



**Karolinska
Institutet**

Course syllabus for

Clinical Medicine, 48 credits

Klinisk medicin, 48 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:

Autumn2009 , Spring2010 , Spring2011 , Autumn2012 , Spring2015 , Autumn2015

Course code	2LK017
Course name	Clinical Medicine
Credits	48 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Medicine
Level	G2 - First cycle 2
Grading scale	Pass, Fail
Department	Department of Clinical Science and Education, Södersjukhuset
Decided by	Programnämnden för läkarprogrammet
Decision date	2009-05-15
Revised by	Programme committee for study programme in medicine
Last revision	2024-09-06
Course syllabus valid from	Autumn 2015

Specific entry requirements

All The higher education credits from semester 1 to 3 and passed on the part "Medical Diagnostics" in the course Disease and illness 2 and part "Kliniskt körkort" in the course Integrated preparatory examination .

Objectives

The learning outcomes of the course are limited to common and important features in clinical practice within the specialities internal medicine, infection medicine, skin and venereal diseases, clinical pharmacology and geriatrics, where the learning outcomes relate to the general aims of the entire Study Programme in Medicine.

The knowledge is tiered according to the SOLO taxonomy: S1) simple (e g know, identify), S2) compounded (e g account for, describe), S3) related (e g analyse, relate), and S4) extended (e g theorise, analyse). The skills are structured according to Miller's pyramid: M1) know, M2) know how to carry out, M3) be able to show, and M4) be able to carry out professionally.

Knowledge and understanding

The system of man, in balance

The student should be able to

- * explain the aging and how the aging influences the structure and function (S3) of the body.
- * account for, and compare, basic psychological models of behaviour (S3).

The system of man, in imbalance

The student should

- * be able to explain abnormal physical structure and function, risk factors, symptoms, cause of disease, disease mechanisms, natural progress, prognosis and principles of investigation, treatment and rehabilitation (S3) in common, acute and critical illness, and also be able to account for the importance of rehabilitation in less common diseases (S2).
- * be able to account for guidelines for taking care of patients in the final stage of life and for palliative care (S2).
- * be able to account for principles regarding infection prevention, pharmacological treatment of national diseases, rational drug treatment, drug development, drug metabolism, interactions and classification of adverse drug reactions (S2).
- * be able to explain and evaluate the choice of drug treatment and individualised dosage considering the patient's age, and to be able to follow up drug effects and adverse drug reactions (S3).

In interplay

The student should

- * be able to explain and compare work distribution between different nursing levels and also between municipality and county councils (S3).
- * be familiar with the fields and skills of other professional categories, his/her own responsibility, his/her own authority, obligations and principles of patient-focused working methods and behavioural change.
- * be able to account for the communicable diseases act, rules for drug prescription and current legislation concerning patient documentation and be able to account for relevant laws, authorities and obligations as well as principles of coordinated care planning (S2).
- * in common diseases, be able to account for occurrence, health economic effects, principles regarding screening and prevention, and the importance of life style factors (S2).
- * be able to account for basic concepts in health economics and psychology and also be able to explain principles and working methods in evidence-based medicine (S 2-3).
- * be able to show knowledge and understanding for the scholarly grammar and for evidence-based medicine and understand what ranking of evidence is and also why different studies obtain different weight within evidence-based medicine (S3).
- * be able to account for the organisation of the medical research (S2).
- * be able to account for the importance of life-long learning (S2).

Skills

Direct contact

The student should

- * independently be able to take medical history including medical history and be able to carry out a systematic physical examination (M4).
- * be able to show how to suitably choose, carry out and inform about common examinations (M3)..
- * be able to show how to identify, process and treat common diseases (M3).
- * independently and initially be able to manage and treat acute unconsciousness, anaphylactic shock and severe acute infections (M4).
- * know at a general level how to treat less common, but potentially dangerous, diseases (M2).
- * be able to independently prescribe drugs and assess interaction risks (M4) and be able to show how to initiate, follow up, adjust and end a drug treatment considering individual use and individual factors (M3).
- * be able to independently act in a professional manner and to work patient-focused (M4), be able to show how to answer questions, explain, give advice, instruct, prescribe and relay difficult information to patients and families and how to use effective preventive behavioural strategies (M3).
- * Be able to integrate ethical and psychological aspects in one's clinical work (M2).

