



Course Code NURS-104	Course Title Chemistry for Nursing	ECTS Credits 3
Prerequisites None	Department Life and Health Sciences	Semester Fall, Spring
Type of Course Required	Field Chemistry	Language of Instruction English or Greek
Level of Course 1 st Cycle	Lecturer(s) Dr Marios Stylianou	Year of Study 1 st
Mode of Delivery Face-to-face	Work Placement N/A	Co-requisites None

Objectives of the Course:

The main objectives of the course are to:

- present only that chemistry that is essential to the student's needs in the field of general, organic and biological chemistry.
- provide students with many examples of chemistry in health care and other applications in real life.
- contribute to the broad educational experience of students by fostering analytical and critical thinking, and problem-solving skills.

Learning Outcomes:

After completion of the course students are expected to be able to:

- Use the concept of significant figures in calculations and in particular to apply the rules of significant figures using density to determine the percentage of body fat.
- Explain clues that atomic structure provides, to understand the basic trends in the Periodic Table of chemical elements, referring to minerals in nutrition and radiation in food web.
- Discuss the basic principles of chemical bonding and that atoms gain, lose, or share electrons to form the ions and molecules found in matter.
- Understand the language of chemistry, in terms of formulas and equations in order to describe chemical reactions, referring as connection that haemoglobin's iron ions help transport oxygen in the blood.
- Explain the difference between solutions, dispersions and suspensions and that mixtures differ in composition, concentrations and properties.
- Discuss the solubility of substances in terms of polar and non-polar media.
- Classify acids, bases and salts, calculate the pH and how a buffer solution works, referring as a connection the buffering of blood.
- Understand the basic principles of organic chemistry, in terms of saturated and unsaturated hydrocarbons and the major organic functional groups.

- Explain and discuss organic chemistry issues towards biological sense such as ethers as anaesthetics, phenol as antiseptics and disinfectants, aspirin structure, carbohydrates and nutrition, correlations between lipids and health.

Course Contents:

1. The Principles and Tools of Science: measurements and units.
2. Atomic Structure and the Periodic Table of Chemical Elements.
3. Chemical Bonding (Ionic and Covalent): Atoms, Ions and Molecules.
4. The Language of Chemistry: Formulas, Equations and Chemical Reactions.
5. States of Matter: Gases, Liquids and Solids.
6. Solutions, Dispersions and Suspensions (Osmosis).
7. Acids, Bases and Salts: ionisation of water/electrolytes, pH and buffer solutions.
8. An Introduction to Organic Chemistry: Saturated and Unsaturated Hydrocarbons.
9. Biological sense of organic chemistry.

Learning Activities and Teaching Methods:

Lectures, Exercises-Assignments, Workshops

Assessment Methods:

Laboratory Practical Sessions, Tests, Final Examination

Required Textbooks / Reading:

Title	Author(s)	Publisher	Year	ISBN
Essentials of General, Organic, & Biological Chemistry	M. T. Arnold	Harcourt College Publishers	2001	0-03-005648-9

Recommended Textbooks / Reading:

Title	Author(s)	Publisher	Year	ISBN
Fundamentals of General, Organic and Biological Chemistry	J. Mc Murry and M. E. Castellion	Pearson Prentice Hall	2006	0-13-148684-5
Chemistry The Central Science	T. L. Brown, H. E. LeMay, B. E. Bursten, C. J. Murhy	Pearson Prentice Hall	2009	0-13-235848-4