

Course: Biology 1

credits: 3

Course code ELVP15ABIOL1
Name Biology 1
Study year 2020-2021
ECTS credits 3
Language English
Coordinator P.M. Gomes Lourenco

Modes of delivery Assignment
 Lecture
 Practical / Training
Assessments Other - Other assessment
 Report - Report
 Written test - Written, organised by STAD examinations

Learning outcomes

At the end of this study unit you will be able to:

- Describe basic structure and function of large biomolecules: carbohydrates, lipids, proteins and nucleic acids.
- Describe the structure of prokaryotic and eukaryotic (animal and plant) cells and the function of their organelles (nucleus, mitochondria, chloroplast, and endoplasmic reticulum).
- Describe the function and structure of the cell membrane and different transport mechanisms through the membrane.
- Explain how an organism's metabolism transforms matter and energy according to the laws of thermodynamics.
- Explain how cellular respiration and fermentation yield energy for cellular work.
- Describe the process of photosynthesis and its importance for life.
- Explain different processes governing nutrient cycling and energy flow in ecosystems.
- Explain basic principles of a given method of bioenergy production and discuss its efficiency and its impact on environment.
- Perform an experiment in the field of bioenergy, analyze the results and discuss them in relation to the relevant literature.

Content

In this unit you will learn about different levels of organisations of living organisms. You will learn how organism's metabolism transforms matter and energy. You will also learn about different processes governing nutrient cycling and energy flow in ecosystems. This knowledge will be the basis for understanding different methods of bio energy production.

You will also perform lab experiments in which you will study the effect of different factors on the biogas production.

This knowledge will be useful for the project in this semester and in later years.

Included in programme(s)

Electrical Engineering Major Sensor Technology

School(s)

Institute of Engineering