Indirect contact

The student should

- * be able to show how one processes and interprets the results of medical record as well as common diagnostic tests, how to make a diagnosis, discusses differential diagnoses, make clinical decisions and identify critically ill patients that require intensive care (M3).
- * be able to show how to assess cognitive ability function, appropriate nursing level, rehabilitation needs, adverse drug reactions, needs of other specialities 'and professional categories' competence and views. To determine the need for hospital care for common, acute and critical diseases (M3).
- know at a general level how to assess and handle less common diseases and dangerous diseases (M2).
- * be able to show how to acquire and document relevant clinical information for care and rehabilitation (M3).
- * be able to demonstrate ability to formulate an adequate search strategy on the basis of a clinical issue and be able to modify the search strategy regarding various types of the systematic overviews, meta-analyses, randomized controlled studies, and clinical treatment guidelines (S3).
- * be able to show how to critically review and evaluate clinical issues based on evidence-based medicine, formulate aims and action plans for care and how to use active expectance (M3).

In interplay

The student should

- * be able to show how one engages appropriate expert knowledge through constructive cooperation with colleagues and experts from other professions within the care how one works as leader under stress how one works as member in a care organisation leads the medical treatment in collaboration, how one carries out commonly occurring assignments on ward and clinic and how one reports about adverse drug reactions (M3)
- * be able to acquire and interpret scholarly information and information about drugs from different databases and other sources, to apply evidence-based medicine (M3).
- * be able to classify and code clinical information (M3)
- * independently be able to carry out common administrative routines (M4).
- * be able to show how to handle the the insufficiencies and limitations of medical as well as personal knowledge and how to identify and evaluate risks for the patient, himself/herself and others (M3).
- * be able to show how to orally, in writing and electronically communicate health care information to colleagues and other professional categories (M3).
- * know how to issue insurance medicine certificates (M2).
- * be able to search for electronic documents in databases (M3).

Attitude

Knowledge and attitude

The student should

- * be able to explain the fundamental value and basic ethical principles of the health care and his own values and attitudes and also be able to explain how all this influence the own behaviour in interplay with patients close, health-care personnel and the society (S3).
- * be able to administrate his/her own learning portfolio (M4).

Behaviour and assessment skills

The student should

- * be able to show a critical, reflecting and scholarly attitude (M3), be able to explain the importance to be a reflecting physician in clinical activities and be able to integrate clinical knowledge with best available evidence (S3).
- * be aware of and be able to reflect on consequences of both his/her own and others' actions and attitudes in various types of patient meetings (M3).
- * be able to show how to identify, treat and justify ethical problems and consequences of his/her own and others' actions in clinical situations, including in the final stage of life (M3).
- * be aware of issues with respect to equality and diversity, and be able to see how these issues affect own values, attitudes and actions as well as the patient's (S3).
- * have developed a reflective ethical attitude vis-à-vis patients, families, colleagues and other health care staff (M3).

Content

Distribution of credits between the different parts of the course: The in the course included parts comprise 32 weeks and they give together 48 higher education credits. The expenditure of time and the distribution of points for the included parts appear below, where VFU denotes clinical rotations (placements).

The course has got 15 parts.

The parts of the course; duration in weeks:

Internal Medicine: 19,2

Infectious diseases

4,0

Dermatology

3,3 Geriatric medicine

1,7

Clinical Pharmacology: 0,8

Primary care:

3,0

Professional skills and scientific development are integrated in the above part.

Integration

The course is a collaboration between the following medical subjects and their respective clinical specialities and basic scientific antecedents:

internal medicine, infectious diseases, dermatology and venereal diseases, geriatric medicine, clinical pharmacology and primary care.

Furthermore, cooperation takes place with other clinical specialities such as surgery, orthopaedics, clinical chemistry, clinical microbiology, image and function medicine, oncology, neurology, psychiatry as well as, when needed, with other clinical and basic scientific specialities. Basic scientific aspects relevant to an understanding of the clinical education, are in all parts integrated with approximately 10% of the theoretical content of the course.

