



**LUND**  
UNIVERSITY

Faculty of Science

## **BIOR14, Biology: Pharmacology, 15 credits**

*Biologi: Farmakologi, 15 högskolepoäng*

Second Cycle / Avancerad nivå

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### **Details of approval**

The syllabus was approved by Study programmes board, Faculty of Science on 2007-04-12 and was last revised on 2018-06-13. The revised syllabus applies from 2018-06-13, autumn semester 2018.

### **General Information**

The course is an optional second-cycle course for a degree of Bachelor or Master of Science in Biology and Molecular Biology. The course is also offered as a single subject course.

*Language of instruction:* English

*Main field of studies*

Biology

Molecular Biology

*Depth of study relative to the degree requirements*

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

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### **Learning outcomes**

#### **Knowledge and understanding**

On completion of the course the student shall be able to:

- define basic pharmaceutical concepts
- account for the modes of action for the most common pharmaceutical groups as
- account for the pathobiological basis for using common pharmaceuticals

### **Competence and skills**

On completion of the course the student shall be able to:

- identify and formulate pharmacological problems
- process pharmacological problems by evaluating and reporting results
- interpret and communicate experimental results orally and in writing

### **Judgement and approach**

On completion of the course the student shall be able to:

- critically discuss the regulatory and economical conditions for drug development

### **Course content**

**Laboratory animal science:** This is a basic part of the course, treated both theoretically and practically through studies on the animal environment, animal quality, management of animals as well as sampling and injection techniques. Legislation and statutes for the subject area are discussed.

**Experimental pharmacological methodology:** Different operation techniques (suturisation, catheterisation etc), and in vitro trials with isolated organs are demonstrated. The use of registration devices for ECG, blood pressure etc is demonstrated.

**General pharmacology:** Receptor theory, structure-effect relationships, pharmacokinetics, modes of action, signal transduction and dose-response relationships are discussed.

**Special pharmacology:** Depending on available teachers, different pharmacological themes will be addressed, e.g. hormone treatment, PNS and CNS-pharmacology, cytotoxins, cardiovascular treatment, asthma treatment, and pharmacognosy.

**Applied pharmacology:** An overview is given about the principles of production of new drugs, e.g. HTS, clinical assessment and GXP, as well as drug processing from a societal perspective, the structure of the sector, and the current drug-related debate.

**Other activities:** Literature search, database management, report writing and oral presentation.

### **Course design**

The teaching consists of lectures and group discussions on chosen subject areas and problems. Laboratory exercises constitute an important part of the studies. Study visits and demonstrations are sometimes carried out on adequate industries and departments. Participation in all parts of the course except lectures is compulsory. During the course, the students will carry out one or several small projects, individually or in groups. The students are trained in information retrieval as well as in identification and formulation of pharmacological problems. Which themes to be addressed is decided by the students in consultation with their supervisor.

## **Assessment**

Examination takes place continuously during the course as well as in a written examination at the end of the course. For students who have failed the examination during the course, an additional examination session in close connection to this is offered.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## **Grades**

Marking scale: Fail, Pass, Pass with distinction.

To pass the entire course, approved examinations, approved laboratory reports, written assignments, and project reports, as well as approved participation in all compulsory parts, are required. The final grade is decided through a weighing of the results of the parts that are included in the examination.

## **Entry requirements**

For admission to the course, 90 credits of scientific studies including knowledge corresponding to MOBA01 Cell Biology 15 credits, BIOA01 Genetics and Microbiology 15 credits, BIOC01 Human Physiology 15 credits, and chemistry 15 credits, as well as English 6/English B, are required.

## **Further information**

The course may not be included in a degree together with BIO613 Pharmacology 15 credits, or BIM062 Experimental Pharmacology 15 credits.

## Subcourses in BIOR14, Biology: Pharmacology

Applies from H14

- 0702 Theory, 10,0 hp  
Grading scale: Fail, Pass, Pass with distinction
- 0703 Literature Assignments and Seminars, 3,0 hp  
Grading scale: Fail, Pass, Pass with distinction
- 0704 Laboratory Work, 2,0 hp  
Grading scale: Fail, Pass

Applies from H07

- 0701 Pharmacology, 15,0 hp  
Grading scale: Fail, Pass, Pass with distinction