SCHOOL	FACULTY OF ENVIRONMENT		
ACADEMIC UNIT	FOOD SCIENCE AND TECHNOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**FST103**	**SEMESTER**	**1**
COURSE TITLE	**GENERAL AND INORGANIC CHEMISTRY**		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercise, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	3	
Laboratory experiments	2	
Total	5	7
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *General background, special background, specialised general knowledge, skills development*	General background
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	

LEARNING OUTCOMES

Learning Outcomes

The course earning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.
Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

Upon succesful completion of the course the student will be able to:

- Define the fundamental principles of Chemistry
- Identify and apply the elementary rules and processes in a chemical laboratory
- Acknowledge and use essential apparatus and instruments in a chemical laboratory
- Analyse and interpret experimental measurements to produce reliable results

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology *Adapting to new situations*	*Project planning and management* *Respect for difference and multiculturalism* *Respect for the natural environment* *Showing social, professional and ethical responsibility and sensitivity to gender issues*

Decision-making *Working independently* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*	*Criticism and self-criticism* *Production of free, creative and inductive thinking* *.....* *Others...* *.....*

- Adapting to new situations
- Data collection and analysis
- Critical thinking
- Decision-making
- Working independently
- Team work

SYLLABUS

Atomic structure, atomic and mass numbers, isotopes, chemical bonds, molecules, ionic and molecular bonds, dipole moment. Intermolecular forces. Complex compounds. Chemical formulas, the concept of mole. Solutions, colloids, solubility, ways of expressing the concentration of solutions. Solubility product. Naming inorganic compounds. Chemical reactions and chemical equations, stoichiometry.

Electrolyte dimensioning and ionization, acids, bases, salts, pH / pOH, indicators, neutralization reactions, acid-base titrations. Hydrolysis of salts. Buffers. Common ion effect.

Reaction rate, chemical equilibrium, Le Chatelieur principle.

Redox reactions.

Radioisotopes.

Spectrophotometry.

Typical lab experiments

- Introduction - Lab safety rules - Lab apparatus
- Lab balance - Weighing
- Solution preparation - Solution dilution - Solution mixing
- pH - Indicators
- Buffers - Determination Ka for a weak acid
- Acidimetry - Alkalimetry
- Preparation and titration of standard solutions of acids and bases
- Heterogeneous equilibrium – Solubility product
- Qualitative analysis of anions and cations
- Spectrophotometry

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	In class
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of information technologies in data collection, teaching and communication. Communication with students via e-mail, eClass, Viber.
TEACHING METHODS	

Activity	***Semester workload***
Lectures	117 hours

The manner and methods of teaching are described in detail. *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*		
	Laboratory experiments	26 hours
	Total contact hours and training	**143 hours**
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	• Language of assessment: Greek • Evaluation methods - Midterm exam - Final exam	

BIBLIOGRAPHY

- D. Ebbing, S. Gammon, General Chemistry
- D. A. Skoog, D. M. West, F. James Holler, S. R. Crouch, Fundamentals of Analytical Chemistry

Performance Statistics of the last 2years			
Grade (descending order)	**absolute frequency**	**relative frequency %**	**sum of success rates per class**
INORGANIC CHEMISTRY			
10	13	8%	8%
9	12	8%	16%
8	26	17%	33%
7	33	22%	55%
6	69	45%	100%
	153	100%	