The teaching is also coordinated with previous and following courses. Parts and clinical specialities
The core of the course consists of 10 parts, based on the body function systems with supplements of infections, where the core is limited to common acute, critical and chronic diseases within the responsible specialities. The specialities responsible for the course as well as the participating specialities are shown in the table.

Part: Hematopoiesis and the immune system

Responsible speciality: Internal Medicine

A commonly participating speciality: Infection medicine, clinical chemistry, oncology, clinical pharmacology

Part: Circulation

Responsible speciality: Internal Medicine

A commonly participating speciality: Clinical Pharmacology, image and functional medicine, general medicine, neurology and geriatrics

Part: Respiration

Responsible speciality: Internal Medicine

Commonly participating specialities: Family medicine, oncology, infection medicine

Part: The urinary tract

Responsible speciality: Internal Medicine

Commonly participating specialities: Image and functional medicine, general medicine, surgery, oncology, geriatrics, infection medicine

Part: Metabolism and the endocrine system

Responsible speciality: Internal Medicine

A commonly participating speciality: Clinical Pharmacology, family medicine, geriatrics, skin and venereal diseases

Part: The urinary organs

Responsible speciality: Internal Medicine

A commonly participating speciality: Clinical Pharmacology, family medicine, urology, geriatrics, infection medicine

Part: Motion

Responsible speciality: Internal Medicine

A commonly participating speciality: Clinical Pharmacology, family medicine, orthopaedics, geriatrics

Part: Skin

Responsible speciality: Skin and venereal diseases

Commonly participating specialities: Family medicine, internal medicine, infection medicine, gynaecology and obstetrics

Part: Aging

Responsible speciality: Geriatric medicine

Commonly participating specialities: Internal medicine, clinical pharmacology, oncology, infection medicine, neurology, psychiatry

Part: Infections

Responsible speciality: Infectious medicine

Commonly participating specialities: Clinical microbiology, family medicine, skin and venereal diseases, internal medicine, geriatrics

Integrating assignments

Mental:

Disorientation/turmoil

Learning and memory problems

Unconsciousness/coma

The urinary organs:

Blood in urine

Circulation:

Chest pain

Heart murmurs

Heart arrests

High blood pressure

Abnormal heart activity

Oedemas

Digestion:

Diarrhea

Jaundice

Heartburn/acid reflux

Skin:

Skin neoplasm/dicoloured skin

Exanthemas/flushing

Non-healing wounds

Motion:

Abnormal/unsteady gait/fall

Swelling/pain in joint/extremity

Hematopoiesis and the immune system:

Hemorrhagic disorder

Fever

Enlarged lymph nodes

Reproduction:

Discharges from the abdomen

Burning/sow/itching in the genital area

Respiration:

Dyspnea

Cough

Metabolism and the endocrine system:

Weight loss

Increased sweating

Increased thirst

Development and aging:

Dying patient

The structure of the course

The course is given in 32 weeks with placement in wards and clinics including emergency units and health care centres in primary care. By meeting a both large and varied patient material, the student is gradually guided into his future professional role.

The clinical speciality internal medicine is responsible for the parts hematopoiesis and the immune system, circulation, respiration, digestion, metabolism and the endocrine system, the urinary organs and motion.

These parts comprise 19.2 weeks. The teaching is integrated both with branches of internal medicine and with specialities associated to internal medicine, such as emergency medicine, cardiology, medical gastroenterology, endocrinology, medical kidney diseases, lung diseases, hematology, allergology, rheumatology and scientific development. Furthermore, the specialities infection medicine, clinical pharmacology, clinical chemistry, image and function medicine, general medicine, geriatrics, neurology and surgery can be integrated. The parts consist of placement which is divided into theory-centered and practice-centered blocks on hospitals usually extensive 3 weeks.

The theory-centered blocks include overview lectures that are supplemented with case-based seminars in small teacher-supervised groups demonstrations, individual studies, practical exercises, i. a. by means of patient simulators, individual or group-based advanced assignments and also other student-activating teaching parts.

Integrating seminars are based on the integrating assignments with the intention of bringing together knowledge relevant to the different clinical specialities for related basic science and for the knowledge fields professional and scientific development. The clinic-based placements integrate case-based teaching on the wards of the hospitals, clinics and emergency units and health care centres in a student and patient-focused manner.

