special education?; What are the characteristics of individuals with special needs? | | | | | | |
| **COURSE OBJECTIVES** | | | | | | Students who successfully complete this course will obtain overall information and skills regarding children with special needs and special education, and be able to discuss relevant information and skills. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | | As a result of this course, teacher candidates will be informed about special education services provided to students with special needs, who can be also present in their classrooms. Basic principles and concepts of special education are discussed, and special education categories are examined and status of special education in our country is evaluated. | | | | | | |
| **COURSE OUTCOMES** | | | | | | 1. Will be able to discuss special education and its foundations.  1.1. Discuss special education notions and categories.  1.2. Explain prevalence rates in special education categories.  1.3. Delineate historical development of special education.  1.4. Delineate professionals who work with individuals with special needs and their responsibilities.  2. Will be able to discuss laws and regulations regarding special education.  2.1. Explain known laws regarding special education in the United States of America and developed countries in Europe.  2.2. Discuss special education laws and regulations in Turkey.  2.3. Explain referral-diagnosis-evaluation procedure that is being implemented in Turkey.  2.4. Delineate roles and responsibilities of Guidance and Research Center.  3. Will be able to juxtapose relations between parents, family and professionals in case there is an individual with special needs, and experienced feeling in the family.  3.1. Discuss the ideal relation that needs to be established between parents, family and professionals.  3.2. Describe emotional periods that families who have a child with special needs experience.  4. Will be able to delineate early childhood special education and its practices.  4.1. Describe early childhood special education.  4.2. Discuss the importance of early childhood special education.  4.3. Discuss roles and responsibilities of personnel who work at early childhood special education.  4.4. Delineate practices of early childhood special education.  5. Will be able to describe different disability types.  5.1. Describe cognitive disability category.  5.2. Describe learning disability category.  5.3. Describe emotional-behavioral disability category.  5.4. Describe autism spectrum disorder category.  5.5. Describe communication disorder category.  5.6. Describe hearing impairment category.  5.7. Describe visual impairment category.  5.8. Describe physical disabilities and low-incidence disabilities category.  5.9. Describe gifted students category.  6. Will be able to discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for different disability types.  6.1. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for cognitive disability category.  6.2. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for learning disability category.  6.3. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for emotional-behavioral disability category.  6.4. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for autism spectrum disorder category.  6.5. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for communication disorder category.  6.6. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for hearing impairment category.  6.7. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for visual impairment category.  6.8. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for physical disabilities and low-incidence disabilities category.  6.9. Discuss causes, characteristics, prevalence rates, appropriate educational accommodations and problems for gifted students category.  7. Will be able to discuss basic principles about establishing and sustaining effective cooperation.  7.1. Describe the process of establishing effective cooperation.  7.2. Discuss necessary roles and responsibilities for establishing and sustaining effective cooperation. | | | | | | |
| **TEXTBOOK** | | | | | | Diken, İ.H. (2010). Özel Eğitime Gereksinimi Olan Öğrenciler ve Özel Eğitim. Ankara: Pegem Akademi. | | | | | | |
| **OTHER REFERENCES** | | | | | | Akçamete, A. G. (2010) Genel Eğitim Okullarında Özel Gereksinimi Olan Öğrenciler ve Özel Eğitim. Ankara: Kök Yayıncılık.  Diken, İ. H. (2011). İlköğretimde Kaynaştırma. Ankara: Pegem Akademi. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | Projector and computer for lecture presentation | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Foundations of special education |
| 2 | Foundations of special education continue |
| 3 | Laws-regulations, referral procedure-diagnosis procedure, RAM, evaluation. Parents, families, condition of having special needs-parent professional relation, experinces in the family |
| 4 | Early childhood special education |
| 5 | Cognitive disability |
| 6 | Learning disabilities-ADHD |
| 7-8 | MID-TERM EXAM |
| 9 | Emotional and behavioral disorders |
| 10 | Autism specturum disorder |
| 11 | Communication disorders |
| 12 | Hearing impairment |
| 13 | Visual impairment |
| 14 | Physical disabilities and low-incedence disabilities, Gifted students |
| 15-16 | Final Exam |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Nevin Güner YILDIZ

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

**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **MESTER** | Fall |

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| **COURSE CODE** | 171117118 | **COURSE NAME** | Special Teaching Methods - II |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VII | 2 | | 2 | 0 | | | 3 | 4 | COMPULSORY ( X ELECTIVE ( ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 50 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Micro teaching applications (students prepare plans by choosing topics in science, make presentations by selecting suitable learning environment, tool and materials and they will assess related to teaching practice and skills) | | | | | | |
| **COURSE OBJECTIVES** | | | | | To supply the candidate teachers knowledge about contemporary teaching methods and techniques in science and technology teaching courses. To provide opportunity of using teaching materials or activities which are prepared suitable for these methods and techniques with sample course presentations | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | |  | | --- | | **Upon successfull completion of this course, the students will be able to;** | | **1)** prepare and use graphical materials, | 1,2,3,4 | A |  | | **2)** develop and use computer-based lesson materials, | 1,2,3,4 | A |  | | **3)** learn the lab approaches and be able to use them in practice, | 1,2,3,4 | A |  | | **4)** learn the type of experiment and be able to use them  in practice, | 1,2,3,4 | A |  | | **5)** know and apply alternative measurement and  assessment techniques, | 1,2,3,4 | A |  | | **6)** plan a sample lesson by using special teaching  methods and apply it in practice. |  |  |  | | | | | | | |
| **TEXTBOOK** | | | | | 1. İlköğretim Fen ve Teknoloji Dersi Öğretim Programı ve Kılavuzu (2006). Ankara: MEB Yayınları. 2. Çepni ve diğerleri (2005). Fen ve Teknoloji Öğretimi. Ankara: PegemA Yayıncılık. 3. Bahar ve diğerleri (2006). Fen ve Teknoloji Öğretimi. Ankara: PegemA Yayıncılık | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Bağcı Kılıç (2006). Yeni Yaklaşımlar Işığında İlköğretim Bilim Öğretimi. İstanbul: Morpa Yayıncılık. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Using of the methods of problem solving and project in science and technology teaching, micro teaching applications |
| 2 | Using scientific process skills in science and technology teaching, micro teaching applications |
| 3 | Using of the methods of discussion, question-answer and brain storm in science and technology teaching, micro teaching applications |
| 4 | Using of the methods of discussion, question-answer and brain storm in science and technology teaching, micro teaching applications |
| 5 | The place and importance of the laboratory in science and technology education, micro teaching applications |
| 6 | Laboratory approaches used in science and technology teaching, micro teaching applications |
| 7-8 | MID-TERM EXAM |
| 9 | Laboratory rules, security and accidents, micro teaching applications |
| 10 | The concepts of measurement and assessment, the importance of measurement and assessment, measurement and assessment in science and technology teaching, microteaching applications |
| 11 | Errors in measurement, kinds of measurement, kinds of assessment, micro teaching applications |
| 12 | Developing of the measurement instruments, validity and reliability, Blooms taxonomy, micro teaching applications |
| 13 | Alternative assessment and using it in science and technology teaching, micro teaching applications |
| 14 | Planning in science and technology teaching, micro teaching applications |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **x** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Munise SEÇKİN KAPUCU

