Course syllabus for

Pharmacology and Toxicology, 10 credits

Farmakologi och toxikologi, 10 hp
This course syllabus is valid from spring 2014.
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	Programme Committee 7
Last revision	2013-10-31
Course syllabus valid from	Spring 2014

Specific entry requirements

At least the grade E at the courses in Introduction to biomedical science and General and organic chemistry, and at least the grade pass at the parts Basal metabolism and Biochemical laboratory methods (3+2 credits) of the course Medical biochemistry, and the part Cell biology (6 credits) of the course Cell biology and genetics within the Study Programme in Biomedicine.

Objectives

Upon completion of the course, the student should be able to:

- describe basic pharmacological principles within the field of pharmacokinetics,
- 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,
- discuss 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,
- understand and interpret results from laboratory practices.

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 pharmacological part will mainly focus on general pharmacological principles. The toxicology part intends to give the students knowledge of toxicological principles such as dose response, and how bioactivation and toxicity of xenobiotic substances are studied.

Pharmacokinetics and Pharmacodynamics, 2 hp This component of the course contains pharmacokinetics as well as effects of pharmaceuticals on different diseases. **Laboratory work in pharmacology, 1.5 hp** Three laboratory practices. **Group assignments in pharmacology and toxicology, 2.5 hp** This component constitutes three group seminars and a PBL task in toxicology. **Integration of pharmacology and toxicology, 4 hp** Integration of the content of the course.

Teaching methods

Teaching will be in the form 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

Pharmacokinetics and pharmacodynamics (2 credits). The examination consists of an oral quiz. Graded Fail/Pass.

Laboratory work in pharmacology (1.5 credits). Graded Fail/Pass. The students have to participate in all laboratory practicals to be graded as pass.

Group assignment in pharmacology and toxicology (2.5 credits). Graded Fail/Pass. The students have to participate actively in all group works to be graded as pass.

Integration of pharmacology and toxicology (4 credits). The examination consists of a written exam. Graded A-F.

The grade of the course is based on the grade of the part Integration of pharmacology and toxicology. To pass the whole course (grade E or above), the grade pass must have been obtained for the other parts on the course.

Compulsory participation
The course director assesses if and, in that case, how absence can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the course director's instructions, the student's results for respective part will not be registered in LADOK.

Limited number of examinations or practical training sessions
Students who have not passed the regular examination are entitled to participate in five more examinations. If the student has failed six examinations/tests, no additional examination or new admission is provided.

The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. An examination

for which the student registered but not participated in, will not be counted as an examination.

Transitional provisions

After each course occasion there will be at least six occasions for the examination within a two-year period from the end of the course.

Other directives

The course language is English.

Course evaluation is carried out in accordance with the guidelines established by the Board of Higher Education.

Oral evaluation in the form of course council meetings will be carried out during the course.

Literature and other teaching aids

Mandatory literature

Rang, H. P.; Dale, M. Maureen

Rang and Dale's pharmacology Pharmacology

7. ed. : Edinburgh : Churchill Livingstone, 2011 - 792 p.
ISBN:978-0-7020-3471-8 (pbk.) LIBRIS-ID:12148717
Library search

Reference literature

Casarett, Louis J.; Klaassen, Curtis D.4 edt; Doull, John

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

7. ed. : New York : McGraw-Hill, cop. 2008 - xv, 1310 s.
ISBN:978-0-07-147051-3 (hardcover : alk. paper) LIBRIS-ID:10616935
URL: http://www.loc.gov/catdir/toc/ecip0715/2007015656.html
Library search

FASS : förteckning över humanläkemedel.

Stockholm : Läkemedelsindustriföreningen (LIF), 2012 - 2 vol. (4273 s.)
ISBN:978-91-85929-10-8 (A-L) ISSN:1400-6588 LIBRIS-ID:12488996
URL: Länk
Library search

Läkemedelsboken 2011-2012

Uppsala : Läkemedelsverket, 2011 - 1269 s.
ISBN:978-91-979605-0-2 LIBRIS-ID:12199360
Library search