

QBio501: Organismic Physiology

Module Responsible:
Prof. Dr. Stanislav Kopriva

Version:
30/12/2020

Module Organizer:
Prof. Dr. Stanislav Kopriva

Type:
Compulsory

Lecturer:

Prof. Dr. Stanislav Kopriva, Prof. Dr. Andreas Weber, Prof. Dr. Ute Höcker, Dr. Takaki Maekawa, Dr. Natalia Kononenko

Total Working Time	Credit Points	Contact Time	Self Study	Duration
450 h	15 CP	165 h	285 h	1 Semester

Course Components	Group Size	Frequency
Lecture: 7 SWS	P: 40	Every Winter Semester
Exercise: 2 SWS	P: 40	
Practical: 2 SWS	P: 20	

Learning Competencies:

After completing the module, students know:

- the similarities and differences in the physiology of plants and animals.
- the concepts of disease and homeostasis
- signalling pathways, hormones, and receptors
- mechanisms of interaction with environment

They are able to describe anatomy of both in quantitative terms, and explain evolution and adaptation.

They obtain theoretical knowledge in the lectures, which will be deepened in the exercises through reading and presenting scientific papers to key content. In the practical part the students will learn to handle basic model organisms, perform experiments, record, evaluate, and present experimental data.

Content:

In the "Organismic Physiology" module, students Instead of dividing the lecture into two parallel parts, the common aspects of animal and plant physiology are taught, highlighting the similarities at structure and molecular level. The main contents are:

- Shape & Function
- Movement/locomotion
- Nutrition/mineral nutrition
- Transport/circulation
- Respiration
- Immunity
- Stress and disease
- Communication/Hormones

- Circadian clocks
- Homeostasis
- Sensory systems
- Size & Metabolic rate
- Biofilms
- Autophagy

Conditions of Participation:

Passed modules QBio201: Molecular Mechanism of the Cell and QBio302: Cell Structure and Dynamics

Examination:

Learning portfolio consisting of

- Written Exam (50% of final grade)
- Presentation (25% of final grade)
- Protocol (25% of final grade)

Prerequisites for Awarding Credits for this Module:

- Passing the presentation and written exam
- Successful participation in the practical course

Factor for the Overall Grade:

The grade is weighted according to the credit points (CP) in the overall grade.

Language:

English

Literature:

Further Information: -