Course Information								
Course Code	**T**	**P**	**L**	**C**	**ECTS**	**Type** C/E	**Language** TR/ENG etc.	**Year/Semester**
PHYS1014	**6**	**0**	**0**	**6**	**8**	**C**	**TR**	**1/SPRING**
Course Name (Turkish)	**Genel Fizik II**							
Course Name (English)	**General Physics II**							

Unit/ Program	Chemistry Department/Undergraduate Program
Course Prerequisite	No
Course Objectives	To teach the basic concepts and laws of Electricity and Magnetism.
Course Outline	Electric charge, Electric field and Gauss's law, Electric potential, Capacitors and dielectrics, Current and resistance. Direct current circuits, Magnetic fields and magnetic forces, Magnetic field sources, Electromagnetic induction, Inductance.
Textbook / Material / Resources	Physics for Science and Engineering I. (Serway Physics) 1. Physics for Scientist & engineers with modern physics, Third Edition, Serway,R,A. 1992. 2. Serway, R.A. and Beichner, R.J. Physics For Scientist and Engineers with Modern Physics, Sounders College Publishing, 2000. 3. Physics, Keller, F. J., Gettys, W. E., Skove, M. J. McGraw, 1993
Internship Status	No

Course Precedents

University Name	**Program Name**	**Course Name**	**T-P-L-C; ECTS**	**Type**
Gazi University	**Chemistry**	**Physics II**	**4-0-0-4; 6**	**C**
Hacettepe University	**Chemistry**	**Physics II**	**3-0-0-3; 4**	**C**
Rize (RTE) University	**Chemistry**	**Physics II**	**2-0-2-3; 4**	**C**

The instructor who proposed the course (Title, Name and Surname)	*Signature*
Prof. Dr. Cengiz TATAR	
Instructors who can teach the course (Title, Name and Surname)	*Signature*
Prof.Dr.Fethi DAĞDELEN	

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)

Ability to explain the use of the Laws of Motion in our daily lives.

Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.)

Stakeholder Name	**Opinion** (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution		
Week	**Theory**	**Application/Laboratory**
1	Electric Charge	
2	*Coulomb's Law*	
3	Electric Field	
4	Gauss Yasası	
5	Electrical Potential	
6	*Properties of Capacitance and Dielectrics*	
7	*Current, Resistance and Electromotive Force*	
8	Direct Current Circuits	
9	Midterm Exam	
10	Magnet Field/Magnetic field	

Assessment			
Evaluation Criteria	**Activity**	**Custom**	**Contribution to Success Grade (%)**
	Midterm Exams	1	40
	Quizzes		
	Assignments		
	Projects		
	Term Paper		
	Laboratory		
	Other		
	Final Exam	1	60
		Sum:	100
Remarks			

Content Design and Subject Weight (%)	Mathematics and Basic Sciences	*60*
	Engineering Sciences	*40*
	Social Sciences	
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

Workload (ECTS) Calculation			
Events	**Number**	**Duration (Hours)**	**Total workload (Hours)**
Fieldwork			

Midterm Exam Application	*1*	*3*	*3*
Self-Study (including pre-class and exam preparation)	*2*	*20*	*40*
Make-up Exam	*1*	*3*	*3*
Experiment and Observation			
Class Participation (Theory)	*14*	*4*	*56*
Homework			
Final Exam Practice	*1*	*3*	*3*
Laboratory			
Article Review			
Writing an Article			
Reading	*10*	*1*	*10*
Case Study			
Performance			
Problem Solution	*14*	*1*	*14*
Project Preparation			
Project Submission			
Quiz			
Report Preparation			
Submitting Reports			
Role/Drama Work			
Seminar			
Oral Exam			
Team/Group Work			
Argument	*14*	*1*	*14*
Application/Practice			
Other			
TOTAL WORKLOAD:			**148**
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**6**

	Learning Outcomes (LO) *(Course Outcomes)*	**Program Outcomes (PO)** *1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	Electric charge, electric field, Gauss law, electric potential, capacitors, dielectrics, current, resistance, direct current circuits, magnetic field, magnetic forces, magnetic field sources, electromagnetic induction, 1. To have information about inductance and alternating current	**5**	**4**	**3**	**3**	**4**	**5**	**3**	**4**	**3**	**3**	**3**
2	Learn the meaning of the basic laws of Electricity and Magnetism and how to apply these laws in solving problems.	**4**	**4**	**4**	**3**	**4**	**4**	**3**	**3**	**3**	**3**	**2**
3	Improves the ability to think and ask questions about physics topics	**5**	**4**	**4**	**3**	**4**	**3**	**3**	**4**	**4**	**3**	**2**
4	Gains the ability to apply knowledge of physics and mathematics.	**4**	**4**	**5**	**3**	**3**	**4**	**3**	**4**	**3**	**3**	**2**

