

SYLLABUS

Fundamental in Medical Science 15 credits M0094H

Grundläggande medicinsk vetenskap

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2023-02-14

Fundamental in Medical Science 15 credits M0094H

Grundläggande medicinsk vetenskap

First cycle, M0094H

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G VG *	Medicinsk vetenskap	Medicine

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language + Swedish upper secondary school courses Mathematics 2a or 2b or 2c, General Science 2, Social Studies 1b or 1a1+1a2.

Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

Course Aim

The overall course objective is that the student will acquire knowledge of anatomy, physiology and immunology in order to understand the symptoms which arise with different conditions and what this can mean for the patient. Through knowledge of the different types of pathogens (such as bacteria, viruses and fungal diseases) and their transmission routes and the diseases they can cause, the student acquires a good understanding of the significance of various diagnostic methods and treatments. The student will be able to explain, justify and implement preventive and safe care that reduces the risk of spreading pathogens.

Component 1: Anatomy

Knowledge and understanding

After completing the course, the student will be able to describe:

Medical and anatomical terminology
Musculoskeletal anatomy
Neuroanatomy
Organ anatomy

After completing the course, the student will be able to explain:

Cell structure and function
The importance of different types of tissues for the body's structure and function

Competence and skills

After completing the course, the student will be able to

Palpate and locate important anatomic structures in order to give injections and perform testing/examinations in an adequate and patient-safe manner

Component 2: Physiology

Knowledge and understanding

After completing the course, the student will be able to explain:

Basic physiological processes

Physiological functions of the body's different organ systems such as the musculoskeletal system, gastrointestinal tract, kidneys and urinary tract, respiratory organs, heart and circulation, nervous system, endocrine system, sensory organs, reproductive organs
Physiology of Pain

Competence and skills

After completing the course, the student will be able to:

Measure and evaluate the patient's respiratory capacity, circulation and elimination in a proper manner with and without medical devices

Explain the meaning of and assess the various components of ABCDE care

Measure, assess and evaluate the pulse and blood pressure in a correct manner and understand sources of error

Connect an ECG in a correct manner and understand sources of error

Perform adult cardiopulmonary resuscitation (CPR) in a correct manner

Judgement and approach

After completing the course, the student will be able to:

Assess the different functions of the organ systems in the body to understand how they are affected by disease

Reflect on their own profession's area of responsibility and identify ethical problems related to emergency situations in relation to principle-based ethics

Reflect on the above skills in relation to intersectionality

Component 3: Immunology and Microbiology

Knowledge and understanding

After completing the course, the student will be able to explain:

The specific and non-specific immune system functions

The inflammatory response and how it can manifest itself in patients with different types of conditions

How bacteria are structured, their function and what is important about their replication

Characteristics of different types of viruses

How fungal infections manifest themselves in humans

Competence and skills

After completing the course, the student will be able to:

Understand the importance of and be able to perform correct testing and sample handling so that microbiological diagnostics are safe from a patient and staff perspective

Judgement and approach

After completing the course, the student will be able to:

Reflect on the risks to patients with compromised immune responses in order to apply safe care

Component 4: Infection Control

Knowledge and understanding

After completing the course, the student will be able to explain:

Healthcare-associated infections and their consequences for individuals and society

Basic hygiene practices and their applications in different contexts

Different grades of cleanliness, how they are achieved and maintained

Rules for workwear and safety equipment and how, when and why this use is applicable

Waste management in health and medical care

How different forms of care can reduce the risk of infectious disease

Competence and skills

After completing the course, the student will be able to apply:

Adequate hand hygiene and basic hygiene practices adapted to the clinical situation

Clean, aseptic and sterile procedures/technology

The correct procedure in the disinfection room

Handling healthcare waste

Judgement and approach

Explain the relevance of basic hygiene practices and be able to apply this knowledge in clinical situations to achieve safe care and sustainable development for individuals and society

Contents

Component 1: Anatomy

Component 2: Physiology

Component 3: Immunology and Microbiology

Component 4: Infection Control

Medical and anatomical terminology

Cell Biology and Histology

Musculoskeletal Anatomy

Neuroanatomy

Organ Anatomy

Organ Physiology

Neurophysiology

Physiology of Pain

Muscle Physiology

Immunology

Microbiology

Infection Control

Adult CPR

Simulation and Method Exercises

Ethics

Legislation and Statutes

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Teaching and learning take place through individual studies, study assignments, group discussions, laboratory experiments and seminars with oral presentation.

Lectures are given in the chosen sections of the course. Participation in laboratory experiments and seminars is mandatory.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. A three-grade scale is used; pass with credit, pass or failed. The course objectives are examined through an individual written exam and seminar.

In order to pass the whole course, students must pass all parts and the mandatory components must be completed.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Remarks

Passing this course is a special entry requirement for courses involving a placement and degree project.

Transition terms

The programme syllabus is valid from autumn semester 2018 for those students who will then be accepted on the course. The faculty programme director and heads of subjects decide on individual study plans for students who were accepted on previous programme syllabuses and who, following approved leave from studies, resume their studies in accordance with the current programme syllabus.

If a course has ceased to exist or has undergone major changes, in the first year after the change has occurred students must be offered two opportunities to take the exam and then one more each year for a further two years, based on the course syllabus that was valid at the time of registration.

Course offered by

Department of Health, Education and Technology

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0002	Examination Physiology	U G VG *	6	Mandatory	A18	
0003	Examination Microbiology and Immunology	U G VG *	2	Mandatory	A18	
0004	Laborations	U G#	1.5	Mandatory	A18	
0005	Practical exam in infection control	U G#	1.5	Mandatory	A18	
0007	Examination Anatomy	U G VG *	3.7	Mandatory	A20	
0008	Adult CPR	U G#	0.3	Mandatory	A20	

Last revised

by Anna Öqvist, Director of Undergraduate Studies at the Department of Health, Education and Technology 2023-02-14

Syllabus established

by Prefekt vid Institutionen för hälsvetenskap 2018-02-15