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

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Fall |

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| **COURSE CODE** | 171117115 | **COURSE NAME** | Guidance |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | | |
| **Theory** | | **Practice** | **Laboratory** | | | **Credit** | **ECTS** | | **TYPE** | | **LANGUAGE** | |
| VII | 3 | | 0 | 0 | | | 3 | 5 | | COMPULSORY ( x ) ELECTIVE () | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | | **General Culture Knowledge** | | | | **Elective Course** | | | | |
| X | |  | | |  | | | | General Knowledge( ) Content Knowledge ( ) | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| 1st Mid-Term | | | | | 1 | | 30 |
| 2nd Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | |  | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Basic concepts, student personal services, the place of psychological counseling and guidance in these services, principle and development of guidance, types of guidance and psychological counseling, services, techniques, organization and personnel, new developments, student know techniques, guide-teacher cooperation, guidance duties of teacher. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | Purpose of student personal services and the place in education, definition of guidance services, purposes and  principles of guidance and counseling , description of students, to guide students, counseling,  social relations, vocational guidance, special education and to define the students who have special needs. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | | At the end of the course, students will be able to:   1. Skills  on applying basic guidance knowledge 2. Skills on describing and applying guidance 3. Skills on coordination with guidance service 4. Skills on discrimating the students who need special education 5. Skills on discriminating the students with special problems 6. Skills on deciding the guidance activities 7. Skills on deciding the guidance activities among students’ developmental needs | | | | | | | |
| **TEXTBOOK** | | | | | | Yeşilyaprak, B. (2006). Gelişimsel Rehberlik, Ankara: Morpa Yayın. | | | | | | | |
| **OTHER REFERENCES** | | | | | | 1. Aydın, B. (2007) (Ed.) Rehberlik Ankara: Pegema Yayıncılık.2.Can, G. (2002)(Ed) Psikolojik Danışma ve Rehberlik Ankara: Pegema Yayıncılık3. Kuzgun, Y. 2011. Rehberlik ve Psikolojik Danışma Ankara: Nobel Yayın.4. Gazioğlu, E., Mertol, Ş. (2008) (Ed). Öğretmen ve Öğretmen adayları için Rehberlik, İstanbul: Pegema Yayıncılık.5.Yeşilyaprak, B. (2005). Eğitimde Rehberlik Hizmetleri, Ankara: Nobel Yayınları | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | | - | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction; meeting, course content, resources and evaluation of information about  Presentation of Psychological Counseling and Guidance |
| 2 | Student Counseling Service in Contemporary Education |
| 3 | Definition and importance of guidance |
| 4 | Objectives and Principles of Guidance |
| 5 | Studies Guidance History of the World and Turkey |
| 6 | Scope of Guidance and Service Areas |
| 7-8 | MID-TERM EXAM |
| 9 | Developmental Guidance |
| 10 | Personal Guidance |
| 11 | Educational Guidance |
| 12 | Vocational Guidance |
| 13 | Individual Recognition Techniques |
| 14 | Organization and Evaluation of Psychological Counseling and Guidance Services |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. Ayşe AYPAY

**Signature**  **Date:**



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| --- | --- |
| **Fall** |  |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171117117 | **COURSE NAME** | CLASSROOM MANAGEMENT |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | |  | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE OF COURSE** | | **LANGUAGE OF COURSE** |
| VII | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X) ELECTIVE ( | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary School Teaching**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| % | | % | | | |  | | | | | % |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | |  |  |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Social and psychological factors affecting student behavior; classroom environment and group interaction; development and implementation of rules related to classroom management and discipline; use of time in the classroom; classroom organization; motivation; communication; starting a new term; creating a positive learning environment; encountered behavior problems in the classroom and improving measures against these problems. | | | | | | |
| **COURSE OBJECTIVES** | | | | | Understanding and applicating basic concepts and principles of effective classroom management, creating a positive classroom atmosphere. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | Defining the concept of classroom management; understanding the importance of physical order by creating learning environments; explaining the rules of classroom; interpreting the school and the classroom as a social system; managing the teaching and learning process, discuss the importance of planning in effective classroom management; defining the concept of communication; identifying the concepts related to motivation; to know definitions and conceptualizations about leadership; identifying the ways of being able to use time effectively; understanding the importance of discipline in public life and classroom environment; understanding and defining the situations of handicapped students; becoming aware of individual differences among students in classroom; identifying strategies to be followed in order to solve the problems of special students and comprehending the need of cooperate; preparing a suitable environment and condition to develop school-family cooperation; contributing to development of school-environment relations. | | | | | | |
| **TEXTBOOK** | | | | | Aydın, A. (2011). *Sınıf yönetimi* (13.bs.). Ankara: Pegem Akademi Yayıncılık.  Şişman, M. ve Turan, S. (Ed). (2011). *Sınıf yönetimi* (8.bs.). Ankara: Pegem Akademi Yayıncılık.  Şişman, M. ve Turan, S. (2002). *Eğitimde TKY.* Ankara: Pegem Akademi Yayıncılık. | | | | | | |
| **OTHER REFERENCES** | | | | | Jenkins, L. (1998). *Sınıflarda öğrenmenin iyileştirilmesi.* İstanbul: Rota/Kalder Yayınları.  Langford, D. P. (1999). *Eğitimde Kalite Yönetimi.* İstanbul: Rota/Beko/Kalder Yayınları.  Çelik, V. (2003). *Sınıf Yönetimi.* Ankara: Nobel Yayıncılık. Karip, E. (Ed). (2003). Sınıf Yönetimi. Ankara: Pegem Akademi Yayıncılık. | | | | | | |
| **TOOL S AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Theoretical Foundations and Approaches of Classroom Management |
| 2 | Determination and Application of Classroom Rules |
| 3 | Determination and Application of Classroom Rules (Case Study 1) |
| 4 | Classroom as a Social System and Learning Climate of Classroom |
| 5 | Management of Learning-Teaching Process in Classroom |
| 6 | Communication and Group Interaction Process in Classroom |
| 7 | Students’ Motivation in Classroom Management |
| 8 | MID-TERM EXAM |
| 9 | The Teacher as a Leader in Classroom |
| 10 | Management of Learning Time in Classroom |
| 11 | Management of Student Behavior and Discipline in Classroom |
| 12 | Management of Special and Problem Students |
| 13 | Management of Teacher- Parent Negotiations |
| 14 | Implementation of EFQM and Malcolm Baldrige Models in Classroom Management |
| 15 | Implementation of EFQM and Malcolm Baldrige Models in Classroom Management |
| 16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr.İlknur ŞENTÜRK

