Faculty of Medicine

BIMB42, Biomedicine: Pharmacology and Drug Discovery, 7.5 credits

Biomedicin: Farmakologi och utveckling av läkemedelskandidater, 7,5 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by The Master's Programmes Board on 2021-09-07 to be valid from 2021-09-14, spring semester 2022.

General Information

The course is compulsory in the Biomedicine Programme and is included in its semester 4.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
Biomedicine	G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

On completion of the course, the students shall be able to

- explain some basic pharmacodynamic, pharmacokinetic and toxicological principles of drug treatment
- give an account of existing and potential pharmacological intervention at the molecular, cellular and systemic level of studied diseases
- give an account of the different stages of drug development from discovery to product
- describe how scientific and analytical methods can be used to develop and implement pharmacological interventions

Competence and skills

On completion of the course, the students shall be able to

- search, critically review and compile published research about pharmacological mechanisms for the treatment of selected diseases
- write and provide feedback on written work about pharmacological intervention for a chosen disease and utilise the feedback from the reviewer in a constructive way
- evaluate and present research information about pharmacological treatment and drug development
- behave with a professional approach, respect others' contribution to discussions about pharmacology and drug development, and meet set deadlines.

Judgement and approach

On completion of the course, the students shall be able to

- reflect on how drug development and handling influence the environment and health, at global and individual levels
- reflect on how drug development, drug use and ethical considerations influence our possibilities to achieve the UN's global goals
- reflect on how research and development in pathobiology and pharmacology contribute to disease prevention and treatment
- reflect on their own as well as other group members' contributions to group work and describe their own development through earlier courses.

Course content

The course starts with an introduction to pharmacodynamics, pharmacokinetics, toxicology and pharmacogenetics, covering basic pharmacological concepts. This then serves as a basis for the pharmacological studies in the coming weeks with connections to pathophysiology and specific diseases. During these weeks, different aspects are discussed such as pharmacological and non-pharmacological intervention, the mechanisms behind drug effects at the molecular, cellular and organ levels, as well as ethical stances from a broad perspective.

During the course, different parts of the drug development process are introduced – from the early pre-clinical stages to clinical trials and approval.

Course design

The working methods are mainly based on active study, which set requirements for the students to prepare before the teaching components. The students are expected to act professionally and, just as in a future work situation, participate constructively in the working group to enable the group to make progress. The teaching combines lectures, individual preparation, group assignments and multiple-choice questions. To achieve the stated competence and practice using their judgement and approach, the students will work in specific areas of therapy where they write and present an individual work based on research literature. Furthermore, the students will give feedback on one another's work according to instructions.

Assessment

The learning outcomes of the course in pharmacology are continuously assessed using multiple-choice questions. The course portfolio is assessed through an individual work that is presented in writing and orally, feedback on the written work of another student and a written reflection on the individual contribution to the group. This constitutes the basis for assessing course learning outcomes that concern competence, judgement and approach and is included in the course portfolio. The course portfolio also includes active participation in group exercises and written assignments with associated components.

If there are special reasons, other forms of assessment may apply.

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 achieve the grade of Pass as a final grade, the grade of Pass is required on all components. To achieve the grade Pass with Distinction as a final grade, the grade on the course portfolio is, in addition, to be Pass with Distinction

Entry requirements

Passed examinations and course components in the Biomedicine Programme's semesters 1-3 amounting to at least 60 credits and completed courses BIMB40 (Organ Systems and Homeostasis of the Human Body) and BIMB41 (Molecular Basis of Disease).

Subcourses in BIMB42, Biomedicine: Pharmacology and Drug Discovery

Applies from V22

2201 Course portfolio, 5,0 hp
Grading scale: Fail, Pass, Pass with distinction
2202 Multiple-choice questions, 2,5 hp
Grading scale: Fail, Pass