Organizer: Prof. Dr. Fethi DAĞDELEN
Preparation Date: 20.05.2024

İşlem Basamakları:

1. Dersi öneren öğretim elemanı bu Formu hazırlar, iç ve dış paydaş görüşlerini alır ve dilekçe ekinde Bölüm/EABD/Program Başkanlığına sunar.
2. Öneri, bu Form dikkate alınarak önce Bölüm/EABD Kurulunda görüşülür ve sonra Birim Akademik Kurulunda müzakere edilerek karara bağlanır.
3. Birim Akademik Kurul kararı bu form ile birlikte EKOM görüşüne sunularak Senato gündemine alınmak üzere Genel Sekreterliğe üst yazı ile iletilir.
4. Senatoda kabul edilen dersleri ÖİDB ÖBS'ye işler ve ilgili Bölümü/EABD'nı ve Öğretim Elemanını bilgilendirir.
5. Süreç tamamlanır.

Ders Bilgisi

Course Code	T	P	L	C	ECTS	Type C/E	Dili TR/ENG etc.	Year/Semester
PHYS1110	0	0	2	1	2	C	TR	1/SPRİNG

Course Name (Turkish)	Genel Fizik Laboratuarı-II
Course Name (English)	**GENERAL CHEMISTRY LABORATORY -II**

Unit/ Program	Chemistry Department/Undergraduate Program
Course Prerefuisite	No prerequisites
Course Objectives	Teaching theories of electricity and magnetism through experiments.
Course Outline	Formation of groups and provision of information about the course, Van De Graff Generator and Load Concept, Examination of AC and DC Waves with the Help of Oscilloscope, Equipotential Curves, Reading of Resistances and Ohm's Law, Series and Parallel Connection of Resistances, Charging and Discharging of Capacitors, Wheatstone Bridge, Current Balance, Faraday's Law of Induction and Transformers, Compensation Experiments
Textbook/ Material / Resources	1. Serway Physics 1, Translated by Prof. Dr. Kemal ÇOLAKOĞLU, Palme Publishing, Ankara, 1995 2. Physics Principles 1, Frederick J. Bueche, David A. Jerde, Translated by Prof. Dr. Kemal ÇOLAKOĞLU, Palme Publishing, Ankara, 2000 3. Berkeley Physics Program (Mechanics), A. Ü. Faculty of Science Publications, 1975
Internship Status	

Course Precedents

University Name	Program Name	Course Name	T-P-L-C; ECTS	Type
Çukurova University	Chemistry	Physics Laboratory II	0-0-3-1.5-2	C

The instructor who proposed the course (Title, Name and Surname)	*Signature*
Doç. Dr. Seda HEKİM	
Instructors who can teach the course (Title, Name and Surname)	*Signature*

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)

Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.)

Stakeholder Name	Opinion (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution		
Week	**Theory**	**Application/Laboratory**
1		Introduction; Basic Laboratory Principles
2		Basic Quantities, Unit Systems, Physical Measurements and Errors
3		Reading Resistance Values
4		Series Connected Resistor Circuits
5		Parallel Connected Resistor Circuits
6		Ohm's law
7		Kirchhoff's law and Wheatstone bridge
8		Kirchhoff's law and Wheatstone bridge
9		**MIDTERM EXAM**
10		Biot-Savart law
11		Magnetic force
12		Faraday's law of induction
13		Faraday's law of induction
14		**MAKE-UP EXAM**
15		GENERAL EXAM

Assessment			
Evaluation Criteria	**Activity**	**Custom**	**Contribution to Success Grade (%)**
	Midterm Exams	1	40
	Quizzes		
	Assignments		
	Projects		
	Term Paper		
	Laboratuvar		
	Other		
	Final Exam	1	60
		Sum:	100
Remarks			

Content Design and Subject Weight (%))	Mathematics and Basic Sciences	*100*
	Engineering Sciences	
	Social Sciences	
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

İş Yükü (AKTS) Hesaplama			
Etkinlikler	**Sayı**	**Süre (Saat)**	**Toplam iş Yükü (Saat)**
Fieldwork			
Midterm Exam Application	*1*	*2*	*2*
Self-Study (including pre-class and exam preparation)			
Make-up Exam			
Experiment and Observation			
Class Participation (Theory)			
Homework	*14*	*1*	*14*
Final Exam Practice	*1*	*2*	*2*
Laboratory	*14*	*2*	*28*
Article Review			
Writing an Article			
Reading			
Case Study			
Performance			
Problem Solution			
Project Preparation			
Project Submission			
Quiz	*14*	*1*	*14*
Report Preparation			
Submitting Reports			
Role/Drama Work			
Seminar			
Oral Exam			
Team/Group Work			
Argument			
Application/Practice			
Other			
TOTAL WORKLOAD:			**60**
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**2**

