

## 2021/2022 - Interview for MSc Medical Biotechnology programme

The purpose of the interview is to verify your motivation and preparation for continuing your studies in Medical Biotechnology field. During the interview, you may expect to be asked what laboratory techniques you are familiar with and whether you have sufficient theoretical background to continue your education in the field.

**Topics that you can expect to be covered during the interview are as follows:**

- Eukaryotes vs Prokaryotes (Bacteria and Archaea) - cell structure.
- Structure and function of cell components.
- Structure and function of biological membrane.
- Structure and function of: proteins, carbohydrates, lipids, nucleic acids.
- Coenzymes and vitamins.
- Protein synthesis and degradation.
- Mechanism of enzyme action and regulation of enzymatic activity.
- Metabolic pathways for cellular energy.
- Replication and expression of genetic information.
- Regulation of gene expression.
- Mechanisms of DNA damage, repair, and mutagenesis.
- Genetic recombination and mobile genetic elements.
- Transfer of genetic material in organisms (transformation, transduction, conjugation)
- Basics of human immunology.
- Tumorigenesis (proto-oncogenes, oncogenes and suppressor genes).
- Microorganisms in biotechnology and examples of biotechnology products.
- Genetically modified organisms in agriculture and industry.
- Biochemical calculations.
- Molecular biology methods.
- Protein analysis methods.
- Animal cell cultures techniques.
- Microbiological growth analysis.