

Biochemistry (Ist Year of study, IInd Semester)

Credit value (ECTS) 4

Course category

Fundamental (Imposed)

Course holder:

Assist. Prof. Dr. 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 in plants, physical and chemical properties.

Practical work aims to familiarize students with the working techniques and principles in biochemical laboratories and the correct application of analysis methods of main compounds.

Contents (syllabus)

Course (chapters/subchapters)
Introduction to Biochemistry
Fundamental bioconstituents: bioelements and biomolecules
Glucids Monoglucids. Structure, isomers, examples, properties. Oligoglucids. Classification. Examples. Properties. Poliglucids.
Lipids General information. Structure. Classification Lipid precursors Simple lipids Complex lipids
Protids General information. Classification. Aminoacids Peptides Proteins
Vitamins (hydrosolubles, liposolubles)
Enzymes. General information. Characteristics. Mechanism of action. Classification
Phytohormones Generalities. Classification. Examples.
Secondary biomolecules. General information. Examples. Importance.
Metabolism- fundamentals

Practical works

1. General information concerning biochemical analysis. Determination of dry weight and moisture.
2. Determination of ash content
3. Identification of monoglucids
4. Diglucids – analyse of chemical reducing character
5. Qualitative analyse of polyglucids
6. Determination of reducing glucids
7. Lipids. Soxhlet extraction
8. Acidity index of lipids
9. Qualitative and quantitative analysis of aminoacids
10. Proteins identification by color reactions
11. Proteins precipitation
12. Vitamin C analysis
13. Analysis of enzymatic activity
14. Final laboratory evaluation

Bibliography

Artenie, Vlad - Biochimie, Editura Universității "Al. I. Cuza" Iași, 1991
 Koolman, J., K.-H- Röhm –Biochimie - atlas de poche, Médecine-Sciences, Flammarion, 1999;
 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;
 Artenie Vlad, Tănase Elvira – Practicum de biochimie generală, Univ. „Alexandru Ioan Cuza”, Iași, 1981

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Oral examination	60%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	40%

Contact

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