	Program Outcomes (PO) / **Learning Outcomes (LO)** *(Course Outcomes)*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	She is confident in her knowledge in the field of chemistry and relates what she knows to life and industry.	**5**	**5**	**5**	**3**	**2**	**5**	**3**	**5**	**4**	**5**	**1**
2	Be able to monitor, perceive and evaluate global developments and trends in industry.	**5**	**5**	**5**	**2**	**2**	**2**	**4**	**2**	**2**	**2**	**1**
3	Gains awareness of lifelong learning and can renew his/her knowledge.	**5**	**4**	**5**	**1**	**1**	**1**	**2**	**1**	**5**	**2**	**1**
4	In applying knowledge, he/she understands the need to combine knowledge and can perceive total quality awareness.	**5**	**5**	**4**	**5**	**3**	**4**	**5**	**5**	**3**	**4**	**1**

Program Çıktıları, Öğrenci Bilgi Sistemine (OBS) entegre olan Bologna sayfasında tanımlı olan çıktılarla uyumlu şekilde işaretlenmelidir.

Tanımlamalar:

- T: *Teorik*, U: *Uygulama*, L: *Laboratuvar*, K: *Ulusal Kredi*, AKTS: *Avrupa Kredi Transfer Sistemi*, Z: *Zorunlu*, S: *Seçmeli*, EABD: *Enstitü Anabilim Dalı*
- *Dersin Dili* TR: *Türkçe*, İNG: *İngilizce*, ARP: *Arapça*, ALM: *Almanca*, vb.

Course Information								
Course Code	**T**	**P**	**L**	**C**	**ECTS**	**Type** C/E	**Language** TR/ENG etc.	**Year/Semester**
CHEM1104	**0**	**0**	**4**	**2**	**4**	**C**	**TR**	**1/SPRİNG**
Course Name (Turkish)	**Genel Kimya Laboratuvarı-2**							
Course Name (English)	**Chemistry Laborotuary-2**							

Unit/Program	Chemistry Department/Undergraduate Program
Course Prerequisite	No
Course Objectives	To ensure a better understanding of the subjects covered in theory by conducting basic experiments on the subjects included in the General Chemistry course content, and to develop the student's application habit by ensuring that they use laboratory tools and equipment during the experiment phase.
Course Outline	General Chemistry Experiments
Textbook/ Material / Resources	1 GENERAL CHEMISTRY 1 and 2 Petrucci HARWOOD Translation: Tahsin Uyar -Experiment Sheets
Internship Status	No

Course Precedents

University Name	**Program Name**	**Course Name**	**T-P-L-C; ECTS**	**Type**
İTÜ	**Chemistry**	**Chemistry Laborotuary-2**	**0-0-2-1;3**	**C**
Pamukkale University	**Biomedical Engineering**	**Chemistry Laborotuary-2**	**0-0-3-1;2**	**E**
İstanbul University	**Chemistry**	**Chemistry Laborotuary-2**	**0-0-4-2;3**	**C**

The instructor who proposed the course (Title, Name and Surname)	*Signature*
Prof.Dr.Kadir DEMİRELLİ	
Instructors who can teach the course (Title, Name and Surname)	*Signature*

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)

Renewal of course syllabuses.

Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)

Since the course is a practical course, it is held in the laboratory. In the course, chemical material recognition and general Chemistry Lab-2 course experiments will be carried out.

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.)

Stakeholder Name	**Opinion** (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution

Week	Theory	Application/Laboratory
1	Safety in the Laboratory and possible accidents	
2	Glassware used in the laboratory	
3		Volume and Weight Measurement
4		Solutions-1
5		Solutions-2
6		Investigation of Diffusion in Gases
7		Determination of Acid in Vinegar
8		Acid Base Titrations
9		**MIDTERM EXAM**
10		Buffer Solutions
11		Sublimation
12		Heat of Reaction and Hess's Law
13		Solubility Product Experiment
14		Determination of Atomic Weight
15		Reduction-Oxidation Reactions
16		**FINAL**

Assessment			
Evaluation Criteria	**Activity**	**Custom**	**Contribution to Success Grade (%)**
	Midterm Exams	1	20
	Quizzes	12	20
	Assignments		
	Projects		
	Term Paper		
	Laboratory		
	Other		
	Final Exam	1	60
		Sum:	100
Remarks			

Content Design and Subject Weight (%)	Mathematics and Basic Sciences	*100*
	Engineering Sciences	
	Social Sciences	
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

