Course syllabus for

The Healthy Human 2, 30 credits

Den friska människan 2, 30 hp

This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

Please note that the course syllabus is available in the following versions:
Spring2008 , Autumn2008 , Spring2009 , Autumn2009 , Spring2010 , Autumn2011 , Spring2013 , Autumn2013 , Autumn2014 , Spring2015 , Autumn2015 , Spring2016 , Autumn2016 , Autumn2017 , Spring2018 , Autumn2019 , Spring2020 , Autumn2020 , Autumn2021

Course code	2LK002
Course name	The Healthy Human 2
Credits	30 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Medicine
Level	G1 - First cycle 1
Grading scale	Pass, Fail
Department	Department of Physiology and Pharmacology
Participating institutions	• Department of Microbiology, Tumor and Cell Biology • Department of Medical Biochemistry and Biophysics • Department of Neuroscience • Department of Molecular Medicine and Surgery
Decided by	Pn för läkarprogrammet
Decision date	2007-03-13
Revised by	Programme committee for study programme in medicine
Last revision	2017-10-23
Course syllabus valid from	Spring 2018

Specific entry requirements

The course Introduction to The physician profession as well as the component ”Basic structure and development- from eggs to embryo” in the course the healthy human 1.

A student failing due to shortage in knowledge, skills or attitudes, thus jeopardising patient safety and/or trust in medical care, can be assigned to a new clinical placement only after having completed objectives set in the individual plan.

Objectives

Learning Outcomes
The general aim of the course is that student should acquire basic knowledge and proficiencies about the body's normal structure and function from cell- till organlevel based on a cohesive image of the healthy human's function system. The student should also acquire attitude of significance for the continued medicine programme and the physician profession.

Learning outcomes
Knowledge and understanding is structured after the SOLO taxonomy (S1-S4) and the skills according to Miller's pyramid (M1-M4) (see last in the course syllabus). *Knowledge and understanding*
The student should be able to:

- account for structure and function from cell- till organlevel with respect to blood, circulation, respiration, hematopoiesis, skin, immune system, temperature regulation, urinary organs, body fluids, endocrine system, reproductive organs and musculoskeletal system, be able to account for and analyse how these systems interact in the control of the internal environment of the body as well as be able to discuss how changed structure and function in the systems can lead to disease. (S3)
- describe individual-, gender- and agerelated differences in structure and function of the included systems as well as account for different ways to study the structure and function of the different systems. (S2)
- account for basic mechanisms for team effort and leadership (S2)
- account for psychological mechanisms in the meeting with the patient for gender aspects and inter-cultural communication for basic concepts in medical psychology as well as for professional ethical rules. (S2) (PD, PV).
- account for the theoretical background as well as methodology for study of heart, peripheral pulses, blood pressure, lungs, lymph nodes as well as the thyroid gland. (S2)

Skills
The student should be able to:

- carry out simple physical examinations respect heartbeat, blood pressure, respiratory sound, lymph nodes, thyroid gland as well as function tests of joints and musculature. (M3)
- identify anatomical structures on dissected bodies plastic models and in radiological images as well as tissues and organs in histological preparations. (M3)
- distinguish ethical problems and be able to analyse and argue rationally around them. (M2) (PD, PV)
- hold a conversation with patients and apply open listening for the patient's spontaneous medical history according to the method of patient-focused communication as well as be able to respond to both patients and other concerned in a respectful way. (M3) (PV, PD)
- apply recommendations for living habits such as physical activity in disease prevention and illness treatment (FYSS) in practical patient care. (M2) (PV)

Attitudes
The student should be able to:

- demonstrate a critical attitude to how knowledge of current organ- and functionsystems has been received as well as be able to separate scientifically based knowledge from proven experience.
- reflect on different interests and agendas in health care. (PD, PV)
- act respectful against patients, other students, teachers and staff as well as take active responsibility for one's own learning and professional development.

Content

The topic-specific core of the course consists of the basic scientific disciplines histology, macroscopic anatomy, medical biochemistry, physiology and immunology. Furthermore, elements from the clinical

disciplines anaesthetics, urology, endocrinology, pediatrics, obstetrics, gynaecology, orthopaedic surgery and family medicine as well as the subject areas team and leadership and psychology occur. Both basic science and clinically active teachers participate in the course.

The course is divided into six components.

Blood, immunesystem, muscle, circulation and respiration, 8 hp The component contains: The components, properties and function of the blood. Thymus and other lymphatic organs. Histology and functions of the skin. Structure and normal functions of the immune system. Histology and physiology of the skeletal musculature including the internal structure and internal organisation with muscle fibres of muscles and motor units. Anatomy, histology and normal function and regulation of the heart and blood vessels. Temperature regulation. Anatomy, histology as well as normal function of the lungs, airways and gas exchange and regulation. **Urinary organs, body fluids, endocrinology and reproduction, 7.5 hp** The component contains: The anatomy, histology and function of the kidneys and the urinary tract; regulation of fluid-, electrolyte- and acid/base balance. Hormone-producing cells, tissues and the histology and anatomy of the endocrine glands.
The chemistry, production and effects of hormones, and the regulation of hormonal systems. The histology and anatomy of the reproductive organs. Sex differentiation. The morphology and function of germ cells. The effects and regulation of gonadal hormones. Fertilisation. Pregnancy.