In integrating seminars in other parts, issues are high-lighted with the participation of internal medicine.

The clinical speciality infectious medicine has the principal responsibility for the part infections.

The part comprises 4.0 weeks, and it integrates teaching, with the specialities clinical microbiology, internal medicine, general medicine, clinical pharmacology and geriatrics. In the teaching, both pre-clinical subjects and the knowledge fields professional development and scientific development are integrated. The theory-based teaching of the part comprises survey lectures in all major infection areas followed by case-based seminars in small teacher-supervised groups with discussions concerning diagnostics, epidemiology, clinic and treatment. Seminars are also based on integrating assignments in order to integrate knowledge from participating specialities. The teaching is given in wards, including bedside rounds in small teacher-supervised groups, and in clinics and emergency units.

Feedback on the theory-based teaching takes place continuously and clinical skills are trained regular. A part of the teaching is located to a primary health care centre to illustrate the infection panorama within the primary care.

In integrating seminars during other parts also clinical issues pertaining to infections are present and may involve the participation of infectious medicine.

The part skin is given with principal responsibility of the clinical speciality skin and venereal diseases. This part comprises 3.3 weeks. The part integrates teaching, with the specialities general medicine, internal medicine, infection medicine, gynaecology and obstetrics. In the teaching, pre-clinical subjects, professional development and scientific development are also integrated. The theory-based teaching of

the part comprises survey lectures followed by case-based seminars in small teacher-supervised groups. Seminars are also based on integrating assignments, for which the part has the main responsibility with the aim to integrate knowledge from participating specialities. The part also contains self-study with computerised image bank and interactive cases. The placement of the part takes place patient-close and case-based with student-controlled clinics, auscultation and rounds. In the student-controlled clinics, clinical skills are trained, whereupon individual feedback is given. A part of the teaching is located to a primary care centre.

Also in integrating seminars in other parts of the course issues pertaining to dermatology may be present and may involve the specialty dermatology and venerology.

The part aging is given with main responsibility of the clinical speciality geriatric medicine.

The part comprising 1.7 weeks integrates teaching, with the specialities internal medicine, skin and venereal diseases, general medicine, clinical pharmacology, oncology, infection medicine, orthopaedics, neurology and psychiatry. In the teaching, pre-clinical subjects, professional development and scientific development are also integrated. Drug choices, adverse drug reactions and interactions in elderly are treated in collaboration with clinical pharmacology. The theory-based teaching of the part comprises overview lectures, case-based seminars and integrating seminars with the aim to integrate knowledge from participating specialities. The part also contains self-study with web-based cases.

Placement on geriatric wards and clinics are carried out with patient-centered case-based learning where issues such as comorbidities and diseases of cognition.

The importance of care chains and long-term follow-up are illustrated by clinical training at primary care centers with geriatric out-patients.

In integrating seminars in other parts, issues are highlighted with the participation of the geriatrics speciality .

Clinical Pharmacology, a total of 0.8 week, includes integrated in all parts of the course, since drugs is both the most common treatment modalities and have effects in different organ systems. The student obtains a good basic clinical knowledge of. 3. pharmaceuticals.

Content: prescription of drugs, clinical pharmacological principles, the study of side-effects, interaction and drug analysis and evidence-based pharmacotherapy.

The teaching is given as lectures, group exercises, patient demonstrations, rounds and integrating seminars in collaboration with other specialities.

Primary care. During 3.0 weeks, placement in primary care centers is carried out.

During these rotations, the student has supervised meetings with patients in at the center or in the patient 's home, in order to illustrate diagnostics and treatment of common diseases in the primary care.

A selection of the integrating assignments is treated during the seminars in collaboration with other specialities and basic scientific subjects, where the knowledge fields scientific development and professional development are also integrated. A specific learning outcomes are to be able to (M3) award insurance medicine a certificate.

Basic scientific knowledge is integrated in all part by teachers with such competence participate in teaching in the specific parts, and at the integrating seminars.

Professional development, equivalent to 2 credits, is taught continuously during the whole course, as well as in one of the integrating seminars. Ethical issues and attitudes are discussed.

