COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	FOOD SCIENCE AND TECHNOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	FST_102	**SEMESTER OF STUDIES**	FIRST
COURSE TITLE	GENERAL and INORGANIC CHEMISTRY		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, 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 practice	2	
TOTAL	**5**	**5**
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:	Typically, there are no prerequisite courses.
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	

2. LEARNING OUTCOMES

Learning outcomes

The course learning 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*

The scope of this course is the teaching of main chemical principles and laws. Moreover this course introduces the student to the most recent information on subjects as energy, new advances in materials and environmental issues. Students will understand the scientific bases for making the important personal choices demanded for the use of chemicals and chemical products and how chemistry research and development will affect the quality of human life.

By the end of this course every student is expected to have obtained i) main chemical principles within the framework of real-world applications ii) identification of chemical bond type iii) physicochemical properties and applications of main inorganic compounds iv) chemical equilibrium, chemical equilibrium of weak acid and bases, v) importance of buffer solutions, vi) neutralization and hydrolysis vii)concentration estimation viii)pH estimation of various solutions and mixtures ix)redox reactions and applications.

Furthermore students will obtain the necessary knowledge that will help them to understand the content of next courses as "Food Chemistry", "Food Technology", "Food Safety", "Organic Chemistry"

By the end of this course every student will be familiar with the use of reagents, solvents and basic laboratory techniques such as: solution preparation, mixture's components separation, qualitative analysis, quantitative analysis, titration and applications, pH measurement, solution's conductivity measurement.

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

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

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

Criticism and self-criticism

Production of free, creative and inductive thinking

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Others…

…….

Generally, by the end of this course the student will have develop the following general abilities (from the list above):

Autonomous (Independent) work
Group work
Adapting to new situations
Promotion of free, creative and inductive thinking
Respect for the natural environment
Project planning and management

3. SYLLABUS

Living in a world of Chemistry. Introduction (atomic theory, periodic table). Nuclear reactions-nuclear energy, Chemical bonds. Liquids and solutions, Chemical equilibrium - ionic equilibria in aqueous solutions (acids and bases, hydrolysis, buffer solutions, precipitation, titration). Oxidation-reduction reactions, galvanic cells. Chemical thermodynamics. Chemical kinetics. Basic Laboratory techniques. Solutions preparation. Mixture's components separation. Qualitative Analysis. Quantitative Analysis. Titration. pH estimation. Solution's conductivity estimation.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY
Face-to-face, Distance learning, etc.

Lectures and laboratory work face to face.

USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students

Use of Information and Communication Technologies (ICTs) (e.g. power-point) in teaching. The lectures content of the course for each chapter are uploaded on the internet, in the form of pdf files, where from the students can freely download them using a password which is provided to them at the beginning of the studies.

Use of ITCs (power-point) providing information on the theory and practice of the laboratory experiments

TEACHING METHODS

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

Activity	***Semester workload***
Lectures	39
Laboratory work	20
Laboratory reports	16
Final examination	3
Hours for private study of the student	47
Total number of hours for the Course (25 hours of work-load per ECTS credit)	***125***

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,

1. Written examination after the end of the semester. The mark constitutes the 75% of the final grade ($G_{75\%}$).
   Minimum passing grade: 5.
2. Reports following completion of each laboratory experiment. The mean mark constitutes the other 25% of the final grade ($G_{25\%}$).
   Minimum passing grade: 5.

The final grade for the course is calculated by the final grade in the Lab (25%) and the grade of the final written examination (75%). The student must have secured a minimum grade of 5 in both Lab and the final written examination.

other *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	

5. ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

1.General Chemistry, Ebbing-Gammon, translation in Greek by N. Klouras, Travlos Publishing
2.General and Inorganic Chemistry, in Greek, M. Lalia-Kantouri, S. Papastefanou, ZHTH Publishing, Thes/niki
3. World of Chemistry, 2nd Edition, Joesten and Wood, Saunders College Publishing
4. Notes for Laboratory of General Chemistry, A. Ladavos, in Greek

- *Related academic journals:*