The human in movement, 4 hp The component contains: The histology and anatomy of the musculoskeletal system as well as basic kinesiology (movement theory). The basic structure of the motor function (neuronal control, reflexes). Exercise physiology and effects of physical training. **Professional development and primary care, 1.5 hp** The component contains:
Basic concepts in medical psychology with respect to psychological mechanisms, adherence, emotions and coping strategies. Gender Medicine and inter-cultural communication. Team and leadership. Workshop with mentor including individual selfassessment. **Integration and exam, 7.5 hp** The component involves integration, repetition and that in an examination summarise all intended learning outcomes of the course. **Primary care, 1.5 hp** The component contains: Patient-focused working methodology and physical examination in placement.

Teaching methods

As support for the learning during the course is given the following
teacher-supervised/teacher-supported resources: lectures, group assignments, project work, seminars, workshops, laboratory sessions, dissections, microscopy exercises, demonstrations, proficiency training as well as placement. Not teacher-supervised studies take place in the form of individual studies, reflection and studies.

Teaching in English can occur.

Examination

All learning activities that include formative feedback are compulsory.

The blood, the immune system, muscle, circulation & respiration *Compulsory parts:*
Presentation project work blood, seminar the immune system, seminar muscle, seminar heart & circulation and seminar respiration.
Readiness assurance test (TUM) 1 and 2- formative web-based written examinations in circulation & temperature regulation or respiration. *Examination:*
Written examination including all of component 1

Urinary organs, body fluids, the endocrine system and reproduction *Compulsory parts:*
Presentation group assignment the buffers of the blood, integration seminar for urinary organ & body

fluids. TUM 3- formative web-based written examination in urinary organ & body fluids.
TUM 4- formative web-based written examination the extensive endocrine system and reproduction.
Examination:
Written examination- individual examination on anatomical models and preparations or histological preparations, including anatomy and histology of the blood, the immune system, circulation, respiration, urinary organs, the endocrine system & reproduction.

Human in motion *Compulsory parts:*
Seminar with presentation and discussion of case from PV. *Examination:*
Web-based written examination the histology of the extensive musculoskeletal system.
Written examination- individual examination with anatomical models and preparations of the anatomy of the entire musculoskeletal system.

Professional skills (PU) *Compulsory parts:*
Workshop with mentor including formative assessment, seminar about team and leadership, seminar about medical psychology and seminar about gendermedicine and inter-cultural communication.
Examination:
Passed achievement in PU-seminars.
Web-based written examination extensive neurosurgical nursing and inter-cultural communication.

Primary care (PV) *Compulsory parts:*
All placement. *Examination:*
Passed placement according to assessment item.

Integrated examination
Written examination

To write the integrated examination all compulsory learning activities, excepted PV and seminar with presentation of case from PV as well as PD, need to be completed.

Course Coordinator assesses about and if so how absence from compulsory activity can be completed. Absence from a compulsory activity can imply that the student can not complete the occasion until next time the course be given.

Limitations of the number of examinations or practical training sessions
Student who is not passed after regular examination has a right to participate at further five examinations. If the student has carried out six failed examinations/test be given no additional examination. regarding placement components have the student right to go through these two (2) times.

Examiner can with immediate impact interrupt a student's placement (placement) or the equivalent if the student shows such serious deficiencies in knowledge, skills or attitudes that the patient security or the patients' trust for the healthcare are jeopardised. When placement is interrupted like this, it implies that the student fails on current component and that a placement is consumed. In such cases, an individual action plan should be established, which states the activities and examinations that are required before the student is given possibility to a new placement on this course.

Transitional provisions

If a course has been closed down or undergone major changes, at least two additional examinations (excluding regular examinations) in the previous contents are provided during a period of a year from the date of the change.

Other directives

Course evaluation takes place according to the guidelines that have been stated by the Board of education at Karolinska Institutet.

Literature and other teaching aids

Feneis, Heinz; Dauber, Wolfgang

Anatomisk bildordbok

Spitzer, Gerhard; Brinkman, Ingrid

5., utökade uppl. /b [fackgranskning: Håkan Aldskogius] : Stockholm : Liber, 2006 - [4], 520 s.
ISBN:91-47-05301-1 LIBRIS-ID:10162715
URL: http://www2.liber.se/bilder/omslag/100/4705301o.jpg
Library search

Gilroy, Anne M.