Scientific development, equivalent to 0.5 credits, is included in all parts, based on the integrating assignments. Each part in the course contains teaching with a focus on evidence-based medicine.

Internal medicine 1, 6.0 hp

Grading scale: GU

Description of the part can be found above.

Internal medicine 2, 6.0 hp

Grading scale: GU

Description of the part can be found above.

Clinical rotation 1, 4.5 hp

Grading scale: GU

Description of the part can be found above.

Clinical rotation 2, 4.5 hp

Grading scale: GU

Description of the part can be found above.

Clinical rotation 3, 4.5 hp

Grading scale: GU

Description of the part can be found above.

Clinical rotation 4, 4.5 hp

Grading scale: GU

Description of the part can be found above.

Professionell development 1, 1.0 hp

Grading scale: GU

Description of the part can be found above.

Professionell development 2, 0.5 hp

Grading scale: GU

Description of the part can be found above.

Scientific development, 0.5 hp

Grading scale: GU

Description of the part can be found above.

Internal medicine 3, 1.5 hp

Grading scale: GU

Description of the part can be found above.

Infectious diseases, 5.0 hp

Grading scale: GU

Description of the part can be found above.

Dermato-venereology, 4.0 hp

Grading scale: GU

Description of the part can be found above.

Geriatric medicine, 3.0 hp

Grading scale: GU

Description of the part can be found above.

Clinical pharmacology, 1.5 hp

Grading scale: GU

Description of the part can be found above.

Practical exam, 1.0 hp

Grading scale: GU

Description of the part can be found above.

Teaching methods

The course consists of both theory-based teaching and placement in both open and closed care on hospital both as in primary care.

The theory-based teaching with an emphasis on knowledge and understanding is based on the included parts and a speciality or subspeciality in order to provide the knowledge field 's speciality.

A part of the teaching consists of the clinical core of integrating assignments which aim to integrate knowledge partly from the different specialities, partly from previous courses.

The teaching is given largely in the form of integrating seminars, usually in small groups with assignment, case or team based methodology. A small part of the mainly theory-based teaching, for example lectures, individual work in the form of literature or field studies, presentation of own learning portfolio and individual teaching, takes place as group tuition in medium large or large groups. The clinical placement with an emphasis on skills takes place in close relation to patients.

Participation in the daily work of the care unit is included, as well as patient-centered, systematic and student-centered teaching, e. g. clinical placing, bedside rounds, home visits, patient demonstrations, group tuition, teacher-supervised practical exercises and personal feedback on ward, in the emergency department and in planned clinic at hospitals and health care centres. Scheduled participation in emergency care services on nights and weekends are also included. Patients or patient cases with problems related to the integrating assignments, are discussed.

The teaching methods are student-activating, for example integrating seminars with case, assignment or team based methodology and case and supercase methodology. Lectures are also included, and so are patient-centered teaching, demonstrations and placement and proficiency training under supervision, independent studies and web-based parts.

The pedagogical design and the detailed contents may vary between the different teaching hospitals.

Examination

Compulsory participation

All seminars and demonstrations and all proficiency training and placement including 24-hour duty have compulsory attendance. Other compulsory teaching is explicitly stated in the course schedule The course director decides how the student should compensate absence and failed achievements.

Requirements for passed course: For a Pass grade in the course, attendance at course start rollcall is required, participation in compulsory teaching with the grade Pass and with achieved course objectives, the grade Pass on independent oral, written and practical assignments, the grade Pass on practical examination and passed learning portfolio.

In the learning portfolio is included: Six theoretical examinations, 12 weekly feedback-reports from

placements, participation in compulsory parts within professional development (reflection groups and workshops), participation in compulsory parts within scientific development, participation in self evaluation and personal development dialogues.

Clinical placements can be repeated once.

The theoretical examinations can be repeated once during an on-going course. The practical examinations can be repeated the follow semester.

Theoretical examinations and practical examination can be redone at at most 5 occasions.

Grades are passed and failed, respectively.

Other directives

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

Examination

The examiner may with immediate effect interrupt a student's clinical rotation (VFU), or the equivalent, if the student demonstrates such serious deficiencies in knowledge, skills or attitudes that patient safety or patient confidence in healthcare is at risk. When clinical rotation is interrupted according to this, it implies that the student fails in the current part, and that one clinical rotation opportunity is used up.