Workload (ECTS) Calculation

Events	Number	Duration (Hours)	Total workload (Hours)
Fieldwork			
Midterm Exam Application	*1*	*2*	*2*
Self-Study (including pre-class and exam preparation)	*9*	*2*	*18*
Make-up Exam	*1*	*2*	*2*
Experiment and Observation	*9*	*2*	*18*
Class Participation (Theory)			
Homework			
Final Exam Practice	*1*	*2*	*2*
Laboratory	*14*	*4*	*56*
Article Review			
Writing an Article			
Reading			
Case Study			
Performance			
Problem Solution			
Project Preparation			
Project Submission			
Quiz	*12*	*1*	*12*
Report Preparation			
Submitting Reports			
Role/Drama Work			
Seminar			
Oral Exam			
Team/Group Work			
Argument			
Application/Practice			
Other			
TOTAL WORKLOAD:			**110**
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**4**

	Learning Outcomes (LO) *(Course Outcomes)*	**Program Outcomes (PO)** *1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	To be informed about laboratory rules and safety	**5**	**2**	**2**	**1**	**5**	**5**	**5**	**2**	**3**	**4**	**1**
2	Identify the materials used in the Chemistry Laboratory.	**4**	**5**	**5**	**1**	**5**	**5**	**4**	**4**	**4**	**5**	**1**
3	Supporting chemistry knowledge with experiments	**4**	**5**	**5**	**1**	**5**	**5**	**4**	**4**	**4**	**5**	**1**
4	To practice basic experiment techniques and some device usage practices.	**4**	**5**	**5**	**1**	**5**	**5**	**4**	**4**	**4**	**5**	**1**
5	To help them understand the connection between daily life and chemicals	**4**	**3**	**5**	**1**	**4**	**4**	**4**	**1**	**5**	**4**	**11**

Course Information								
Course Code	**T**	**P**	**L**	**C**	**ECTS**	**Type** C/E	**Language** TR/ENG etc.	**Year/Semester**
CHEM1102	**6**	**0**	**0**	**6**	**8**	**C**	**TR**	**1/SPRİNG**
Course Name (Turkish)	**Genel Kimya II**							
Course Name (English)	**General Chemistry II**							

Unit/Program	Chemistry Department/Undergraduate Program
Course Prerequisite	No
Course Objectives	The aim of this course is to emphasize the importance of the concept of chemical bonds to students, to examine the effects of intermolecular forces on the physical state of matter and their physical properties, to examine the kinetic behavior of matter, to teach the concept of acid and base, to explain electrochemistry and nuclear chemistry and to make students comprehend them.
Course Outline	Chemical bonds, Intermolecular forces: Liquids and solids, Solutions and their physical properties, Chemical kinetics, chemical equilibrium, Acids-Bases, Electrochemistry and Nuclear Chemistry
Textbook/ Material / Resources	1. Petrucci & Harwoord, Translation editor: Tahsin Uyar, General Chemistry: Principles and Modern Applications, Palme Publishing 2. Raymond CHANG, Translation editors: Prof. Dr. Tahsin UYAR, Prof. Dr. Serpil AKSOY, Assoc. Prof. Dr. Recai İNAM, General Chemistry Basic Concepts, Palme Publishing
Internship Status	No

Course Precedents

University Name	**Program Name**	**Course Name**	**T-P-L-C; ECTS**	**Type**
Marmara University	**Chemistry**	**General Chemistry**	**4-0-0-4; 6**	**C**
Gazi University	**Chemistry**	**General Chemistry**	**4-0-0-4; 6**	**C**
Eskişehir Osmangazi University	**Chemistry**	**General Chemistry**	**5-0-0-5; 7**	**C**

The instructor who proposed the course (Title, Name and Surname)	*Signature*
Prof.Dr.Kadir DEMİRELLİ	
Instructors who can teach the course (Title, Name and Surname)	*Signature*

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)
Understanding of the basic subjects of chemistry, Acquiring theoretical knowledge, Ability to identify, define, analyze and solve problems in chemistry and related fields, Making students comprehend the subjects specified in the course content as part of the basic subjects of chemistry and relating them to other branches of chemistry.

Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)
Face-to-face verbal presentation, online in exceptional cases

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.)	
Stakeholder Name	**Opinion** (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution		
Week	**Theory**	**Application/ Laboratory**
1	Chemical Bond I	
2	Chemical Bonding II: Bonding Theories	
3	Intermolecular Forces	
4	Liquids and Solids	
5	Solutions and Physical Properties	
6	Continued Solutions and Physical Properties/Chemical Kinetics	
7	Continued Chemical Kinetics	
8	Chemical balance	
9	**MIDTERM EXAM**	
10	Acids and Bases	
11	Acid and Base Equilibrium	
12	Spontaneous Change: Entropy and Gibbs Energy	
13	Electrochemistry	
14	Nuclear Chemistry	
15	**FINAL**	

Assessment			
Evaluation Criteria	**Activity**	**Custom**	**Contribution to Success Grade (%)**
	Midterm Exams	1	40
	Quizzes		
	Assignments		
	Projects		
	Term Paper		
	Laboratory		
	Other		
	Final Exam	1	60
		Sum:	100
Remarks			

Content Design and Subject Weight (%)	Mathematics and Basic Sciences	*100*
	Engineering Sciences	
	Social Sciences	
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

Workload (ECTS) Calculation

Events	Number	Duration (Hours)	Total workload (Hours)
Fieldwork			
Midterm Exam Application	*1*	*3*	*2*
Self-Study (including pre-class and exam preparation)	*3*	*15*	*45*
Make-up Exam	*1*	*3*	*2*
Experiment and Observation			
Class Participation (Theory)	*14*	*6*	*84*
Homework			
Final Exam Practice	*1*	*3*	*2*
Laboratory			
Article Review			
Writing an Article			
Reading			
Case Study			
Performance			
Problem Solution	*14*	*2*	*28*
Project Preparation			
Project Submission			
Quiz			
Report Preparation			
Submitting Reports			
Role/Drama Work			
Seminar			
Oral Exam			
Team/Group Work			
Argument	*14*	*2*	*28*
Application/Practice			
Other			
TOTAL WORKLOAD:			**191**
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**8**

	Program Outcomes (PO) / **Learning Outcomes (LO)** *(Course Outcomes)*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	Be able to interpret chemical bonds and the formation of chemical bonds.	**5**	**4**	**3**	**2**	**1**	**4**	**3**	**4**	**3**	**4**	**0**
2	Understand that intermolecular interactions determine the physical state of matter.	**5**	**3**	**2**	**3**	**0**	**3**	**5**	**4**	**3**	**3**	**1**
3	Understand the meaning of the terms Chemical Kinetics and equilibrium and the concepts related to measuring reaction rates.	**5**	**3**	**4**	**5**	**0**	**4**	**3**	**3**	**4**	**4**	**1**
4	Understand the concept of Acid-Base as concepts frequently encountered in daily life and as an environmental problem, and the concept of pH.	**5**	**3**	**3**	**4**	**1**	**4**	**1**	**4**	**3**	**4**	**1**
5	Learn how chemical reactions can be used to produce electricity and how electricity can cause chemical reactions.	**5**	**5**	**4**	**4**	**0**	**4**	**4**	**5**	**3**	**4**	**1 1**

Course Information								
Course Code	**T**	**P**	**L**	**C**	**ECTS**	**Type** C/E	**Language** TR/ENG etc.	**Year/Semester**
MAT1142	**4**	**0**	**0**	**4**	**6**	**C**	**TR**	**1/SPRING**
Course Name (Turkish**)**	**Analiz II**							
Course Name (English**)**	**Analysis II**							

Unit/Program	Chemistry Department/Undergraduate Program
Course Prerequisite	No
Course Objectives	1. To create an advanced level of comprehensive information infrastructure for lists to help with professional courses. 2. To provide students with the ability to think deeply, interpret, and solve problems.
Course Outline	Improper integrals, functions of several variables, double integrals
Textbook/ Material / Resources	1. 1. Calculus II, General Mathematics (Prof. Dr. M. BALCI) 2. 2. A Complete Course Calculus (Robert A. ADAMS) 3. 3. Solved Mathematics Analysis Problems II. (Prof. Dr. M. BALCI)
Internship Status	No

Course Precedents

University Name	**Program Name**	**Course Name**	**T-P-L-C; ECTS**	**Type**
				C
				C
				C

The instructor who proposed the course (Title, Name and Surname)	*Signature*
Prof. Dr. Erdal BAŞ	
Instructors who can teach the course (Title, Name and Surname)	*Signature*

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)

.

Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.)

Stakeholder Name	**Opinion** (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution

Week	**Theory**	**Application/ Laboratory**
1	Generalized Integral types	

2	Simple solutions of Generalized Integral types	
3	Sequences: definition, types, monotonic and bounded series, subsequence, convergence and divergence of series	
4	Series: Definition, convergence and divergence, positive term series and convergence tests.	
5	Alternating series, absolute and conditional convergence, power series, radius and range of convergence	
6	Power Series, Taylor and Maclaurin expansions	
7	Multivariable Functions: Definition, domain, graphs	
8	Limit and continuity in functions of two variables	
9	Partial derivatives and applications	
10	Maximum minimum problems	
11	Area transformations and Jacobians	
12	Double Integrals: definition, properties, calculation	
13	Double integrals in polar coordinates and calculation	
14	Application of double integrals: Area calculation	
15	Application of double integrals: Volume calculation	