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | SPRING |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171118120 | **COURSE NAME** | ASTRONOMY |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY (X ) ELECTIVE ( ) | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Keppler’s Law and The structure of solar system: Planets and their properties, Satellites. General structure of universe: Galaxy, The formation of Stars, red giants, nötron stars, white dwarfs, black holes. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to give fundamental concepts about astronomy | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be able to understand formation and structure of universe and to have the skill explain to other people | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this module students will be able to:   1. Learn the structure of universe 2. Explain the structure of solar system using Keppler laws 3. Explain the structure of celestial body such as planet, stars, satellites and meteor | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Serway, R.A. (1990). Physics for Scientists and Engineers. Philadelphia: Saunders College Publishing 2. Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. (1996). Physics for Scientists and Engineers. Prentice Hall, Inc. 3. Bueche, F., Technical Physics,Harper&Row, Publishers, NewYork 4. Silk J. A Short history of the Universe, Freeman | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculater | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | History of Astronomy, Discoveries and observations |
| 2 | Keppler Laws |
| 3 | The law of universal gravitation, Gravitational potential energy |
| 4 | Energy considerations in the motions of planets and satellites, |
| 5 | Telescopes from past to today, The contribution of Turk scientists to Astronomy |
| 6 | The formation of Universe, Big Bang and its proofs |
| 7-8 | MID-TERM EXAM |
| 9 | General structure of Universe and galaxy |
| 10 | Solar system: structure and formation |
| 11 | Planets and their properties :Mercury, Venus, Earth and Moon |
| 12 | Planets and their properties: Mars, Saturn, Jupiter, Uranus and Neptune |
| 13 | Star formation |
| 14 | Asteroids, meteors, comets |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **X** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| **9** | Ability to explain natural events based on scientific basis. | **X** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| **15** | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Deniz KORKMAZ

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| --- | --- |
| **SEMESTER** | SPRING |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171118128 | **COURSE NAME** | ATMOSPHERIC PHYSICS AND CLIMATE |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( ) ELECTIVE (X) | | TURKISH |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| X | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 40 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 40 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Structure of the atmosphere, atmospheric thermodynamics, atmospheric dynamics, clouds, precipitation, winds, weather analysis and forecasting, regional climates, changes in global climate. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main aim of the course serve to introduce the student to the fundamental physical principles upon which to atmospheric sciences are based and to explain meteorological phenomena. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | | To be able to understand formation and structure of atmosphere, to understand the atmospheric phenomena which effect on our daily life and to have the skill explain to other people | | | | | | |
| **COURSE OUTCOMES** | | | | | By the end of this module students will be able to:   1. learn physical principles which are based on atmospheric phenomena 2. understand how the atmospheric phenomena occur 3. make connection the other disciplines deal with atmospheric phenomena | | | | | | |
| **TEXTBOOK** | | | | | 1. Atmospheric Sciences, Wallace J. M.,and Hobbs P. V. Academic Press 1977 2. Fundamentals of Meteorology , L. J. Battan, Prentice –Hall, Inc. | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Serway, R. A. ve Beichner, R. J., Fen ve Mühendislik için Fizik III 2. Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. Halliday, D. Temel Fizik I 3. Bueche, F., Technical Physics | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Calculater | | | | | | |

|  |  |
| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Composition of the atmosphere |
| 2 | Structure of the atmosphere |
| 3 | Energetics of the atmosphere |
| 4 | Atmospheric stability and vertical air motions |
| 5 | Clouds |
| 6 | Precipitation |
| 7-8 | MID-TERM EXAM |
| 9 | The winds, Severe storms |
| 10 | Air masses, Fronts and cylones |
| 11 | Weather analysis and forecasting |
| 12 | Atmospheric optics and acoustics |
| 13 | Regional climates |
| 14 | Changes in global climate |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **X** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **X** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **X** |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **X** |
| **9** | Ability to explain natural events based on scientific basis. | **X** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life | **X** |  |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **X** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **X** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **X** |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **X** |
| **15** | Ability to identify and solve the problems in accordance with stages. | **X** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Deniz KORKMAZ