In such cases, an individual action plan should be set up for required activities and examinations, before the student is given a possibility for a new clinical rotation in the course.

Eligibility

Student that has failed on placement (VFU)/equivalent as a consequence of that the student has shown so serious deficiencies in knowledge, skills or attitudes that the patient security or the patients' trust for the healthcare have been jeopardised is qualified to new placement-tillfälle first when the individual action plan have been completed.

Literature and other teaching aids

Behandlingsprogram för Stockholms Läns Landsting: Akut Internmedicin.

Stockholms läns landsting,

Internmedicin

Dahlström, Ulf; Kechagias, Stergios; Stenke, Leif

5., [omarb.] uppl. : Stockholm : Liber, 2011 - 1022 s.

ISBN:978-91-47-90863-9 LIBRIS-ID:12316233

[Library search](#)

Läkemedelsboken.

Uppsala : Läkemedelsverket, [2013] - 1275 s.

ISBN:9789163741500 LIBRIS-ID:14863242

[Library search](#)

Rorsmans Dermatologi, venereologi Dermatologi, venereologi

Vahlquist, Anders

8., [rev. och uppdaterade] uppl. : Lund : Studentlitteratur, 2012 - 369 s.

ISBN:978-91-44-08150-2 LIBRIS-ID:13524022

[Library search](#)

Weller, Richard; Hunter, J. A. A.

Clinical dermatology

4. ed. : Malden, Mass. : Blackwell Pub., 2007 - 426 p.

ISBN:978-1-4051-4663-0 (alk. paper) LIBRIS-ID:10737072

[Library search](#)

Infektionsmedicin epidemiologi, klinik, terapi

6. uppl. : Sävje förlag, 2014 - 383 s.

ISBN:9789197810869 (inb.) LIBRIS-ID:16767886

[Library search](#)

Dehlin, Ove; Rundgren, Åke

Geriatrisk

2., [omarb. och utök.] uppl. : Lund : Studentlitteratur, 2007 - 415 s.

ISBN:978-91-44-03849-0 (inb.) LIBRIS-ID:10454111

URL: <http://www.studentlitteratur.se/omslagsbild/artnr/6072-02/height/320/width/320/bild.jpg>

[Library search](#)

Kurspärmen

Harrison's online Harrison's principles of internal medicine.

Harrison, Tinsley Randolph; Braunwald, Eugene

New York : McGraw-Hill, cop. 1998-

LIBRIS-ID:3362110

URL: [Länk](#)

Medicin

Lindgren, Stefan

1. uppl. : Lund : Studentlitteratur, 2012 - 684 s.

ISBN:978-91-44-05659-3 (inb.) LIBRIS-ID:12400577

[Library search](#)

Oxford textbook of medicine

Warrell, David A.; Cox, Timothy M.; Firth, John D.

5. ed. : Oxford : Oxford University Press, 2010 - 3 vol.

ISBN:978-0-19-920485-4 (set) LIBRIS-ID:12131430

[Library search](#)

Cecil, Russell L.

Goldman's Cecil medicine

Goldman, Lee; Schafer, Andrew I.

24th ed. : Philadelphia : Elsevier/Saunders/, c2012. - xlii, 2569, 86 p.

ISBN:9781437716047 (single v. : alk. paper) LIBRIS-ID:13507388

[Library search](#)

Wahlgren, Carl-Fredrik

Terapikompendium i dermatologi och venerologi

Tredje omarbetade upplagan : Stockholm : Prodeve, 2008

ISBN:9789163318573

[Library search](#)

Kognitiv medicin

Wahlund, Lars-Olof; Nilsson, Christer; Wallin, Anders

1. uppl. : Stockholm : Norstedt, 2011 - 448 s.

ISBN:978-91-1-302322-9 (inb.) LIBRIS-ID:12033738

[Library search](#)

Professionell utveckling inom läkaryrket

Andersson, Sven-Olof

1. uppl. : Stockholm : Liber, 2012 - 306 s.

ISBN:978-91-47-09967-2 LIBRIS-ID:12542995

[Library search](#)