



**Karolinska  
Institutet**

Course syllabus for

## **Disease and Illness 2, 25.5 credits**

Den sjuka människan 2, 25.5 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:

Autumn2011 , Spring2014 , Autumn2015 , Autumn2016 , Spring2018 , Autumn2019 , Spring2020 , Autumn2020 , Autumn2022

Course code	2LK069
Course name	Disease and Illness 2
Credits	25.5 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 Sciences, Danderyd Hospital
Participating institutions	<ul style="list-style-type: none"><li>• Department of Microbiology, Tumor and Cell Biology</li><li>• Department of Physiology and Pharmacology</li><li>• Department of Neurobiology, Care Sciences and Society</li><li>• Department of Laboratory Medicine</li><li>• Department of Medicine, Huddinge</li><li>• Department of Clinical Science, Intervention and Technology</li><li>• Department of Molecular Medicine and Surgery</li><li>• Department of Medicine, Solna</li><li>• Department of Clinical Science and Education, Södersjukhuset</li></ul>
Decided by	Programnämnd 2
Decision date	2011-04-26
Revised by	Programme Committee 2
Last revision	2015-04-28
Course syllabus valid from	Autumn 2015

## **Specific entry requirements**

All credits from semesters 1 and 2.

## **Objectives**

The expected learning outcomes of the course build further on objectives achieved during the five basic courses "Introduction", "The Healthy Human 1, 2 and 3" and "Disease and Illness 1". The expected learning outcomes are limited to basic principles in the subject areas microbiology, immunology, pharmacology, the medical laboratory specialities, diagnostic imaging and the, for all clinical specialities basic, clinical skills in the physician-patient meeting that is consultation, physical examination, assessment, hypothesis generation, preliminary diagnosis and documentation..

The knowledge is structured according to the SOLO taxonomy: S1) simple (e.g. know, identify), S2) compound (e.g. account for, describe), S3) related (e.g. analyse, relate), and S4) extended (e.g. theorise, analyse). The skills outcomes 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 human system, in balance

The student should be able to:

- describe the composition of the normal microflora and explain its importance for health (S3)
- present the principles of absorption, distribution, metabolism and elimination of drugs and reasons for interindividual variation of drug effects (S3).

The human system, in imbalance

The student should:

- be able to explain the structure and function (S3) of medically important microorganisms.
- be able to explain the basic mechanisms underlying common, and/or important, diseases, caused by microorganisms (S3).
- be able to explain the immune system's specific and unspecific defences against infections (S3).
- be able to explain the principles of and the risks involved in prevention and treatment of infectious diseases (S3).
- be able to describe hygienic principles from a microbiological perspective (S2).
- be able to describe clinical investigation of common diseases and acute diseases (S2).
- be familiar with investigation of less common diseases (S1) at a general level.
- be able to describe the most common clinical, chemical, microbiological, immunological, pathological, physiological and diagnostic imaging examinations, how these are used clinically and important sources of error and risks associated with these studies (S3).
- have knowledge of mechanisms in autoimmune and allergy diseases and be able to describe the most common tests in the investigation of these diseases, blood group determination and red blood cell antibody identification (S3).
- be able to explain basic principles of drug treatment and be familiar with the most important modes of action, the indications, the interactions and adverse drug reactions for pharmaceutical substances (S3).

Humans in interaction

The student should:

- be able to describe how health and illness can vary depending on socio-cultural background, gender and individual factors (S2).
- be able to describe certain laws and statutes, for example professional secrecy (S2).
- have knowledge of basic communication theories and group dynamic models (S2).

#### Skills

The human system, in direct contact

The student should be able to:

- show how, in an ethical and professional way, a medical history is taken and how, in an equivalent way, physical status is determined (M2).

- carry out, interpret and inform about common diagnostic studies and also be able to assess risks in these studies (M3).
- demonstrate professional treatment and generally be able to explain, advise and instruct patients as well as family (M2-3).
- explain the special risks with the usage of antibiotics and antiviral means (M3).

The human system, in indirect contact

The student should

- be able to show how the results of medical history, status and common laboratory investigations are interpreted and how a preliminary diagnosis is made (M2).
- be able to assess the need for the expert knowledge of other occupational groups (M2).
- be able to explain how to assess risks in common examinations and in drug treatment (M2-3).
- be able to show how, in a medical records system, the patient's medical history as well as completed examinations are documented and summarised (M2-3).

