Faculty of Medicine

LÄKC55, Scientific Theory and Application (Basic Level), 15 credits

Vetenskaplig teori och tillämpning, 15 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus is an old version, approved by The Medical Degree Programme Board on 2021-02-10 and was last revised on 2022-09-14. . The revised syllabus applied from 2022-09-14. , spring semester 2023.

General Information

The course is a compulsory part of the Medical Programme and is given in semester 5.

Language of instruction: Swedish
Literature and teaching in English may be included.

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

Learning outcomes

Knowledge and understanding

For a Pass on the course, the students shall be able to:

- account for laws, statutes and equality aspects with respect to clinical assessments at a general level
- account for basic concepts and principles respect quantitative and qualitative study design and methodology and possibilities and limitations in respective methodologies
- provide a specialised account of the current state of knowledge and of current research in a delimited area of the medical field

Competence and skills

For a Pass on the course, the students shall be able to:

- apply concepts and principles with respect to the structure of scientific articles, reference management and copyright
- apply concepts and principles with regard to statistics and epidemiology
- apply appropriate search strategies when searching for scientific literature
- apply concepts and principles of relevance to a systematic literature search
- apply principles with regard to relevance assessment, quality audit and evidence grading of scientific articles by means of templates
- apply concepts, principles, legislation and ordinances with regard to research ethics
- use a specific issue to independently seek, select and assess sources, and use information from the scientific literature in a scientific project and in discussions with fellow students
- carry out an own scientific project based on project plan and compile and analyse results
- discuss study design choice and methods for own scientific project based on the possibilities and limitations of the methods
- critically evaluate the significance and limitations of the results of an own scientific project based on the issues and method and in relation to the current knowledge in the field
- write a research paper in Swedish or English, and a popular science summary of the paper in Swedish
- independently account for and discuss an own scientific project orally in Swedish
- critically review the specialised projects of fellow students and provide constructive oral feedback

Judgement and approach

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

- make assessments informed by aspects of research ethics which are specifically relevant to their own scientific project
- assess their need for knowledge development and take responsibility for this in a delimited part of the medical field

Course content

In a theoretical section, relevant basic knowledge is given for a scientific approach including the bases for the systematic evaluation of scientific literature. Within the framework of a scientific project, the students are given the opportunity to specialise in fields of special interest to them and thereby are given the chance to develop skills in the search, critically review and compilation of medical and scientific information from different sources. The degree project may consist of a review of medical records, a register study, clinical or experimental work or a systematic literature review and be presented in an academic paper.

Course design

The theoretical component provides basic knowledge of quantative and qualitative methods, research design, statistics, epidemiology, clinical trials, research ethics, laws and ordinances, literature search and systematic review, academic writing and oral presentations, and peer review by means of lectures, seminars and group exercises and online learning. All scheduled teaching, apart from lectures, is compulsory. The

project component of the course consists of the execution of an independent research project under supervision.

Assessment

The knowledge content of the course with respect to quantitative and qualitative method, study design, epidemiology, statistics, clinical assessments, research ethics and copyright are examined through theoretical examinations (3.0 credits).

Compulsory components involving literature searches and epidemiology and completed assignments involving a systematic review of scientific literature via digital learning management system are documented in a course portfolio (1.5 credits).

The thesis (9.0 credits) and oral presentation and peer review (1.5 credits) assess the learning outcomes concerning literature searches and the scientific project.

The academic paper should include a summary in English (abstract) and a popular science summary in Swedish. The paper is to be presented and defended orally; in addition, a critical peer review of another student's scientific project is also included.

The students' individual contributions (the students at work in pairs) to the project should clearly be declared in the thesis and when necessary, must be discussed in the oral presentation.

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.

Entry requirements

To be admitted to the course, students must have passed courses (all examinations/components) up to and including semester 3 of the Medical Programme. Passed grade on PBL - Basic Professional Approach in the course Pathogenesis (T4).

Subcourses in LÄKC55, Scientific Theory and Application (Basic Level)

Applies from H23

2301 Theoretical Examination, 3,0 hp
Grading scale: Fail, Pass
2302 Essay, 9,0 hp
Grading scale: Fail, Pass
2303 Oral presentation and opposition, 1,5 hp
Grading scale: Fail, Pass
2304 Portfolio, 1,5 hp
Grading scale: Fail, Pass

Applies from H21

2101 Written Examination, 3,0 hp
Grading scale: Fail, Pass
2102 Essay, 9,0 hp
Grading scale: Fail, Pass
2103 Oral presentation and opposition, 1,5 hp
Grading scale: Fail, Pass
2104 Portfolio, 1,5 hp
Grading scale: Fail, Pass