



DEPARTMENT OF BIOLOGICAL AND ENVIRONMENTAL SCIENCES

BIO484 Comparative Physiology of Marine Animals including Applications for Aquaculture, 15 credits

Marina djur: Jämförande fysiologi och tillämpningar inom vattenbruk, 15 högskolepoäng
Second Cycle

Confirmation

This course syllabus was confirmed by Faculty of Science on 2010-10-14 and was last revised on 2017-07-09 by Department of Biological and Environmental Sciences to be valid from 2017-07-09, autumn semester of 2017.

Field of education: Science 100%

Department: Department of Biological and Environmental Sciences

Position in the educational system

The course is an in-depth course in biology in the second cycle. The course may be included in the Bachelor's programmes in Biology, Molecular Biology, Environmental sciences and Marine sciences, equivalent Master's (120 credits) programmes and the Master's (120 credits) programme in Biology and Learning. The course can also be offered as a freestanding course outside of the program. The course follows the educational model Problem-based Learning (PBL).

Main field of studies

Biology

Molecular Biology

Marine Sciences

Specialization

A1N, Second cycle, has only first-cycle course/s as entry requirements

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Entry requirements

Learning outcomes

On successful completion of the course students will be able:

Knowledge and understanding

- explain how marine animals can detect abiotic and biotic factors in the environment
- give an account of physiological mechanisms for maintenance of homeostasis,
- give an account of adaptive physiological mechanisms from a comparative perspective
- put basic physiological knowledge from an applied perspective on the basis of issues in marine aquaculture

Skills and Abilities

- master principles, concepts and terminology in physiological mechanisms and adaptations
- apply laboratory proficiencies to study organisms' physiological adaptations to different environments
- from given guidelines, plan and carry out a shorter experimental study
- master basic principles and concepts in marine aquaculture
- master presentation software of the type "power point" and with its help be able to present acquired knowledge as well as own analyses and syntheses, both orally and in writing

Judgement and approach

- analyse, synthesise and evaluate chosen physiological problems from both basic - and aquaculture perspective,
- evaluate facts from different sources, discuss these and take position to advantages and disadvantages with different theories

Course content

The course follows the educational model Problem Based Learning (PBL) which imply that a large part of the learning process takes place in teacher-supervised so called. PBL base groups. The course intends to provide broadening and deepening knowledge in the comparative physiology from a marine perspective on cell - organs and organism level.

The course intends to supplement and deepen the knowledge in zoological physiology with an emphasis on the adaptations of vertebrates and invertebrates to different environments. The focus is on the marine environment, to feel the environment and respond to this by means of nervous and hormonal control system and what happens if the environment is changed naturally or anthropogenically. The course has an applied angle where basic physiological mechanisms are studied in relation to potential problems and situations in marine aquaculture.

PBL teaching and learning implies that the teaching is largely conducted in the supervised groups, but that it also contains lectures, seminars and a considerable part

advanced laboratory components that highlight problem-solving and modern technologies. The final third of the course is devoted to a longer coherent project work where the practical and theoretical knowledge that has been acquired during the course and earlier education is used. The project work is presented orally and in writing. Education in both oral and written presentation technique is included in the course.

Form of teaching

Examination takes place in the form of an individual written examination after about 70% (10 credits) of the course and through assessing the student (individually and in groups) written and oral presentation (5 credits) through marking on the basis of given criteria. Furthermore, the course contains compulsory laboratory sessions and tutorial group meetings which are evident from the schedule of the course.

For a student who has not passed at the regular examination, additional examination sessions are offered. Supplementary qualification of compulsory components will be offered.

A student who has failed a test twice has the right to change examiner, unless weighty argument can be adduced. The application shall be sent to the board of the department and has to be in writing.

In case the course has ceased or undergone major changes the student should be guaranteed access to at least three examination sessions (including the regular examination session) during a time of at least a year with following the previous out-line of the course

Language of instruction: Swedish and English

Assessment

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

A pass final grade requires attendance and active participation in compulsory components and that both parts of the examination had been assigned at least grade Pass (at least 60% on each the of the two assessing components). The grade Pass with distinction is assessed on the basis of joining of the results in the two examinations the total sum of there individual student should be at least 85 %.

Regarding the application of the ECTS scale for grade please see Vice-chancellor's decision 28/05/2007, diary nr G 2009/5545 1976/07

Course evaluation

A written and/or oral course evaluation is made at the end of the course.

A compilation of the course evaluation is posted on the courses page in the university digital learning platform as well as report to secretariat for biology and environmental sciences there it is available as a public document. The course evaluation is also distributed to all teachers that have participated in the course and should be taken into consideration when planning the next course.

A summary of the course evaluation as well as highlighting of potential changes that have been done should be presented at the introduction next time the course is given.

Additional information

The course may contain compulsory laboratory work that include animals.

The course BIO484 replaces BIO483, BIO245 and BIN251. BIO484 may not be included in a degree where BIO483, BIO245 or BIN251 is included. BIO484 cannot neither be included in a degree that is based on a degree, where BIO483, BIO245 or BIN251 is included. Similarly, BIO483, BIO245 or BIN251 may not be included in a degree that is based on a degree, where BIO484 is included.