COURSE ID SHEET

Course No.	5278	NTUA

Semester:	5	Core		Elective	X	Specialization	

Title: **SELECTED TOPICS OF BIO-ORGANIC CHEMISTRY & CHEMISTRY OF NATURAL PRODUCTS**

Aim:

The aim of the course is to acquaint students (a) with some of the most important categories of organic biomolecules (amino acids, peptides, steroids) and (b) with the main principles of natural product chemistry (categories of natural products, isolation methods, study and characterization of structure and applications in pharmaceutics, cosmetics, food, dyes, antioxidants, etc.) These selected topics are the state of the art of modern research and applications of Organic and Bioorganic Chemistry and Natural Product Chemistry. They are adapted to the directions and studies of the Chemical Engineer and can lay the foundations for the student's involvement with relevant cutting-edge research areas at postgraduate or doctoral level.

Content:

The selected topics which will be discussed are an integral part of the state-of-the-art research and applications of Organic and Bio-organic Chemistry and Chemistry of Natural Products.

- Introduction to Chemistry of Natural Products.
- Alkaloids. Peptide Synthesis Methods and Methods of Determining Amino Acid Sequence in Peptides.
- Glycosides.
- Steroids.
- Isolation of bioactive compounds from Natural Products.
- Synthesis of Natural Products and their Analogues.
- Characterization of the Structure of Natural Products and their Analogues.
- Evaluation of Biological Activity (Bioassays).
- Natural Products Applications.
- Laboratory Exercises (isolation and structure characterization of a natural product, synthesis of a naturally occurring essential oil constituent).

Hours per semester:

LECTURES	35	EXERCISES	-	LABORA-TORY	4	HOME-WORK	51	**TOTAL HOURS: 90**

Student performance/ evaluation:

The evaluation of the students will be done through:

- A Final (written) examination (FE, 80% of the final grade).
- Laboratory exercises (LE, 20% of the final grade).

Prerequisite: Written examination grade ≥ 5

The final grade results as follows: Final Grade = 0.8 x (FE) + 0.2 x (LE)