Anatomy : an essential textbook : Latin nomenclature

New York : Thieme, [2016] - 510 s.
ISBN:9781626231177 LIBRIS-ID:18268868
Library search

Atlas of anatomy : Latin nomenclature

Gilroy, Anne M.; MacPherson, Brian R.; Ross, Lawrence M.; Schünke, Michael; Schulte, Erik; Schumacher, Udo

2nd ed. : New York : Thieme, 2013 - 694 p.
ISBN:9781604067477 (hardcover : alk. paper) LIBRIS-ID:14805917
Library search

Netter, Frank H.

Atlas of Human Anatomy

Sixth Edition : Philadelphia : Saunders/Elsevier, c2014 - 1 volume (various pagings)
ISBN:9781455704187 (hbk.) LIBRIS-ID:16454748
Library search

Sobotta atlas of human anatomy : musculoskelatal system, internal organs, head, neck, neuroanatomy

Sobotta, Johannes; Paulsen, Friedrich; Waschke, Jens; Klonisch, Thomas; Hombach-Klonisch, S.

15th ed., English version with Latin nomenclature : München : Elsevier/Urban & Fischer, 2011. - 3 dl.
ISBN:9780723437314 (set) LIBRIS-ID:17852490
Library search

Brunnström, Signe

Brunnstrom's Clinical kinesiology.

Smith, Laura K.; Weiss, Elizabeth Lawrence; Lehmkuhl, L. Don

5. ed. /b revised by Laura K. Smith, Elizabeth Lawrence Weiss, L. Don Lehmkuhl : Philadelphia : F.A. Davis, cop. 1996 - 468 s.
ISBN:0-8036-7916-5 LIBRIS-ID:5688170
Library search

Snell, Richard S.; Snell, Richard S.t Clinical anatomy for medical students.

Clinical anatomy

7. ed. : Philadelphia : Lippincott Williams & Wilkins, cop. 2004 - x, 1012 s.
ISBN:0-7817-4315-X LIBRIS-ID:9023138

Library search

Rhoades, Rodney.; Bell, David R.

Medical physiology : principles for clinical medicine

4th ed. : Philadelphia : Wolters Kluwer Health/Lippincott Williams & Wilkins, c2013. - xvi, 819 p.
ISBN:978-1 511-1039-5 LIBRIS-ID:14002815

Library search

Medical physiology

Boron, Walter F.; Boulpaep, Emile L.

Third edition. : Philadelphia, PA : Elsevier, [2016] - xii, 1297 pages
ISBN:9781455743773 LIBRIS-ID:19496717

Library search

Rådmark, Olof; Wetterholm, Anders

Syror och baser. Vattenlösningars egenskaper, osmos och tonicitet. Elektrolyter

Institutionen för Medicinsk Biokemi och Biofysik, 2011

Ross, Michael H.; Pawlina, Wojciech.

Histology : a text and atlas : with correlated cell and molecular biology

Seventh edition. : Philadelphia : Wolters Kluwer Health, [2015], 2016 - xv, 984 pages
ISBN:9781451187427 LIBRIS-ID:17630334

Library search

Abbas, Abul K.; Lichtman, Andrew H.; Pillai, Shiv.

Basic immunology : functions and disorders of the immune system.

4th ed. : Philadelphia : Saunders, cop. 2014 - x, 320 s.
ISBN:978-1-4557-0707-2 (pbk.) LIBRIS-ID:13610618

Library search

Medicinsk mikrobiologi & immunologi

Brauner, Annelie

1. uppl. : Lund : Studentlitteratur, 2015 - 824 s.
ISBN:9789144038681 LIBRIS-ID:15416988

Library search

Brändén, Henrik; Andersson, Jan

Grundläggande immunologi

Engqvist, Jeanette; Sonesson, Johan

3., [uppdaterade och omarb.] uppl. /b [illustrationer: Jeanette Engqvist samt Johan Sonesson] : Lund : Studentlitteratur, 2004 - 354 s.
ISBN:91-44-03073-8 LIBRIS-ID:9522851

Library search

Immunobiology : the immune system in health and disease

Janeway, Charles A.

6. ed. : New York : Garland, cop. 2005 - 823 s.
ISBN:0-8153-4101-6 (Garland) LIBRIS-ID:9293790

Library search

Parham, Peter

The Immune System

3rd ed. : New York : Garland Science, 2009

Neuroscience
Purves, Dale

5. ed. : Sunderland, Mass. : Sinauer Associates, cop. 2012 - xvi, 759 s.
ISBN:978-0-87893-695-3 (hbk.) LIBRIS-ID:12074995
Library search

Profesional development

Professionell utveckling inom läkaryrket
Andersson, Sven-Olof

1. uppl. : Stockholm : Liber, 2012 - 306 s.
ISBN:978-91-47-09967-2 LIBRIS-ID:12542995
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