



**Karolinska
Institutet**

Course syllabus for

Pharmacology and Toxicology, 10 credits

Farmakologi och toxikologi, 10 hp

This course syllabus is valid from spring 2009.

Please note that the course syllabus is available in the following versions:

Spring2009 , Spring2011 , Spring2013 , Spring2014 , Spring2015

Course code	1BI008
Course name	Pharmacology and Toxicology
Credits	10 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	First cycle, has only upper-secondary level entry requirements
Grading scale	Excellent, Very good, Good, Satisfactory, Sufficient, Fail, Fail
Department	Department of Physiology and Pharmacology
Decided by	Programnämnden för biomedicinprogrammen
Decision date	2008-10-13
Revised by	Programnämnden för biomedicinprogrammen
Last revision	2008-12-02
Course syllabus valid from	Spring 2009

Specific entry requirements

The students should have pass on all courses on term 1 and at least 11 ECTS from term 2.

Objectives

After completing the course, the student should be able to: - describe basic pharmacological principles within the field of pharmacokinetics (i.e. principles of absorption, distribution, and elimination of drugs). - describe interindividual differences in drug metabolism as well as interactions between different drugs. - describe different classes of receptors which interact with drugs, and describe intracellular transduction mechanisms coupled to some of these receptors. - explain principles for central and peripheral neurotransmission. - describe mechanisms of action of drugs within the following fields: neuropsychopharmacology, general anaesthesia, local anaesthesia, analgesia, cardiovascular pharmacology, diuretic drugs, respiratory pharmacology, and gastrointestinal pharmacology. - describe and explain toxicological principles, e.g. dose-effect relationships and methods for studying bioactivation and the toxicity of xenobiotics.

Content

Medication is a very important part in the overall treatment of various diseases. This course intends to equip the students with basic knowledge of how drugs affect cells, organs and, not the least, all organisms. The course will mainly focus on general pharmacological principles. The course in toxicology intends to give the students knowledge of toxicological principles such as dose response, and how bioactivation and toxicity of xenobiotic substances are studied. The course is divided in four parts that are examined one by one: Part 1: Half-time oral quiz, 2.2 HE credits Part 2: Laboratory practicals and participation in Group seminars, 3 HE credits Part 3: Problem (Problem-based learning) in toxicology, 0.8 HE credits Part 4: Integration of the course contents in a written exam, 4 HE credits

Half-time oral quiz, 2.2 hp

Grading scale: GU

Laboratory practicals and participation in Group seminars, 3.0 hp

Grading scale: GU

Problem (Problem-based learning) in Toxicology, 0.8 hp

Grading scale: GU

Integration of the course contents in a written exam, 4.0 hp

Grading scale: AF

Teaching methods

The course consists of lectures, supervised laboratory practicals, and supervised group seminars. The group seminars will review and substantially expand upon the material provided in the lecture series. These seminars train the students to independently search for and assess relevant information, and provide an opportunity to discuss problems and theoretical concepts with faculty members that are actively involved in research in the fields above. The course also includes a seminar task which will be solved by using the pedagogical approach Problem based learning.

Examination

Component 1: The oral quiz is graded as fail/pass. Component 2: The students have to participate in all laboratory practicals and group seminars to be graded as pass. Student who cannot participate in these mandatory events, have to send in a written description of the event (e.g. a group seminar). Component 3: The PBL-component in toxicology is graded as fail/pass. Component 4: The integration of the course content is examined by a written exam graded as F/Fx/E/D/C/B/A (see above). Limitation of number of occasions to write the exam: A student who does not pass the examination on the first occasion is offered a maximum of five additional opportunities to sit the examination. If a student has not passed the examination after a total of four attempts then it is recommended that the student retake the whole course at the next opportunity. Following this the student is permitted to sit the examination on another two occasions. A student who fails the examination on six occasions is not permitted to sit the examination again or to retake the course. Participation in an examination is defined as an occasion on which a student attends an examination, even if the student submits a blank examination paper. If a student has registered to sit an examination, but does not attend the examination, this is not defined as participation in the examination.

Transitional provisions

After each course there will be at least 6 opportunities to sit the examination within a two-years period.

Other directives

The course language is English

Literature and other teaching aids

Rang, H.P; Dale, M.M

Rang & Dales Pharmacology

2007 : Edinburgh: Churchill Livingstone,
ISBN:978-0-443-06911-6

[Library search](#)

Casarett and Doull's toxicology : the basic science of poisons

Doull, John; Casarett, Louis J.; Klaassen, Curtis D.

6. ed. : New York : McGraw-Hill Medical Publ. Division, cop. 2001 - xix, 1236 s.
ISBN:0-07-134721-6 LIBRIS-ID:8273822

[Library search](#)

FASS : Akademi-FASS

Läkemedelsindustriföreningen (LIF), 2008
ISBN:978-91-85929-00-9

[Library search](#)

Läkemedelsboken, n 2007

Stockholm : Apoteket AB, 2007 - 1260 s.
ISBN:91-85574-57-0 LIBRIS-ID:10399282

[Library search](#)