

Environmental impact on Life Processes

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Subject code: EIL

Academic year: 2

Lectures: 25

Tutorials and seminars: 25

ECTS: 5

Aims of the course:

The purpose of this subject is to present the students the functioning of basic physiological mechanisms that allow organisms to live. The focus lies on interconnection of processes at the molecular, cellular, tissue and organ level and the search for a new meaning or role regarding the behaviour of organisms. Explanation of each process will be within an 'environment-organism' context, the the students will be able to understand the development and adjustment of a wide range of animal groups to challenges of their immediate environment. Knowing fundamental mechanism and effects of the environment on their functioning, and their ability to adapt will enable the understanding of the existence of all living organisms in a wide variety of environment, such as marine waters, freshwaters, mainland, springs, parasitic environment, etc. The approach used during the classes is interdisciplinary, so the students will understand how physical, chemical and social effects regulate the life of its environment at various levels.

Subject content:

- (1) Fundamental mechanisms of the functioning of life processes.
- (2) Experimental research methods of life processes.
- (3) The environmental impact on basic life processes:
 - the mechanism of management and keeping the balance with water and ions (secretion and osmoregulation),
 - metabolism and energy provision ,
 - respiration and circulation,
 - coordination and contact with the environment through the use of senses, nervous system and hormones,
 - movement,
 - behaviour.
- (4) Adjustment to the environment: life in the sea, in freshwaters, in extreme environments, on the mainland and in a parasitic environment.

Teaching methods:

Lectures and seminar work

Student's obligations:

Written examination, seminar work, its presentation and defence

Basic literature

- *Eckert Animal Physiology: Mechanisms and Adaptations* (1997) (David Rendall, Warren Burggreen and Kathleen French). Freeman & Co. New York, ISBN: 0-7167-2414-6.
- *Environmental Physiology of Animals* (2000) (Pat Willmer, Graham Stone and Ian Johnston). Blackwell Science, ISBN: 0-632-03517-X.

Additional literature

Since there is no fundamental and/or additional literature available in the Slovene language, the students will be provided with abstracts from foreign literatures and copies of original photos.