

## Biochemistry (Ist Year of study, IInd Semester)

Credit value (ECTS) 2

### Course category

Fundamental (Compulsory)

### Course holder:

Assist. Prof. PhD. Antoanela PATRAS

### Discipline objectives (course and practical works)

The course aims to make students acquire knowledge on the main types of biochemical compounds, distribution and importance, physical and chemical properties.

Practical works aim to familiarize students with the working techniques and principles in biochemical laboratories and the correct application of analysis methods.

### Contents (syllabus)

Course (chapters/subchapters)
<b>1. Introduction to Biochemistry</b>
2. Fundamental bioconstituents: bioelements and biomolecules
<b>3. Carbohydrates</b> <b>Monosaccharides.</b> Structure, isomers, examples, properties. <b>Oligosaccharides.</b> Classification. Examples. Properties. <b>Polysaccharides.</b>
4. <b>Lipids.</b> General information. Classification Lipid's precursors Triglycerides – basic notions
<b>5. Protids</b> Classification. Fundamentals of amino acids, peptides, proteins.
<b>6. Vitamins</b> (hydrosolubles, liposolubles)
<b>7. Enzymes.</b> General information. Characteristics. Classification
<b>8. Secondary biomolecules.</b> General information. Examples. Importance.

Practicum
1. General information concerning biochemical analysis. Determination of ash content.
2. Identification of monosaccharides.
3. Disaccharides – analyse of chemical reducing character. Chemical properties of starch.
4. Lipids. Total lipids determination.
5. Proteins identification by colour reactions. Proteins precipitation
6. Vitamin C analysis
7. Analysis of a secondary compound. Final laboratory evaluation.

### Bibliography

Lupea, Alfa Xenia – Biochimie, Fundamente, Ed. Academiei Române, 2007

Neamțu, G., Gh.Cîmpeanu, Carmen Socaciu – Biochimie vegetală vol. 1 și 2, Ed. did. și ped. 1995,

Segal R. – Biochimie, Editura Alma, Galați, 2000

Savu, Maria, Iulia Afusoe, Antoanela Nechita Patraș, Alina Trofin, Ioan Marcu – Biochimie vegetală, lucrări practice, U.Ș.A.M.V. Iași, 2000;

### **Evaluation**

<b>Evaluation form</b>	<b>Evaluation Methods</b>	<b>Percentage of the final grade</b>
Colloquium	Writing - test examination	60%
Appreciation of the activity during the semester	Oral and practical assessment during the semester, verification tests and final laboratory colloquium.	40%

### **Contact**

**Assist. Prof. PhD. Antoanela PATRAS**

Department of Exact Sciences - UASVM Iași

3, Mihail Sadoveanu Alley, Iași, 700490, Romania

phone: 0040 232 407551

e-mail: [apatras@uaiasi.ro](mailto:apatras@uaiasi.ro)