Assessment			
Evaluation Criteria	**Activity**	**Custom**	**Contribution to Success Grade (%)**
	Midterm Exams	1	40
	Quizzes		
	Assignments		
	Projects		
	Term Paper		
	Laboratory		
	Other		
	Final Exam	1	60
		Sum:	100
Remarks			

Content Design and Subject Weight (%)	Mathematics and Basic Sciences	*100*
	Engineering Sciences	
	Social Sciences	
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

Workload (ECTS) Calculation			
Events	**Number**	**Duration (Hours)**	**Total workload (Hours)**
Fieldwork			

Midterm Exam Application	*1*	*3*	*3*
Self-Study (including pre-class and exam preparation)	*3*	*15*	*45*
Make-up Exam	*1*	*3*	*3*
Experiment and Observation			
Class Participation (Theory)	*14*	*4*	*56*
Homework			
Final Exam Practice	*1*	*3*	*3*
Laboratory			
Article Review			
Writing an Article			
Reading	*7*	*1*	*7*
Case Study			
Performance			
Problem Solution	*14*	*1*	*14*
Project Preparation			
Project Submission			
Quiz			
Report Preparation			
Submitting Reports			
Role/Drama Work			
Seminar			
Oral Exam			
Team/Group Work			
Argument			
Application/Practice			
Other			
TOTAL WORKLOAD:			**145**
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**6**

	Learning Outcomes (LO) *(Course Outcomes)*	**Program Outcomes (PO)** *1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	They can learn the concepts of sequences and series and examine their convergence with some tests.	**5**	**2**	**3**	**1**	**2**	**3**	**4**	**3**	**1**	**2**	**3**
2	They learn to find limits and continuity of functions of several variables.	**5**	**4**	**4**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**2**
3	They learn to find the derivatives of multivariable functions.	**3**	**3**	**4**	**3**	**4**	**2**	**3**	**4**	**4**	**4**	**1**
4	Learn to calculate double integrals	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**4**	**4**	**3**	**1**
5	Learn to calculate area-volume with double integrals.	**2**	**2**	**2**	**3**	**2**	**2**	**2**	**2**	**3**	**3**	**1**

Course Information								
Course Code	**T**	**P**	**L**	**C**	**ECTS**	**Type** C/E	**Language** TR/ENG etc.	**Year/Semester**
TRD110	**2**	**0**	**0**	**2**	**2**	**C**	**TR**	**1/SPRING**
Course Name (Turkish**)**	Türk Dili II							
Course Name (English**)**	**Turkish Language II**							

Unit/Program	Chemistry Department/Undergraduate Program
Course Prerequisite	No
Course Objectives	To teach the morphology of Turkish, to ensure that spelling and punctuation marks are used appropriately, to teach the elements and types of sentences, to teach the skills of writing and speaking without making any mistakes in expression, to teach the skills of making presentations in front of an audience, and to teach the skills of examining scientific texts and taking notes.
Course Outline	Composition Information, Literary Types, Scientific Research and Writing Methods, Spelling Rules, Punctuation Marks, Elements of the Sentence, Sentence: Analysis and Application, Studies on Expression and Sentence Disorders.
Textbook/ Material / Resources	1. Turkish Language, Anadolu University Publications, No:786, Eskişehir, 2003. 2. Turkish Language Oral and Written Expression, Uğur, A., Ekspres Printing House, Kütahya, 2002.
Internship Status	No

Course Precedents

University Name	**Program Name**	**Course Name**	**T-P-L-C; ECTS**	**Type**

The instructor who proposed the course (Title, Name and Surname)	*Signature*
Uzaktan Eğitim Koordinatörü Okutman Mustafa UZUN	
Instructors who can teach the course (Title, Name and Surname)	*Signature*

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)

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Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.)

Stakeholder Name	**Opinion** (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution

Week	Theory	Application/ Laboratory
1	Morphology (Noun roots, verb roots, binary roots) Presentation, poem, essay, composition, story, newspaper, magazine studies and applications, book introductions. Bracket (parenthesis), square bracket.	
2	Morphology (suffixes in Turkish language; suffixes that make nouns from nouns, suffixes that make verbs from nouns). Presentation, poem, essay, composition, story, newspaper, magazine studies and applications, book introductions. Writing of numbers.	
3	Morphology (suffixes that make nouns from verbs, suffixes that make verbs from verbs). Presentation, poem, essay, composition, story, newspaper, magazine studies and applications, book introductions. Correction mark.	
4	Morphology (Inflectional suffixes; inflectional suffixes that come with nouns, inflectional suffixes that come with verbs). Presentation, poem, essay, composition, story, newspaper, magazine studies and applications, book introductions. Apostrophe.	
5	Word groups. Presentation, poem, essay, composition, story, newspaper, magazine studies and applications, book introductions. Writing of words that do not fit at the end of the line.	
6	Word groups. Presentation, poem, essay, composition, story, newspaper, magazine studies and applications, book introductions. Quotation marks.	
7	Sentence (Elements of a sentence; predicate, subject, object, indirect object, adverbial object). Presentation, poem, essay, composition, story, newspaper, magazine studies and applications, book introductions. Ellipsis, slash.	
8	Sentence (Types of sentences; Simple sentence, compound sentence, sequential sentence, connected sentence).	
9	**MIDTERM EXAM**	
10	Presentation, poetry, essay, composition, story, newspaper, magazine studies and applications, book introductions. Short dash, long dash.	
11	Cümle (Cümle çeşitleri, cümle tahlilleri) Sunum, şiir, deneme, kompozisyon, hikâye, gazete, dergi çalışmaları ve uygulamaları, kitap tanıtmaları. Yabancı özel adların yazılışı.	
12	Anlatım bozuklukları. Sunum, şiir, deneme, kompozisyon, hikâye, gazete, dergi çalışmaları ve uygulamaları, kitap tanıtmaları. Ünlem işareti.	
13	Anlatım bozuklukları. Sunum, şiir, deneme, kompozisyon, hikâye, gazete, dergi çalışmaları ve uygulamaları, kitap tanıtmaları. Mastar eklerin yazılışı. Anlatım biçimleri. Sunum, şiir, deneme, kompozisyon, hikâye, gazete, dergi çalışmaları ve uygulamaları, kitap tanıtmaları. Noktalama işaretlerinin uygulaması. İnceleme yazıları, anlatım biçimleri. Sunum, şiir, deneme, kompozisyon, hikâye, gazete, dergi çalışmaları ve uygulamaları, kitap tanıtmaları. Noktalama işaretlerinin uygulaması.	

14	MAKE-UP EXAM	
15	**FINAL**	

Assessment			
Evaluation Criteria	**Activity**	**Custom**	**Contribution to Success Grade (%)**
	Midterm Exams	1	20
	Quizzes		
	Assignments		
	Projects		
	Term Paper		
	Laboratory		
	Other		
	Final Exam	1	80
		Sum:	100
Remarks			

Content Design and Subject Weight (%)	Mathematics and Basic Sciences	
	Engineering Sciences	
	Social Sciences	*100*
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

Workload (ECTS) Calculation			
Events	**Number**	**Duration (Hours)**	**Total workload (Hours)**
Fieldwork			
Midterm Exam Application			
Self-Study (including pre-class and exam preparation)			
Make-up Exam			
Experiment and Observation			
Class Participation (Theory)			
Homework			
Final Exam Practice			
Laboratory			
Article Review			
Writing an Article			
Reading			
Case Study			
Performance			
Problem Solution			
Project Preparation			
Project Submission			
Quiz			
Report Preparation			
Submitting Reports			
Role/Drama Work			

Seminar			
Oral Exam			
Team/Group Work			
Argument			
Application/Practice			
Other			
TOTAL WORKLOAD:			
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**2**

	Learning Outcomes (LO) *(Course Outcomes)*	**Program Outcomes (PO)** *1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	Knows the morphology of Turkish and uses spelling and punctuation marks appropriately.	**5**	**5**	**5**	**3**	**2**	**5**	**3**	**5**	**4**	**5**	**1**
2	She acquires the habit of reading books and follows daily newspapers and other periodicals.	**5**	**5**	**5**	**2**	**2**	**2**	**4**	**2**	**2**	**2**	**1**
3	Speaks Turkish in a correct, beautiful and successful manner and has the ability to express himself/herself.	**5**	**4**	**5**	**1**	**1**	**1**	**2**	**1**	**5**	**2**	**1**
4	Have the ability to make presentations in front of the public, express their knowledge and ideas at a level that others can understand, and use effective communication.	**5**	**5**	**4**	**5**	**3**	**4**	**5**	**5**	**3**	**4**	**1**

Course Information								
Course Code	**T**	**P**	**L**	**C**	**ECTS**	**Type** C/E	**Language** TR/ENG etc.	**Year/Semester**
YDİ108	**2**	**0**	**0**	**2**	**2**	**C**	**TR**	**1/SPRING**
Course Name (Turkish**)**	Yabancı Dil II							
Course Name (English**)**	**Foreign Language II**							