The system of man, in interplay

The student should:

- show the ability to work together in a group (M2) and know how one works as leader in a group (M2).
- know to how work is carried out in a clinical laboratory (M1).
- be able to show how medical information is communicated to patients, relatives and colleagues (M2-3).

Attitude

Knowledge and attitude

The student should:

- be able to explain the importance of different measurement variables for scientific evidence (S3).
- be able to explain basic ethical principles (S3).
- be able to explain his/her own values and attitudes, and how these affect individual behaviour in contact with patients, family, teachers and health care personnel (S3).
- be aware of issues concerning equal opportunities and equal treatment and also be aware of his/her own values and attitudes and how these influence behaviour (S2-3).

Behaviour and assessment skills

The student should

- be able to demonstrate a critical and scientific attitude in the interpretation and assessment of different measurable variables (M3).
- be able to identify, discuss and solve ethical problems and also be able to reflect on the consequences of his/her own and others' action in clinical situations (M2-3).
- be able to show how one searches for electronic documents in databases (M2-3).
- be able to demonstrate how a learning portfolio is managed (M3).

## Content

Integration

The course is given in collaboration between the basic scientific, foundation subjects microbiology, immunology, pharmacology and basic clinical diagnostics as well as the medical specialities clinical microbiology, clinical immunology, transfusion medicine, clinical chemistry, clinical physiology, diagnostic radiology and family medicine. The teaching is also coordinated both with previous and following courses.

Modules, subjects and clinical specialities

The course consists of two parts partly based on the function systems of the body, as described below. Part two implies also that the student practises taking basic medical histories and determining physical status combined with integrated teaching on the function systems of the body

Part 1, Causes of infection - infection defense and drugs (11 credits)

(Medical Microbiology, immunology and basic pharmacology)

Part 2, Medical diagnostics (14.5 credits)

(Medical Diagnostics)

The structure of the course

Part 1

The part is mainly based on student-activated teaching such as group tuition, integrated seminars and laboratory sessions and also lectures. The section antibiotic-antiviral agents is given as an integrated block in a collaboration between teachers from the subject areas microbiology and pharmacology.

Module 2:

Medical diagnostics

The part starts or ends with a cohesive and integrated block where clinical microbiology and clinical immunology/transfusion medicine is taught.

Overview of each function system starts with the student being introduced to a patient case with an underlying disturbance and symptoms belonging to the current function system. With this case as a starting point, both underlying disorders in structure and function, and possibilities to counteract these disorders, are clarified in an integrated way. Further it is demonstrated how, on the basis of a systematic medical history and physical examination, a reasonable hypothesis (preliminary diagnosis) can be formulated, and the laboratory, image and function examinations which may confirm or reject the hypothesis in an effective way can be determined. Each review of a function system is completed with a follow-up seminar. The learning comprises the patient meeting as a whole, that is, treatment, communication, medical history and physical status and diagnostics, and basic interpretation and assessment of results of clinical investigations.

Integrated knowledge fields

Professional development

Professional development is carried out in parallel with learning during the whole course, but has its emphasis during this part "basic clinical consultation and study". Specific intended learning outcomes are, above all, consultation skills.

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In the arena of the primary care, how one finds out the modes of action of pharmaceuticals, the interactions and adverse drug reactions that occur in practically clinical work is trained. Furthermore, practical sampling is trained (e.g. throat swab and bacterial wound culture), and sources of errors and interpretation are discussed. Practical training in and assessment of status-taking. Training and feedback in the patient's part of the consultation with video.

Scientific development

Scientific development is included in all modules based on function systems. Specific emphasis will be placed on assessment of measure variables. These variables' importance for evidence-based medicine will be clarified.

## **Medical microbiology, immunology and basic pharmacology, 11.0 hp**

Grading scale: GU

## **Medical diagnostics, 14.5 hp**

Grading scale: GU

## Teaching methods

The student is activated by, among other things, patient meetings and laboratory sessions. Under the largest part of the function-based sections the teaching based on case studies takes place, while the integrating assignments in respective function systems are taught by means of seminars, laboratory sessions, group tuition, patient meetings, lectures and literature studies. IT-based web-cases supplement the teaching (Virtual patients).

During parts of the course, the teaching is located at hospitals and care centres. The student will handle patients with problems related to the integrating assignments. Clinical problem-solving, medical history taking and specific status training are practised, individually, or in groups, under supervision, followed by discussions, including basic science and laboratory diagnostics. In teaching about consultation technique either supervisors are present or video technique are used. In both cases, structured feedback is given.