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

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Informatıon Form**

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| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171118125 | **COURSE NAME** | Food Chemistry |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( ) ELECTIVE ( x ) | |  |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| x | |  | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 30 |
| Project | | | | |  |  |
| Report | | | | | 1 | 10 |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 60 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Proteins, carbohydrates, lipids, vitamine, minerals, Food additive, contamination of food | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give a general idea about Food Chemistry | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | Learning basic information on nutrition | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. To learn nutrition content of foods and the healthy [nourishment](http://tureng.com/search/healthy%20nourishment) 2. To learn storage conditions for foods | | | | | | |
| **TEXTBOOK** | | | | | Beslenme Sağlılklı yaşam (2007), prof. Dr. Mustafa Tayar,Yrd. Doç. Dr. Nimet Haşıl Korkmaz, Nobel yayınları | | | | | | |
| **OTHER REFERENCES** | | | | | Besin Kimyası (1993).Prof. Dr. Azmi TELEFONCU. Ege Üniversitesi Fen Fakültesi Yayınları | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Proteins |
| 2 | Proteins |
| 3 | carbohydrates |
| 4 | carbohydrates |
| 5 | lipids |
| 6 | lipids |
| 7-8 | MID-TERM EXAM |
| 9 | vitamine |
| 10 | vitamine |
| 11 | minerals |
| 12 | minerals |
| 13 | Addition to Food |
| 14 | contamination of food |
| 15-16 | FINAL EXAM |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to understand and apply the knowledge of basic sciences | **X** |  |  |
| 2 | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  |  |
| 3 | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **X** |  |  |
| 4 | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **X** |  |  |
| 5 | Ability to follow and interpret the contemporary issues | **X** |  |  |
| 6 | Ability to work in cooperation and to gain career and ethical responsibilty | **X** |  |  |
| 7 | Ability to develop science literacy based on the purposes of the basic science education | **X** |  |  |
| 8 | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  |  |
| 9 | Ability to explain natural events based on scientific basis. |  |  |  |
| 10 | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  |  |
| 11 | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  |  |
| 12 | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  |  |
| 13 | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  |  |
| 14 | Ability to have knowledge about laboratory safety and to use when necessary |  |  |  |
| 15 | Ability to identify and solve the problems in accordance with stages. |  |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Asiye BERBER

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

**Date:**

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| --- | --- |
| **SEMESTER** | Spring |

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| --- | --- | --- | --- |
| **COURSE CODE** | 171116120 | **COURSE NAME** | Food Microbiology |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| 8 | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( ) ELECTIVE ( x) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | This course provides content of foods, properties of microorganisms and importance in food microbiology, environment micro flora, foods and microorganisms connection, diseases born from foods, Microbiological preparation and preservation of foods | | | | | | |
| **COURSE OBJECTIVES** | | | | | Important microorganisms in food industry, factors affecting microbial growth in foods, control microbial growth in foods and food storage methods and the use of beneficial microorganisms in the food industry to provide students the opportunity to learn. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | He/She will have the level of knowledge of biology to meet the needs of students in the field of Science Education. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. be able to  explanation foods and microorganisms connection 2. be able to acknowledgment diseases born from foods 3. be able to know preservation methods of foods | | | | | | |
| **TEXTBOOK** | | | | | Ünlütürk A., Turantaş F., 1998, Gıda Mikrobiyolojisi, Mengi Tan Basımevi, İzmir | | | | | | |
| **OTHER REFERENCES** | | | | | Halkman K., 2005, Gıda Mikrobiyolojisi Uygulamaları   Practical Food Microbiology, D.Roberts, M Grrenwood, 2003. | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Computer, Projector | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Food Relations of microorganisms, microbial contamination in foods and Important Microorganisms |
| 2 | Factors affecting microbial growth in foods |
| 3 | Indicator and pathogenic microorganisms in foods |
| 4 | Foodborne Microbial Diseases |
| 5 | Principles of Food Preservation 1 |
| 6 | Principles of Food Preservation 1 |
| 7-8 | MID-TERM EXAM |
| 9 | Principles of Food Preservation 1 |
| 10 | Microbiological Spoilage of meat and meat products |
| 11 | Microbiological Spoilage of Milk and Milk Products |
| 12 | Microbiological Spoilage of canned foods |
| 13 | Fruit-Vegetable and Fruit and Vegetable Products Microbiological Spoilage |
| 14 | Food Safety and Hazard Analysis Critical Control Points (HACCP) |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | **x** |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons |  | **x** |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues | **x** |  |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | **x** |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  |  | **x** |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | **x** |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  |  | **x** |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  |  | **x** |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  |  | **x** |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cansu FİLİK İŞÇEN