Unit/Program	Chemistry Department/Undergraduate Program
Course Prerequisite	No
Course Objectives	This course aims to help students: Have basic grammar in English at A2 level for undergraduate level, Understand short passages they listen to, Be able to converse using basic patterns, Understand what they read, Be able to express themselves in writing.
Course Outline	Making positive/negative and questions with the structures 'There is..., there are...', using quantity determiners like 'a lot of/ some/ a little/ a few' with countable, plural and uncountable nouns; using prepositions of place like 'on/ under/ below', making suggestions with structures like 'let's/ shall we...', asking for help and making requests with the structures 'can/ could you...?', talking about preferences using the form would like; asking frequency with the interrogative form 'how often...?' and responding using frequency adverbs like 'never/ rarely/ usually'; making positive-negative questions in the past tense with regular and irregular verbs, asking reasons using the interrogative word 'why...?' and stating reasons with the conjunction 'because...'; using equality, superlative and most superlative structures of adjectives and adverbs.
Textbook/ Material / Resources	1. Full Steam Ahead, 8th ed., Gündüz Education and Publishing, Ankara. 2. Turkish-English Dictionary
Internship Status	No

Course Precedents

University Name	**Program Name**	**Course Name**	**T-P-L-C; ECTS**	**Type**

The instructor who proposed the course (Title, Name and Surname)	*Signature*
Uzaktan Eğitim Koordinatörü	
Instructors who can teach the course (Title, Name and Surname)	*Signature*

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)
.

Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of

the course will be specified. Proof documents must be attached to this form.)	
Stakeholder Name	**Opinion** (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution		
Week	**Theory**	**Application/ Laboratory**
1	**Teori**	
2	Terry's Friends! a. there is…, there are… with positive, negative and interrogative forms	
3	Terry's Friends! a. a lot of, some, a few, few, any c. a lot of, some, a little, little, any	
4	Where is it? a. prepositions of place (on, in, near, next to…) b. making suggestions (let's, shall we…)	
5	Where is it? a. asking for help (can you…?, could you…?) b. preference (…would…like…?, I'd like…)	
6	How often are you late for classes? a. how often…? b. do/ does…ever…? Voc. Teaching.	
7	General Revision and Quiz and voc. Teaching.	
8	Past tense. definite past with regular verbs with positive, negative and interrogative forms	
9	**MIDTERM EXAM**	
10	Who painted the Mona Lisa? a. definite past with irregular verbs b. why…? because…	
11	I'd like to be fitter! a. positive forms of adjectives and adverbs: as…as, not as/ so…as	
12	I'd like to be fitter! a. comparative and superlative forms of adjectives:…er than, the…est, more…than, … the most,Making suggestions in English.	
13	I'd like to be fitter! a. comparative and superlative forms of adjectives: more…than, most…	
14	**MAZERET SINAVI**	
15	GENEL SINAV	

Assessment			
Evaluation Criteria	**Activity**	**Custom**	**Contribution to Success Grade (%)**
	Midterm Exams	1	20
	Quizzes		
	Assignments		
	Projects		
	Term Paper		
	Laboratory		
	Other		
	Final Exam	1	80
		Sum:	100
Remarks			

Content Design and Subject Weight (%)	Mathematics and Basic Sciences	
	Engineering Sciences	

	Social Sciences	*100*
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

Workload (ECTS) Calculation			
Events	**Number**	**Duration (Hours)**	**Total workload (Hours)**
Fieldwork			
Midterm Exam Application			
Self-Study (including pre-class and exam preparation)			
Make-up Exam			
Experiment and Observation			
Class Participation (Theory)			
Homework			
Final Exam Practice			
Laboratory			
Article Review			
Writing an Article			
Reading			
Case Study			
Performance			
Problem Solution			
Project Preparation			
Project Submission			
Quiz			
Report Preparation			
Submitting Reports			
Role/Drama Work			
Seminar			
Oral Exam			
Team/Group Work			
Argument			
Application/Practice			
Other			
TOTAL WORKLOAD:			
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**2**

	Program Outcomes (PO)	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
	Learning Outcomes (LO) *(Course Outcomes)*											
1	To be able to follow the information in the	**5**	**5**	**5**	**3**	**2**	**5**	**3**	**5**	**4**	**5**	

	field and communicate with colleagues by using a foreign language at least at the European Language Portfolio B1 General Level											**1**
2	To be able to use computer software and information and communication technologies with at least the advanced level of the European computer usage license required by the field	**5**	**5**	**5**	**2**	**2**	**2**	**4**	**2**	**2**	**2**	**1**
3	To have the ability to make oral and written presentations in the native language	**5**	**4**	**5**	**1**	**1**	**1**	**2**	**1**	**5**	**2**	**1**
4	To have the ability to understand spoken English and use English at the reading level	**5**	**5**	**4**	**5**	**3**	**4**	**5**	**5**	**3**	**4**	**1**