## Examination

Part 1 is examined through written examination of the level descriptors and of the comprehension goals.

Part 2 is examined through assessment and feedback from the supervisor and with a written examination. The examination focuses on skills, understanding and attitudes in clinical consultation and examination according to a standardised models. For the approval of this part, at least three passed patient-physician meetings are required concerning both skills, understanding as attitude and also a documented ability to work in groups.

Compulsory attendance applies to the integrating seminars, laboratory sessions and group seminars that include patient demonstrations or examination techniques.

Limitation of examination or practical training opportunities

For the written examination, there are, all in all, 6 examinations and for placement modules, 2 examinations.

## 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 evaluations are carried out by means of questionnaire.

### Examination

The examiner may, with immediate effect, interrupt a student's clinical placement (or equivalent) if the student demonstrates such serious deficiencies in knowledge, skills or attitude that patient safety or patient confidence in healthcare is at risk. If a clinical placement is interrupted in this way the student is deemed to have failed that element and to have used up one clinical placement opportunity.

In such cases, an individual action plan should be set up stating which activities and tests are required before the student is qualified for a new clinical placement on the course.

### Eligibility

A student failing due to shortcoming 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.

## Literature and other teaching aids

*Abbas, Abul K.; Lichtman, Andrew H.*

**Basic immunology : functions and disorders of the immune system**

2. ed., updated ed. 2006-2007 : Philadelphia, Pa. : Elsevier/Saunders, 2006 - ix, 324 s.

ISBN:1-4160-2974-5 LIBRIS-ID:10097070

[Library search](#)

*Murray, Patrick R.; Rosenthal, Kenneth S.0 319233; Pfaller, Michael A.*

**Medical microbiology**

5. ed. : St. Louis : Mosby, cop. 2005 - x, 963 s.

ISBN:0-323-03303-2 LIBRIS-ID:9878822

[Library search](#)

*Rang, Humphrey P.; Dale, M. Maureen*

**Rang & Dale's Pharmacology**

6. ed. : Edinburgh : Churchill Livingstone, 2007 - xiii, 829 s.

ISBN:978-0-443-06911-6 (pbk.) LIBRIS-ID:10332594

[Library search](#)

*Goodman, Louis Sanford; Gilman, Alfred*

**Goodman & Gilman's the pharmacological basis of therapeutics**

*Brunton, Laurence L.*

11. ed. : New York : McGraw-Hill, cop. 2006 - 2021 s.

ISBN:0-07-142280-3 LIBRIS-ID:9976126

[Library search](#)

**Lippincott's illustrated reviews: Pharmacology**

*Mycek, Mary Julia*

2. rev. ed. : Philadelphia : Lippincott Williams & Wilkins, cop. 2000 - 514 s.

ISBN:0-7817-2413-9 LIBRIS-ID:8307491

[Library search](#)

**Läkemedelsboken 2009**

Stockholm : Apoteket AB, 2009 - 1236 s.

ISBN:91-85574-59-7 LIBRIS-ID:11442574

[Library search](#)

**FASS**

senaste uppl. : Läkemedelsinformation AB,

URL: [www.fass.se](http://www.fass.se)

*Lyons, Lena; Forss, Kalle*

**Kliniska färdigheter : informationsutbytet mellan patient och läkare**

*Lindgren, Stefan; Aspegren, Knut*

2., [rev.] uppl. : Lund : Studentlitteratur, 2004 - 237 s.

ISBN:91-44-02375-8 LIBRIS-ID:9464845

[Library search](#)

**Internmedicin**

*Berglund, Göran; Abrahamsson, Hasse; Wilhelmsson, Jan*

4., [rev.] uppl. /b under redaktion av Göran Berglund ... : Stockholm : Liber, 2006 - 862 s.

ISBN:91-47-05296-1 LIBRIS-ID:10254966

[Library search](#)

## **Medicin**

*Lindgren, Stefan*

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

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

[Library search](#)

## **Laurells Klinisk kemi i praktisk medicin**

*Nilsson-Ehle, Peter; Ganrot, Per Olof; Laurell, Carl-Bertil*

8., [rev. och utök.] uppl. /b Peter Nilsson-Ehle (red.) ; redaktionskommitté: Per Olof Ganrot ... : Lund : Studentlitteratur, 2003 - 723 s.

ISBN:91-44-00766-3 (inb.) LIBRIS-ID:9153885

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