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171118131 | **COURSE NAME** | Communication and Social Interaction |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 2 | | 0 | 0 | | | 2 | 4 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Elementary Mathematics Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
|  | |  | | | | x | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  | 30 |
| Quiz | | | | |  |  |
| Homework  Project | | | | |  | 30 |
| Report | | | | |  |  |
| Others (Presentation) | | | | |  |  |
| **FINAL EXAM** | | | | | Final Exam | | | | |  | 40 |
| **PREREQUISITE(S)** | | | | | --- | | | | | | |
| **COURSE DESCRIPTION** | | | | | The aim of the course is to gain basic concepts connected with communication and interaction and their connection, handicap of communication, kind of communication, characteristic which handicap of communication, learning and teaching process as a communication processs , basic behaviors which related communication, development of social interaction. | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1. Basic concepts connected with communication and interaction 2. Their connection 3. Handicapof communication 4. Characteristic of handicap of communication in classroom 5. Patterns connected with handicap of communication 6. Learning-teaching process as a communication process 7. Democratic environment and participate 8. Kind of communication 9. Verbal communication 10. The basic behaviors which related communication 11. Patterns connected with verbal and non- verbal communication | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | |  | | | | | | |
| **TEXTBOOK** | | | | | Ergin, A. ve Birol, Cem (2000) Eğitimde İletişim. Ankara:Anı Yayıncılık. | | | | | | |
| **OTHER REFERENCES** | | | | | | | | | | | |
| Ergin, A. ve Birol, Cem (2000) Eğitimde İletişim. Ankara:Anı Yayıncılık.  Dökmen, Ü. (1995) Sanatta ve Günlük Yaşamda İletişim Çatışmaları ve Empati. İstanbul: Sistem Yayıncılık  Baltaş Z. (1999) Beden Dili. İstanbul: Remzi Kitabevi. | | | | | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | Basic Instructional Tools (Such as Computer and Projection) | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Basic concepts connected with communication and interaction, their connection |
| 2 | Basic concepts connected with communication and interaction, their connection |
| 3 | Handicapof communication |
| 4 | Characteristic of handicap of communication in classroom |
| 5 | Patterns connected with handicap of communication |
| 6 | Learning-teaching process as a communication process |
| 7-8 | MID-TERM EXAM |
| 9 | Learning-teaching process as a communication process |
| 10 | Democratic environment and participate |
| 11 | Kind of communication |
| 12 | Verbal communication |
| 13 | The basic behaviors which related communication |
| 14 | Patterns connected with verbal and non- verbal communication |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to comprehend and apply knowledge related to Basic Science |  | **x** |  |
| 2 | Ability to plan and prepare Teaching Activities in Science, to use general teaching principles, methods and techniques |  |  | **x** |
| 3 | Ability to transfer knowledge learned in Science to life and to narrate to third person with this transfer | **x** |  |  |
| 4 | Ability to understand the importance and place of science, to apply this when it is necessary and connect to interdisciplinary fields. | **x** |  |  |
| 5 | Ability to follow and interpret contemporary issues | **x** |  |  |
| 6 | Ability to work in collaboration, gain professional and ethical responsibility | **x** |  |  |
| 7 | Ability to develop science literacy for the purposes of basic objects of Science Teaching |  | **x** |  |
| 8 | Ability to analysis the new Science program (gain, teaching-learning process, evaluation etc.) |  | **x** |  |
| 9 | Ability to explain natural phenomena on the basis of the scientific basis |  | **x** |  |
| 10 | Ability to gain scientific process skills and to facilitate their lives by using these in different stages of the later life | **x** |  |  |
| 11 | Ability to use methods and techniques suitable for characteristics of students’ personal development |  | **x** |  |
| 12 | Ability to prepare a plan by utilizing Science program, to present a lesson by organizing equipment and materials |  |  | **x** |
| 13 | Ability to select, design and apply science experiments suitable for the subject, to analyze data and to make scientific report by interpreting them | **x** |  |  |
| 14 | Ability to have a knowledge of laboratory safety and to use it when it is necessary |  |  | **x** |
| 15 | Ability to identify the problems and solve them in accordance with stages | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Zuhal ÇUBUKÇU

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171118137 | **COURSE NAME** | Teaching Practice |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** | |
| VIII | 2 | | 6 | 0 | | | 5 | 12 | COMPULSORY ( x) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary School Teaching**  [if it contains considerable design, mark with (√) ] | | | | | | **Social Science** |
|  | | % 100 | | | |  | | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **MID-TERM** | | | | | Evaluation Type | | | | | Quantity | | % |
| Mid-Term | | | | |  | |  |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | | 1 | | 40 |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | Written examination | | | | | 1 | | 60 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | | |
| **COURSE DESCRIPTION** | | | | | To preparate a daily lesson plan weekly, to practice plan prepareted, evaluation of practice by teacher, lecturer, and student trainee, make corrections assessments in line and reapplications. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To aimed to try and develop the teacher candidate’s knowledge and skills gained in a school environment and to win the specifications required by the profession. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | 1-Teacher candidates know competencies required for the teaching profession by making teaching in different classes of practice school that were sent to gain experience in teaching practice  2- teel objectives of the school training program of their field  3- know textbooks and the techniques of student assessment of the school training program of their field  4- know way to communicate with students and the techniques of to join them in active teaching-learning process  5- Count the techniques of motivation to learn on students  6- Explain how to transfer field information.  7- Evaluate school education program, textbooks and student assessment techniques of their fields  8- Evaluate the adequacy of the teaching. | | | | | | | |
| **TEXTBOOK** | | | | | 1.Komisyon, Fakülte-Okul İşbirliği,YÖK Yayınları, Ankara, 1998 | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.M.SANDS-D.A.ÖZÇELİK Okullarda Uygulama Çalışmaları, YÖK Yayınları, Ankara, 1997.  2.Leyla KÜÇÜKAHMET, Öğretmenlik Mesleğine Giriş Ank, 2005  3.H.İ.YALIN, Öğretim Teknolojileri ve Materyal Geliştirme, Nobel Yay, Ankara 2001  4.MEB İlköğretim Kurumları Yönetmeliği  5.K.KÖKSAL, Birleştirilmiş Sınıflarda Öğretim, Ank. 2009  6.MEB Ders Kitapları Yönetmeliği | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Recognizing group, advertising and evaluateing lesson. |
| 2 | Instructions and explanations |
| 3 | Preparing and using worksheets. |
| 4 | Evaluateing students’ works |
| 5 | Practices of asking question in teaching. |
| 6 | Gorup works. |
| 7-8 | MID-TERM EXAM |
| 9 | Preparing test, scoring and analysising of conclusion. |
| 10 | Planning lesson and ordering activities. |
| 11 | Sample teaching activities |
| 12 | Evaluateing course teaching practiseof training |
| 13 | Evaluateing lesson |
| 14 | Delivering homeworks. |
| 15-16 | FINAL EXAM |

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| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences |  | x |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education | x |  |  |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | x |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines |  | x |  |
| **5** | Ability to follow and interpret the contemporary issues |  | x |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  | x |  |
| **7** | Ability to develop science literacy based on the purposes of the basic science education |  | x |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) | x |  |  |
| **9** | Ability to explain natural events based on scientific basis. |  |  | x |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  |  | x |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. | x |  |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. | x |  |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. | x |  |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary | x |  |  |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | x |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assis. Prof. Dr. Ersin KARADEMİR

