

# Biomolecular Horizons: Building a Sustainable Future in Life Sciences

## Blended Intensive Programme “Alexandru Ioan Cuza” University, Iași, Romania

### *Call for partners*

#### What is it about?

Alexandru Ioan Cuza University of Iași invites students from around the world to explore their interest and passion for Life Sciences. Designed to deepen both theoretical understanding and practical expertise, this program focuses on advancing your skills in interdisciplinary experimental techniques and data analysis surrounding research of biomolecules.

The curriculum offers a diverse array of topics, including bioinformatics and DNA barcoding, the structural biology of proteins, the physiological roles and activity of enzymes, innovative approaches to combating antimicrobial resistance, as well as your very own first-hand experience in advanced techniques like, peptide chemistry, separation methods, structural mass spectrometry, modeling and 3D printing of protein structures and genetic sequencing.

This module provides a unique opportunity to engage with cutting-edge research and applications in Life Sciences, fostering a deeper understanding of the molecular mechanisms underlying health and disease.

This Blended Intensive Programme is part of The Jassy Summer School where there will be five other different interdisciplinary modules.

#### Where?

"Alexandru Ioan Cuza" University of Iasi, Romania

#### When?

13 – 19 July 2026

#### Who should attend?

The program is designed for students (Bachelor, Master, or PhD) who are interested in Life Sciences.

#### Learning outcomes

Participants will gain a comprehensive understanding of critical topics in modern biology and healthcare, including the benefits and risks of empiric antibiotic treatment, the role of enzymes

and proteins in human health, and the use of advanced techniques like mass spectrometry and DNA barcoding. They will also explore the potential of cell-penetrating peptides for drug delivery, investigate new solutions for combating antimicrobial resistance, and study the structural biology of proteins to better understand biological functions and disease mechanisms.

## Benefits

4 ECTS Credits

## Course structure. Main topics

The physical component consists of six days of sessions from 14th of July to 20th of July. During this period, participants will engage in lectures and interactive discussions on key themes, including:

- A Critical Analysis of Empiric Antibiotics Treatment: Health Benefits versus Environmental Risks (L, PA);
- Enzymes in Everyday Life (L, PA);
- Proteins, Enzymes, and Antibodies as Molecular Vehicles for Investigating Human Health and Diseases (L, PA);
- Advanced ESI – Mass Spectrometry: Exploring Biomolecular Mass and Structure (PA);
- Cell penetrating peptides as drug delivery and diagnostic tools (L, PA);
- Identifying biological species using DNA barcoding (L, PA)
- New weapons to fight antimicrobial resistance (L, PA)
- From amino acids to biological function – a journey into the structural biology of proteins (L, PA)