

BIMA81, Biomedicine: Molecular Medicine, 15 credits

Biomedicin: Molekylär medicin, 15 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus is an old version, approved by Committee for Biomedical, Medical and Public Health Education on 2016-02-10 and was last revised on 2016-02-10. . The revised syllabus applied from 2016-07-01. , autumn semester 2016.

General Information

As of the autumn semester 2017, this course is a compulsory component of the Bachelor of Medical Science programme in Biomedicine and included in semester 5.

Language of instruction: English

Main field of studies

Biomedicine

Depth of study relative to the degree requirements

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

- account for known and hypothetical pathophysiological and molecular mechanisms underlying diseases including examples from infection medicine, internal medicine, oncology and neurology, and how these hypotheses can be used to develop new diagnostic and therapeutic methods
- use knowledge in biochemistry, cell biology and physiology to explain medical problems
- explain the role of peer review in the system of research funding

Competence and skills

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

- discuss biomedical research in speech and writing using the appropriate terminology
- synthesise information from subject-specific original and survey articles and place it in the relevant medical context
- formulate and evaluate hypotheses concerning problems and issues of molecular medicine
- design research programmes in accordance with given instructions and deadlines
- provide and use constructive written peer review feedback on the form and content of research programmes, and judge the quality, relevance and feasibility of research programmes

Judgement and approach

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

- assess and critically review the contents of original research articles
- adopting a procedure similar to the one used in research funding assessment panels, assess, prioritise and subsequently, in groups, rank research programmes
- reflect on interpretations of biomedical research results published in mass media and assess their social impact
- reflect on the ethical and social impact of the knowledge and applications of molecular medicine

Course content

The general aim of the course is to enable students to acquire broad knowledge of research in molecular medicine and to develop generic skills such as the ability to communicate, discuss and critically review research publications and research programmes in speech and writing. The course consists of thematic weeks on specific subjects, literature study, group work, oral presentations and written assignments in the form of a course portfolio. The specific subjects are selected to illustrate a broad spectrum of methods of molecular biology, studies in biomedicine and diseases. The course shall provide students with an increased understanding of molecular disease mechanisms, and addresses the development of new diagnostic and therapeutic methods. The ethical and social impact of biomedical research results will also be discussed.

The required reading mainly consists of research articles, enabling the students to acquire practice in assimilating information and critically reviewing published data. The students practise presentation techniques and the ability to summarise and communicate acquired knowledge through oral presentations. The ability to interpret, discuss and evaluate biomedical issues, hypotheses and results is trained through group assignments.

Furthermore, students are to write two research programmes, acquiring basic knowledge about national and international systems for research funding, the ability to follow instructions on the design of research programmes, creative, analytical and communicative skills, and experience of the peer review process.

Course design

The course includes both independent study and group work. Each thematic week consists of a combination of lectures, seminars, article studies and group assignments. The thematic week concludes with oral presentations in which students present their work and conclusions from the past week. The students are to individually write two research programmes in the course portfolio, provide and receive feedback, and reflect on the components.

The learning outcomes associated with assimilating, summarising, evaluating and communicating information from published research will be addressed through literature studies, lectures, group assignments and oral presentations.

The knowledge and skills in designing and writing research programmes will be practised by the students through individually writing two research programmes according to instructions. The students will receive feedback on the first research programme through peer review and comments from the course director. The peer review will provide students with practical experience of the peer review process and practice in providing constructive feedback and critical analysis. Knowledge of the role of peer review in the system for research funding is acquired by assessing and ranking research programmes in groups. The second research programme is to be presented and discussed at the oral exam.

Analysis and reflection with regard to the ethical and social impact of biomedical research is a recurring element of the course and practised through group assignments, presentations, and the design and review of a research programme.

Active participation in group assignments and presentations is compulsory.

Assessment

The assessment is based on two examination components: a portfolio and a written and oral exam.

The portfolio is to contain two written research programmes designed as applications for research funding in accordance with instructions, a report of peer review provided and received, a reflection on how the peer review affected the design of the second research programme, and a reflection on the assessment and ranking of research programmes in groups. For a Pass on the portfolio, the student must also have completed all compulsory components.

The written and oral exam consists of two parts: a written exam consisting of questions on all subjects of the thematic weeks and an oral exam in which the student is to present the second research programme in the portfolio and answer questions based on the written exam on the subjects of the thematic weeks.

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

Grades

Marking scale: Fail, Pass.

Active participation in PBL tutorials, approved article presentations and a passed written exam are required for fully passing the course.

Entry requirements

To be admitted to the course, students must have completed two years of studies on the Bachelor of Medical Science programme in Biomedicine or 90 higher education credits including at least 15 credits in biochemistry, 30 credits in cell biology, 15 credits in physiology and 15 credits in pathobiology/pharmacology.

Further information

The course largely corresponds to the previous courses BIMA51 and BIMA60. The course is compulsory on the Bachelor of Medical Science programme in Biomedicine as of the autumn semester 2017. Students already admitted to the programme may substitute this course for BIMA51 and BIMA60 in the autumn semester 2016, provided that they take the new degree project course of 30 credits in semester 6.

Subcourses in BIMA81, Biomedicine: Molecular Medicine

Applies from H17

- 1701 Written exam, 7,5 hp
Grading scale: Fail, Pass
- 1702 Course portfolio, 7,5 hp
Grading scale: Fail, Pass

Applies from H16

- 1601 Written and oral exams, 12,0 hp
Grading scale: Fail, Pass
- 1602 Course portfolio, 3,0 hp
Grading scale: Fail, Pass