**Signature**:



**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171118136 | **COURSE NAME** | **Plasma Physics and Its Technologies** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 2 | | 0 |  | | | 2 |  | COMPULSORY ( ) ELECTIVE (x ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Science Education**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| % 90 | | % 10 | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | | 1 | 30 |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | |  |  |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | | Final Exam | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | |  | | | | | | |
| **COURSE DESCRIPTION** | | | | | Natural plasma sources, plasmas in our environment and space, properties and definition of plasma, plasma parameters, difference between plasma and gas, occuring phenomenons in plasma, gas discharge tubes, using fields of plasma in technology, vacuum and vacuum system necessities and plasma surface process, plasma thin film deposition techniques and methods, plasma jets, plasma display panels, plasma antennas, analyse of experiment and experiment arrangements about plasma. | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main object of the course is to introduce the concept of plasma and plasma technologies by teaching the basic information about them, to introduce the natural plasmas in our surroundings and associate them with our lives. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | 1. Explain and analyze natural phenomena.  2. Design and conduct experiments as well as to analyze and interpret data.  3. Use direct correlation and application of gained knowledge with technology and industry.  4. Function as a team member.  5. Gain knowledge of contemporary issues. | | | | | | |
| **COURSE OUTCOMES** | | | | | 1. Learn the natural plasma sources.  2. Learn the plasma parameters.  3. Learn the difference between plasma and gas.  4. Learn the gas discharge phenomenon.  5. Learn the plasma thin film deposition techniques.  6. Learn the plasma jet, plasma antenna, plasma display panels.  7. Learn the using fields of plasma in technology | | | | | | |
| **TEXTBOOK** | | | | | 1. Ekem, N. Musa, G., Akan, T (2001), Plasma Physics Textbook, Eskisehir.  2. Grill,A. (1993), Cold Plasma in Materials Fabrcation, IEEE Press | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Roth J.R. , Industrial Plasma Engineering Volume 1, IOP publishing 1995  2.Roth J.R. , Industrial Plasma Engineering Volume 2, IOP publishing 2001  3.Roth,A. (1995) , Vacuum Technology, Amsterdam: Elsevier Publishing Company. 4.Lieberman,M. , Lichtenberg,A.L., Principles of Plasma Discharges And Materials Processing, New York: Wiley-Interscience Publication | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| --- | --- |
| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Natural plasma sources, plasmas in our environment and space |
| 2 | Properties and definition of plasma |
| 3 | Plasma parameters |
| 4 | Difference between plasma and gas |
| 5 | Occuring phenomenons in plasma |
| 6 | Gas discharge tubes |
| 7-8 | MID-TERM EXAM |
| 9 | Using fields of plasma in technology |
| 10 | Vacuum and vacuum system necessities and plasma surface process |
| 11 | Plasma thin film deposition techniques and methods |
| 12 | Plasma jets, plasma display panels, plasma antennas |
| 13 | Analyse of experiment and experiment arrangements about plasma |
| 14 | Analyse of experiment and experiment arrangements about plasma |
| 15-16 | FINAL EXAM |

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| **ID** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| **1** | Ability to understand and apply the knowledge of basic sciences | **x** |  |  |
| **2** | Ability to plan and prepare teaching activities and to use teaching principles, methods and techniques at science education |  |  | **x** |
| **3** | Ability to transfer the knowledge that is learned at science to daily life and ability to explain this transference to third persons | **x** |  |  |
| **4** | Ability to understand the place and importance of science at life-long learning and to apply it when necessary and make connection with other disciplines | **x** |  |  |
| **5** | Ability to follow and interpret the contemporary issues |  | **x** |  |
| **6** | Ability to work in cooperation and to gain career and ethical responsibilty |  |  | **x** |
| **7** | Ability to develop science literacy based on the purposes of the basic science education | **x** |  |  |
| **8** | Ability to investigate new science curriculums (acquisition, teaching-learning process, evaluation techniques etc.) |  | **x** |  |
| **9** | Ability to explain natural events based on scientific basis. | **x** |  |  |
| **10** | To acquire scientific process skills and ability to facilitate the life by using these skills at different parts of life |  | **x** |  |
| **11** | Ability to use method and techniques in accordance with specifications of personal development of students. |  | **x** |  |
| **12** | Ability to present course by using science curriculums and to arrange equipment and materials. |  | **x** |  |
| **13** | Ability to choose, design and apply suitable experiments and to analyze and interpret the data and to write a scientific report. |  | **x** |  |
| **14** | Ability to have knowledge about laboratory safety and to use when necessary |  |  | **x** |
| **15** | Ability to identify and solve the problems in accordance with stages. |  | **x** |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assoc. Prof. Dr. M. Zafer Balbağ

