



UNIVERSITÀ DEGLI STUDI DI TORINO

ID

TIC50\_DIP\_SCB

## **Visiting Professor Program Academic year 2021/2022**

**DEPARTMENT OF CLINICAL AND BIOLOGICAL SCIENCES**

**TEACHING COMMITMENT: 24 hours**

**COURSE TITLE**

**Preparatory Biochemistry - Introduction to General Chemistry**

**TEACHING PERIOD**

1st term

**SCIENTIFIC AREA**

Chemistry and Biochemistry

**LANGUAGE USED TO TEACH**

English

The Degree Course is entirely taught in English

**COURSE SUMMARY**

The syllabus aims to provide essential concepts on the nature of chemical bonds and chemical reactions, the role of catalysts in advancing the chemical reactions, as well as the role of electron transfer (oxidation - reduction) as the key step for energy extraction from nutrients. Moreover, the structure and classification of sugars, lipids, amino acids, proteins and nucleic acids will be learned during the course. The catalytic role of enzymatic proteins and its regulation will be proposed as a central topic for the future understanding of metabolism.

**LEARNING OBJECTIVES**

By the end of the course, the Student will know basic organic chemistry and molecular representation, the structural classification of basic biochemical molecules (sugars, lipids, enzymes, amino-acids). They will also have introductory knowledge on the structure of proteins and molecular representation models, together with a basic knowledge of biochemical catalysis and

macromolecular interaction principles. Particular attention is devoted to quantitative and first-principle derivation of concepts and tools that allow a deep understanding of the chemical basis of biological processes.

The Student will have a clear understanding of how form and function of molecules are inextricably linked and how basic chemistry can explain the life of cells. On this framework the student will develop a true curiosity for the specific reactions that make up metabolism and make cells complex functional entities.

### **TUTORSHIP ACTIVITIES**

N/A

### **LAB ACTIVITIES**

N/A

### **OTHER ACTIVITIES BESIDES THE COURSE**

A seminar focused on the research activity of the visiting professor, open to students and faculties will be organized.

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### **VISITING PROFESSOR PROFILE**

We seek for a researcher with a strong background in biochemistry/cell biology and a corresponding expertise in quantitative sciences in order to fully satisfy the learning objectives of our course.

### **CONTACT PERSON AT THE DEPARTMENT**

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