COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	151811204	COURSE NAME	Chemistry

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	**Practice**	**Laboratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
1st	3	0	0	3	3	COMPULSORY (3) ELECTIVE ( )	ENGLISH

COURSE CATAGORY				
Basic Science	**Basic Engineering**	**Engineering Subjects** [if it contains considerable design, mark with (√)]		**Social Science**
100		( )		

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	The properties of material and measurements, atoms and atomic theory, periodic table chemical compounds, chemical reactions stoichiometry, gases and gas mixtures, chemical thermodynamics.
COURSE OBJECTIVES	To introduce the main subjects of chemistry, to give the fundamentals of chemistry to the engineering students.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	To gain the basic knowledge and concepts of chemistry and to understand the relation of chemistry with other sciences and engineering, to gain the capability to define and solve the problems of chemistry.
COURSE OUTCOMES	By the end of this course the students will be able to: 1. Define, classify and explain the properties of materials, 2. Explain the concepts of atoms and atomic theory, 3. Explain and use the mole concepts and the Avogadro's law, 4. Explain and classify the chemical compounds, 5. Define, explain and use the relationship of the gaseous state, the properties of gases and gas laws, 6. Define the basic concepts of thermodynamics, explain the law of thermodynamics and use them in solving the thermochemistry problems.
TEXTBOOK	Petrucci, H., Harwood, W. S., Herring, F. G., 2002 "Genel Kimya: İlkeler ve Modern Uygulamalar" (I. Cilt), Çeviri Editörleri: Uyar. T., Aksoy, S., Palme Yayıncılık, Ankara.
OTHER REFERENCES	1. Mortimer, C. E. , 1988, Modern Üniverse Kimyası, I. ve II. Cilt, Çağlayan Kitabevi, İstanbul 2. Sienko, M. J., Plane, R. A., 1983, Temel Kimya, Savaş

	Yayınları, Ankara.
	3. Erdik, E., Sarıkaya, Y., 1987, Temel Üniversite Kimyası, Hacettepe Taş Kitapçılık, Ankara.
TOOLS AND EQUIPMENTS REQUIRED	Explain topics and solving related problems.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Matter-Its properties and measurement. The scope of chemistry, the scientific method, properties and classification of matter, measurements of matter, uncertainties in scientific measurements.
2	Atoms and the atomic theory, early chemical discoveries and the atomic theory, electrons and other discoveries in atomic physics, atomic masses, chemical elements.
3	Introduction to the periodic table, the concept of the mole, the Avogadro constant, using the mole concept in calculation.
4	Chemical compounds, types of chemical compounds and their formulas, the mole concept and chemical compounds, composition of chemical compounds.
5	Chemical compounds; oxidation states; A useful toll in describing chemical compounds, naming organic and inorganic compounds.
6	Chemical reactions and chemical equation, the chemical equation and stoichiometry, chemical reaction in solution.
7	Chemical reactions and chemical equation, Determining the limiting reactant, other practical matters.
8	Mid-Term Examination
9	Mid-Term Examination
10	Gases: Properties of gases; gas pressure, the simple gas laws
11	Gases: Aplication of the ideal gas equation.
12	Gases in chemical reaction, mixtures of gases, kinetic-molecular theory of gases, non-ideal gases.
13	Thermochemistry, getting started; some terminology, work, heat, heat of reaction and calorimetry.
14	Thermochemistry: The first law of thermodynamics, heat of rection. ΔE and ΔH, Indirect determination of ΔH, Hess's law, standard enthalpies of formation, fuels as sources of energy.
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	[ ]	[x]	[ ]
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	[ ]	[x]	[ ]
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	[ ]	[x]	[ ]
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	[ ]	[x]	[ ]
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[ ]	[x]	[ ]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[ ]	[x]	[ ]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[ ]	[x]	[ ]
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	[ ]	[x]	[ ]
9	Understanding of professional and ethical issues and taking responsibility	[ ]	[ ]	[x]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[ ]	[x]	[ ]
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	[ ]	[x]	[ ]
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: **Date:**

Signature(s):