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

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**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171118134 | **COURSE NAME** | **Project Development in Teaching Science** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | | **COURSE OF** | | | | |
| **Theory** | | **Practice** | **Labratory** | | | **Credit** | **ECTS** | **TYPE** | | **LANGUAGE** |
| VIII | 2 | | 0 | 0 | | | 2 | 6 | COMPULSORY ( ) ELECTIVE (X ) | | Turkish |
| **COURSE CATAGORY** | | | | | | | | | | | |
| **Basic Science** | | **Educational Science** | | | | **Primary School Teaching**  [if it contains considerable design, mark with (√) ] | | | | | **Social Science** |
| %50 | | %50 | | | |  | | | | |  |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | |
| **MID-TERM** | | | | | **Evaluation Type** | | | | | **Quantity** | **%** |
| Mid-Term | | | | |  |  |
| Quiz | | | | |  |  |
| Homework | | | | | 1 | 20 |
| Project | | | | | 1 | 30 |
| Report | | | | |  |  |
| Others (………) | | | | |  |  |
| **FINAL EXAM** | | | | |  | | | | | 1 | 50 |
| **PREREQUIEITE(S)** | | | | | - | | | | | | |
| **COURSE DESCRIPTION** | | | | | What is the significance and place of the project-study science in the social and economic life of an individual? What are the project types? What are the phases of project preparation? What does project management mean? How is a pilot project prepared and evaluated in sciences? Determination of sharing of project subjects and results by the students. How is a projection planned, how are target determination, resource discussion, displaying, evaluation and presentation of the results made? What should the procedure be in project studies in schools? | | | | | | |
| **COURSE OBJECTIVES** | | | | | Making the students discover that they should conduct studies, which are disciplined, planned and programmed and with their targets and results determined, regarding necessities and problems encountered in science, for the thoughts required by the society or individuals and for solving problems; improving project-development skills of the students. | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | |  | | | | | | |
| **COURSE OUTCOMES** | | | | | Students develop disciplined, planned and programmed study and written-oral presentation skills, generating thoughts, information and technology needed by the society or individuals regarding necessities and problems encountered in science.  - Individuals develop reliable relationships with the society, institutions and nature.  -They discover the effect of reliable communication and relationships on efficiency and production.  - They appreciate the place and significance of the projects (disciplined, planned and programmed studies, with their purposes and results determined) in science and our social life. | | | | | | |
| **TEXTBOOK** | | | | | 1. Koyre Alexandre (2004). Bilim Tarihi Yazıları. TÜBİTAK Popüler Bilim Kitapları. 2. Karamustafaoğlu, O. ve Yaman S. (2006). *Fen Eğitiminde Özel Öğretim Yöntemleri I-II*. Anı Yayıncılık, 3. Fen Eğitimi alanında yapılmış çalışmalar ve metod kitapları. | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Louv Richard (2010). Doğadaki Son Çocuk. TÜBİTAK Popüler Bilim Kitapları. 2. Taşkın, Ö. (2008). *Fen ve teknoloji öğretiminde yeni yaklaşımlar.* Ankara: PegemA 3. Chaille, C., & Britain, L. (2003). *The young child as scientist.* New York: A & B 4. Çepni, S.(2005). *Kuramdan Uygulamaya Fen ve Teknoloji Öğretimi*. Ankara: PegamA, 5. Şimşek, N., ve Çınar, Y. (2008). *Fen ve Teknoloji Öğretimi.* Ankara: Anı Yayıncılık 6. Ülgen, Gülten (2001). *Kavram Geliştirme Kuramlar ve Uygulamalar.* PegemA Yayıncılık 7. Topsakal, Sebahattin (2000). *Fen Bilgisi Öğretimi*. Alfa Yayıncılık 8. Temizyürek Kamil (2003). *Fen Öğretimi ve Uygulamaları*. Nobel Yayın Dağıtım 9. Aşağıda adı geçen kitaplardan tercihe göre okunması tavsiye edilmektedir.   Margaret Muckenhoupt. (1997).*Bilinçdışının Kaşifi: Sigmund Freud*. Ankara: TÜBİTAK  Sargun. A. Tont (1997). *Sulak Bir Gezegenden Öyküler*. Ankara: TÜBİTAK  L. Vlasov., & D. Trifonov. (1977). *107 Kimya Öyküsü*. Ankara: TÜBİTAK  Jane Bingham. *Bilimsel Deneyler*. TÜBİTAK  Peter Adamczyk – Paul Francis Law. *Elektrik ve Manyetizma*. TÜBİTAK  Daniel Todes. (2000). *Hayvan Makinesi Araştırırken: Ivan Pavlov*. Ankara: TÜBİTAK  Bobbi Searle. *Şaşırtıcı Fen Projeleri*. Altın Kitaplar Yayınevi | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | |  | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | What is the significance and place of the project-study science in the social and economic life of an individual? What are the project types? |
| 2 | What are the phases of project preparation? What does project management mean? How is a pilot project prepared and evaluated in sciences? Determination of sharing of project subjects and results by the students. |
| 3 | How is a projection planned, how are target determination, resource discussion, displaying, evaluation and presentation of the results made? What should the procedure be in project studies in schools? |
| 4 | Preliminary determination studies of sharing dates of project subjects and project results by the students. |
| 5 | Final determination studies of sharing dates of project subjects and project results by the students. |
| 6 | Monitoring and inspecting of the project development process. |
| 7-8 | MID-TERM EXAM |
| 9 | Maturation and final forming of the project development process. |
| 10 | Written and oral presentation, discussion and evaluation of their projects by the students in the classroom in the framework of the determined program. |
| 11 | Written and oral presentation, discussion and evaluation of their projects by the students in the framework of determined program. |
| 12 | Written and oral presentation, discussion and evaluation of their projects by the students in the classroom in the framework of determined program. |
| 13 | Written and oral presentation, discussion and evaluation of their projects by the students in the classroom in the framework of determined program. |
| 14 | General discussion |
| 15-16 | FINAL EXAM |

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| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to comprehend and apply knowledge related to Basic Science |  | **x** |  |
| 2 | Ability to plan and prepare Teaching Activities in Science, to use general teaching principles, methods and techniques |  |  | **x** |
| 3 | Ability to transfer knowledge learned in Science to life and to narrate to third person with this transfer | **x** |  |  |
| 4 | Ability to understand the importance and place of science, to apply this when it is necessary and connect to interdisciplinary fields. | **x** |  |  |
| 5 | Ability to follow and interpret contemporary issues | **x** |  |  |
| 6 | Ability to work in collaboration, gain professional and ethical responsibility | **x** |  |  |
| 7 | Ability to develop science literacy for the purposes of basic objects of Science Teaching |  | **x** |  |
| 8 | Ability to analysis the new Science program (gain, teaching-learning process, evaluation etc.) |  | **x** |  |
| 9 | Ability to explain natural phenomena on the basis of the scientific basis |  | **x** |  |
| 10 | Ability to gain scientific process skills and to facilitate their lives by using these in different stages of the later life | **x** |  |  |
| 11 | Ability to use methods and techniques suitable for characteristics of students’ personal development |  | **x** |  |
| 12 | Ability to prepare a plan by utilizing Science program, to present a lesson by organizing equipment and materials |  |  | **x** |
| 13 | Ability to select, design and apply science experiments suitable for the subject, to analyze data and to make scientific report by interpreting them | **x** |  |  |
| 14 | Ability to have a knowledge of laboratory safety and to use it when it is necessary |  |  | **x** |
| 15 | Ability to identify the problems and solve them in accordance with stages | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Assist. Prof. Dr. Ersin KARADEMİR

