



**Karolinska  
Institutet**

Course syllabus for

## **Inflammation in clinical medicine, 7.5 credits**

Inflammation inom klinisk medicin, 7.5 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:

Autumn2009 , Spring2010

Course code	2LK011
Course name	Inflammation in clinical medicine
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Medicine
Level	AV - Second cycle
Grading scale	Pass, Fail
Department	Department of Medicine, Huddinge
Participating institutions	<ul style="list-style-type: none"><li>• Department of Medical Biochemistry and Biophysics</li><li>• Department of Laboratory Medicine</li></ul>
Decided by	Programnämnden för läkarprogrammet
Decision date	2009-05-15
Revised by	Programme committee for study programme in medicine
Last revision	2024-06-18
Course syllabus valid from	Spring 2010

## **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

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## **Objectives**

The general aims are limited to what is common and important in clinical aspects of inflammation in diseases in the acute internal medicine areas of activity cardiology, gastroenterology, hematology, traumatology, nephrology, hepatology, emergency medicine, intensive care medicine and infection medicine, and relate to the general aims of the entire Study Programme in Medicine.

The knowledge is tiered according to the SOLO taxonomy and the skills according to Miller's pyramid.

## Knowledge and understanding

### In balance

Know and understand (S3) clinically and practically important general aspects on the immune defence and how it contributes to the homeostasis in the healthy individual. Describe (S2) central functions of phagocytes, lymphocytes and vascular endothelium.

### In imbalance

Understand (S3) the 4 cardinal symptoms - flushing, pain, swelling and reduced function and their pathophysiology, aetiology and clinical antecedents of the acute inflammation. Understand (S3) abnormal physical structure and function, symptoms, theories about disease mechanisms, prognosis, principles of investigation and treatment, and, where applicable, importance of rehabilitation in common, acute and/or serious inflammatory diseases in the areas of activity, and have such knowledge (S2) of less common diseases. Understand and be able to apply principles of (S3) pharmacological treatment of inflammation. Be familiar with (S2) choice and evaluation of alleviative and disease-modifying drug treatment and mechanisms for and follow-up of effect and the most important adverse drug reactions.

### In interplay

Know (S3) work distribution between different nursing levels in the handling of inflammatory diseases or symptoms with main focus on acute inflammatory conditions. Understand (S2) the importance of life-long learning and the organisation of the medical research.

## Skills

### Direct contact

(M4) take medical history, drug history, and carry out a systematic physical examination regarding inflammatory diseases and symptoms, and particularly the acute inflammation. Understand principles of (M2) selection, performance and information to patients about common examinations in the investigation of inflammation. Be able to (M3) initially process and understand principles of treatment of acute inflammatory diseases particularly acute arthritis, systemic inflammation response syndrome, acute episodes of inflammatory gastrointestinal diseases, liver inflammation and acute episodes of airway inflammation and inflammation in infectious diseases, other inflammatory diseases, neutropenia, and be able to account for (M2) the importance of the inflammation for common cardiovascular, endocrine and nephrological diseases. Understand (M2) general principles of treatment of less common but, potentially, dangerous diseases. Master (M4) professional treatment, work patient-focused, be able to (M3) reply to questions, give explanation, advice, instructions, prescriptions and relay difficult information to patients and families, and use effective preventive and behaviour-changing strategies in inflammation diseases (professional development). Be able to (M3) process and interpret the results of medical history and common examinations, diagnose, discuss differential diagnoses, make clinical decisions, and identify intensive care-demanding patients, (M3) review and evaluate clinical issues critically based on evidence-based medicine and formulate aims and action plans for care.

### In interplay

Be able to (M3) interact with colleagues, other nursing instances and staff for effective treatment of inflammation. Understand the principles of evidence-based medicine and (M3) apply common administrative routines. Be able to handle (M3) the weaknesses and limitations of medical and personal knowledge, identify and evaluate risks for the patient, himself/herself and others.

### Behaviour

Demonstrate (M3) a critical and scientific approach, identify, discuss and explain ethical problems and consequences of his/her own and others' actions in clinical situations, and in the final stage of life.

## Scientific development

During the course, the students meet practical examples of evidence-based medicine (EBM) and health technical analysis (HTA) and should (S2) be able to explain the principles of rational drug choice. The students will also face the conditions of clinical research and should be able to (S2) explain the difference and importance of randomised scientific studies in comparison with non-randomised clinical studies .

## Professional development

The students should understand and be able to explain the importance of an empathetic attitude to patients in acute inflammatory conditions (S2).

## Content

The course is given in collaboration between basic and branch specialities where inflammation and inflammatory diseases are common and/or important, and in the clinical specialities which correspond to the core course clinical medicine (theme 3). Furthermore, basic scientific aspects are included relevant to acute inflammation equivalent to 10% of the theory of the course. Coordination with teaching of equivalent function systems, with previous and following courses, also takes place.