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



**ESOGU Maths and Science Education Department** (Science Education)

**Course Information Form**

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| **SEMESTER** | Spring |

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| **COURSE CODE** | 171118124 | **COURSE NAME** | Turkish Educational System and School Management |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | | | | | |  | | | | | | |
| **Theory** | | **Practice** | | **Labratory** | | **Credit** | | **ECTS** | **TYPE OF COURSE** | | **LANGUAGE OF COURSE** | |
| VIII | 2 | | 0 | | 0 | | 2 | | 2 | COMPULSORY (X) ELECTIVE ( ) | | Turkish | |
| **COURSE CATAGORY** | | | | | | | | | | | | | |
| **Professional Knowledge** | | **Content Knowledge** | | **General Culture Knowledge** | | | | **Elective Course** | | | | | |
| %100 | |  | |  | | | | General Knowledge( ) Content Knowledge ( ) | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | | |
| **MID-TERM** | | | | | | **Evaluation Type** | | | | | **Quantity** | | **%** |
| Mid-Term | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Others (………) | | | | |  | |  |
| **FINAL EXAM** | | | | | |  | | | | | 1 | | 50 |
| **PREREQUIEITE(S)** | | | | | | \_\_ | | | | | | | |
| **COURSE DESCRIPTION** | | | | | | Basic principles and objectives of the Turkish education system, legal regulations related to education, Turkish education system, management theories and processes, school organization and management, staff, students, faculty, and business processes in school management, public participation in school, the school-environment relations. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | | The purpose of this course is to make pre-service teachers have general knowledge related to Turkish Education System and gain a perspective about school management. | | | | | | | |
| **ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION** | | | | | |  | | | | | | | |
| **COURSE OUTCOMES** | | | | | | 1. Having knowledge about the social foundations of education. 2. Analyzing and discussing the education system and schools from a variety of perspectives.  3. Organization and management approaches developed for analyzing the effects of education and school management 4. Understanding how education system is organized and following current events and discussions in education.  5. Knowing the source of human power in education and understanding the branch which holds this system.  6. Understanding the management process. 7. Knowing school management processes and functions.  8. Stating recommendations to solve the problems about management of education and school. | | | | | | | |
| **TEXTBOOK** | | | | | | Şişman, M. (2011). Türk Eğitim Sistemi ve Okul Yönetimi (4. baskı). Ankara: Pegem A Yayıncılık. | | | | | | | |
| **OTHER REFERENCES** | | | | | | Şişman, M. (2011). Türk Eğitim Sistemi ve Okul Yönetimi (4. baskı). Ankara: Pegem A Yayıncılık.Şişman, M., Açıkalın, A. & Turan, S. (2007). Bir İnsan Olarak Okul Müdürü. Ankara: Pegem A Yayıncılık.Şişman, M. (2011). Eğitimde Mükemmellik Arayışı (2. baskı). Ankara: Pegem A Yayıncılık.Şişman, M. (2011). Öğretim Liderliği (3. baskı). Ankara: Pegem A Yayıncılık.Çelik, V. (Ed.). (2010). Türk Eğitim Sistemi ve Okul Yönetimi (3. baskı). Ankara: Pegem A Yayıncılık.Kesknkılıç, K. (Ed.). (2007). Türk Eğitim Sistemi ve Okul Yönetimi (1. baskı). Ankara: Pegem A Yayıncılık.Özdemir, S. (Ed.). (2010). Türk Eğitim Sistemi ve Okul Yönetimi (3. baskı). Ankara: Nobel Yayıncılık.Karip, E. (Ed.). (2011). Eğitim Bilimine Giriş (4. baskı). Ankara: Pegem A Yayıncılık.Başaran, İ. E. (2006). Türk Eğitim Sistemi ve Okul Yönetimi (1. baskı). Ankara: Ekinoks Yayımevi.Memduhoğlu, H. B. & Yılmaz, K. (Ed.). (2011). Türk Eğitim Sistemi ve Okul Yönetimi (3. baskı). Ankara: Pegem A Yayıncılık. | | | | | | | |
| **TOOLS AND EQUIPMENTS REQUIRED** | | | | | |  | | | | | | | |

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| **COURSE SYLLABUS** | |
| **WEEK** | **TOPICS** |
| 1 | Creation of the education system |
| 2 | The legal foundations of the education system |
| 3 | Organization and management structure of the education system |
| 4 | Organizational levels of the education system |
| 5 | Human and physical sources in the education system |
| 6 | Current discussions and projects in education |
| 7-8 | MID-TERM EXAM |
| 9 | Management theories and processes |
| 10 | School and school management, management of human source in school |
| 11 | Entity matters of student |
| 12 | Matters related to teaching and training |
| 13 | School management |
| 14 | Family and community participation in school and overall evaluation |
| 15-16 | FINAL EXAM |

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| --- | --- | --- | --- | --- |
| **NO** | **PROGRAM OUTCOMES** | **3** | **2** | **1** |
| 1 | Ability to comprehend and apply knowledge related to Basic Science |  | **x** |  |
| 2 | Ability to plan and prepare Teaching Activities in Science, to use general teaching principles, methods and techniques |  |  | **x** |
| 3 | Ability to transfer knowledge learned in Science to life and to narrate to third person with this transfer | **x** |  |  |
| 4 | Ability to understand the importance and place of science, to apply this when it is necessary and connect to interdisciplinary fields. | **x** |  |  |
| 5 | Ability to follow and interpret contemporary issues | **x** |  |  |
| 6 | Ability to work in collaboration, gain professional and ethical responsibility | **x** |  |  |
| 7 | Ability to develop science literacy for the purposes of basic objects of Science Teaching |  | **x** |  |
| 8 | Ability to analysis the new Science program (gain, teaching-learning process, evaluation etc.) |  | **x** |  |
| 9 | Ability to explain natural phenomena on the basis of the scientific basis |  | **x** |  |
| 10 | Ability to gain scientific process skills and to facilitate their lives by using these in different stages of the later life | **x** |  |  |
| 11 | Ability to use methods and techniques suitable for characteristics of students’ personal development |  | **x** |  |
| 12 | Ability to prepare a plan by utilizing Science program, to present a lesson by organizing equipment and materials |  |  | **x** |
| 13 | Ability to select, design and apply science experiments suitable for the subject, to analyze data and to make scientific report by interpreting them | **x** |  |  |
| 14 | Ability to have a knowledge of laboratory safety and to use it when it is necessary |  |  | **x** |
| 15 | Ability to identify the problems and solve them in accordance with stages | **x** |  |  |
| **1**:None. **2**:Partially contribution. **3**: Completely contribution. | | | | |

**Instructor(s):** Prof. Dr. Cemil YÜCEL

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