The course consists of the following 2 parts: Practical placement and theoretical placement including a supercase and a written examination. The course division in credit points: The course gives 7.5 HE credits, with the following distribution: Practical placement 4.5 higher education credits, and theoretical placement 3 higher education credits.

### Clinical core

The course consists of 5 weeks with placement parts which have either theoretical specialisation (VFU-T) or practical specialisation (VFU-P), the later takes place in wards, emergency units and clinics but can also be located to training care centres in primary care. The course is completed with a study period and a written final examination.

### Detailed integrating assignments:

Senses and the nervous system: Persistent and chronic pain.

Circulation: Swelling in extremity. Blood picture and immune systems: Anaemia, fever. Digestion:

Jaundice. Motion: Swelling/pain in joint.

## Teaching methods

The course consists of both theory-based (VFU-T) and clinical (VFU-P) teaching in open and in-patient care in hospitals and, where applicable, primary care. The teaching is provided according to the supercase model. In short, the students, individually or in groups, study a real patient case which is followed from an inflammation aspect from the beginning to the end of the course, when presentation takes place in case seminars with other students and course administration. During the course, the students are offered a menu of lectures and seminars, time for independent studies and database search in e. g. PubMed during the theoretical placement. During practical placement, the teaching is given mainly as placement in the wards or clinics of the hospital and provides practical training in diagnosis, investigation and treatment of inflammation. During both theoretical placement and practical placement, teaching takes place in the form of integrating seminars with case methodology where the integrating assignments as well as other cases are covered. The knowledge fields professional and scientific development are treated continuously. The course contains placement in medical emergency units (internal medicine and infection medicine).

## Examination

### Compulsory participation

All seminars, demonstrations, proficiency training and placement including on-call service is compulsory.

Examination takes place through approved participation in compulsory teaching with achieved course objectives, passed individual oral/written and/or practical assignments, approved learning portfolio.

Approved clinical teaching is required for the right to participate in the examination.

The number of examination and practical training sessions follows the local guidelines of Karolinska Institutet, which means that the number of examinations is limited to 6, while placement parts may only be repeated only once.

The examination consists of 2 parts:

1. Presentation of own supercase where the students lead in groups with identifiable personal actions case seminar for the course. For a Pass grade, the student's individual actions must be identified and approved as well as treatment of issues, problem identification and problem solving and correspond to knowledge which corresponds to the aims of the course.
2. Written examination that is based on the learning outcomes and the educational contents of the course.

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

A student failing due to shortcoming in knowledge skills or attitudes, thus jeopardizing patient security and/or trust in medical care, could be assigned for a new clinical rotation only after having completed the individual plan.

## Transitional provisions

If the course is closed-down or undergoes major changes, at least two additional examinations (excluding regular examinations) in the earlier contents are provided during a period of a year from the date of the change.

## Other directives

The course connects to and enhances core knowledge within the Study Programme in Medicine.

The course can during an interim period partly be given at the same time as an elective course with similar specialisation.

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

The course may not be included in higher education qualification at the same time with within or except the country completed advanced study course, whose contents completely or in essential parts corresponds to the course content. If you are uncertain - contact the study guidance.

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The knowledge is tiered 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 are structured according to Miller's pyramid:

- M1) know,
- M2) know how to carry out

M3) be able to demonstrate, and  
 M4) be able to carry out in a professional manner.

## Literature and other teaching aids

### AccessMedicine

*McGraw-Hill*

### Behandlingsprogram för Stockholms Läns Landsting: Akut Internmedicin.

Stockholms läns landsting,

### Infektionsmedicin : epidemiologi, klinik, terapi

*Iwarson, Sten; Norrby, Ragnar*

3., [omarb. och uppdaterade] uppl. : Sävedalen : Säve, 2004 - 448 s., [8] pl.-bl. i färg  
 ISBN:91-972689-7-6 (korr.) (inb.) LIBRIS-ID:9322097

[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](#)

### Läkemedelsboken, n 2007

Stockholm : Apoteket AB, 2007 - 1260 s.  
 ISBN:91-85574-57-0 LIBRIS-ID:10399282

[Library search](#)

*Norrby, Ragnar; Cars, Otto*

### Antibiotika- och kemoterapi : behandling av infektioner i öppen vård

8., [rev.] uppl. : Stockholm : Liber, 2003 - 184 s.  
 ISBN:91-47-05179-5 (korr.) LIBRIS-ID:9196602

[Library search](#)

### Praktisk geriatrik

*Wahlund, Lars-Olof*

1. uppl. : Stockholm : Liber, 2006 - 220 s.  
 ISBN:91-47-05302-X LIBRIS-ID:10120876  
 URL: <http://www2.liber.se/bilder/omslag/100/4705302o>

[Library search](#)

### PubMed