



**Karolinska  
Institutet**

Course syllabus for

# **Public Health and Environmental Medicine, 12 credits**

Hälsa i samhälle och miljö, 12 hp

This course syllabus is valid from autumn 2013.

Please note that the course syllabus is available in the following versions:

Autumn2013 , Spring2016 , Spring2019 , Autumn2019 , Spring2020 , Autumn2020 , Autumn2021 , Spring2025

Course code	2LK100
Course name	Public Health and Environmental Medicine
Credits	12 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Medicine
Level	AV - Second cycle
Grading scale	Pass, Fail
Department	Institute of Environmental Medicine
Participating institutions	<ul style="list-style-type: none"><li>• Department of Clinical Sciences, Danderyd Hospital</li><li>• Department of Neurobiology, Care Sciences and Society</li><li>• Department of Biosciences and Nutrition</li><li>• Department of Medicine, Solna</li><li>• Department of Oncology-Pathology</li><li>• Department of Global Public Health</li><li>• Department of Clinical Science and Education, Södersjukhuset</li></ul>
Decided by	Programnämnd 2
Decision date	2013-03-20
Course syllabus valid from	Autumn 2013

## **Specific entry requirements**

All credit points from T1-T9. 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.

## **Objectives**

The learning outcomes aim to enable the future physician to apply earlier acquired and new knowledge and experiences in an environmental and social context as well as in care of patients with common

symptoms and diseases.

The student should:

- understand how health and disease are influenced by work and environment as well as socioeconomic factors.
- be able to understand the role of the physician in teamwork in public health care, prevention and rehabilitation.
- be able to evaluate information and make risk assessments in a scientific way.
- be aware of his/her attitude to different groups of patients and to different risk groups, as well as to different cultures.
- develop his/her ability to establish a good patient-physician relationship.
- be able to relate to patients' disparate experiences of the same health problems and be able to reflect on his/her own feelings and readiness to act in different situations and how these can influence the treatment and the care of patients.
- be able to manage patients with general health problems and symptoms.

The aims relate to the general learning outcomes of the whole Study Programme in Medicine. Aims concerning knowledge and understanding are structured according to the SOLO taxonomy: S1) simple (e.g. know, identify), S2) compound (e.g. account for, describe), S3) related (e.g. analyze, relate to), and S4) extended (e.g. theorize, analyze). Practical skills outcomes are tiered 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.

#### Medical knowledge and understanding

The system of man, in balance

The student should be able to:

- reflect on the impact of health promoting factors and prevention of disease (S4)

The system of man, in imbalance

The student should be able to:

- manage patients with varying symptom and diseases (S4, M4).
- explain and reflect on the consequences of symptoms and diseases for the individual (S4).
- reflect on how susceptibility of the individual to extrinsic factors can be related to age, sex, and vulnerable groups (S4).
- explain common occupational and environmental risk factors and their impact on development of disease (S3).
- explain the impact of psychosocial strain and the psychosocial work environment on health and disease (S3).
- explain the initial treatment on the incident site and the basis for triage at large accidents (S3).
- explain the basis for psychological and social support in disasters (S3).

#### Humans in interplay

Normal and abnormal social structure and function

The student should be able to:

- explain the impact of life style, social and psychosocial relations on occurrence of disease and how disease and complaints are perceived as well as the relation between disease and social consequences (S3).

#### Health care

The student should be able to:

- reflect on how the welfare system, the organization of health care and how it is financed may influence health in the population and health care utilization (S4).
- reflect on the common responsibility of the health care, the social insurance office, the employer and the employment office for people's return to the work after disease or injury and be able to identify factors that facilitate or hamper this return (S4).
- explain responsibilities, organisation and qualifications in the primary care and the occupational health services and their cooperation with other actors (S3).
- explain the importance of rehabilitation efforts from a community perspective (S3).

- explain the planning of the health care in case of major accidents and disasters in Sweden, as well as globally (S3).
- describe occupational and environmental legislation relevant to health care and the role of authorities and organisations (S2).

#### Roles, responsibilities, authorities and obligations

The student should be able to:

- reflect on obligations and responsibilities, for example to write medical certificates to patients, health care management, public authorities and other instances (S4).
- explain the fundamental values of health care and the individual's responsibility, as well as possibilities, to act in accordance with these fundamental values (S3).
- explain the role of different actors in quality and safety work in order to increase patient safety (S3).
- explain the role of different actors in pharmaceutical issues, both in health care and in society (S3).
- describe the importance of the patient insurance for the patient as well as for the health care (S3).
- describe laws and regulations that govern the physician's responsibility within health care (S2).
- describe the organisation during major accidents and disasters (S2).

#### Health economics

The student should be able to:

- explain how costs regarding health care are influenced by disease panorama, the organisation of society, health care and funding models (S3).
- describe the relationship between costs and benefits and effects within health care by health economics methods (S2).
- describe the impact of drugs, from a medical and economical point of view, on health care and the community (S2).

#### Epidemiology

The student should be able to:

- explain the design and possible errors in epidemiological studies in general and within the fields of primary care, occupational, environmental medicine and social medicine (S3).
- assess epidemiological data about social conditions, risk factors and disease in different populations or geographical areas, for example different municipalities (S3, M3)

#### Public health

The student should be able to:

- explain the specific social and medical problems and health care needs in vulnerable groups, for example homeless, mentally ill and different ethnic groups (S3).
- explain risk assessments and how risks are communicated to patients, actors within health care, working life and other target groups (S3).

#### Prevention

The student should be able to:

- explain principles of evidence-based prevention in the population and understand the conceptual difference between primary, secondary and tertiary prevention (S3).
- explain methods to prevent adverse influence of environmental factors (S3).

#### Environment

The student should be able to:

- explain basic concepts regarding risk assessment and methods to identify and estimate exposure for environmental factors that may cause adverse health effects (S3).
- describe risks for certain disasters and explain the effects on the population, e. g. mental reactions, and society (S3).

#### Teaching and learning

The student should be able to:

- reflect on the physician's role and possibilities to act in public health (S4).
- discuss the impact of safety awareness and systematic follow up of events/injuries in order to increase safety within health care and working life (S3).

#### Skills

The system of man, in direct contact

The student should be able to:

- manage consultations in primary care using a patient-centered communication technique (S3, M4).
- give the patient symptom related counselling as part of a preventive strategy (M4).
- take and interpret a history of basic environmental exposures and investigate and assess the most common work and environmentally associated complaints and diseases (M3).
- assess physical disability, prognosis, duration and work capacity and be able to draw up a rehabilitation plan in collaboration with the patient, the employer, the social insurance office and other actors in community (M3).
- explain and present rationale for measures (risk communication) to prevent exposure to risk factors for individuals as well as groups of people (S3, M3).
- prioritise and perform initial management at large injury outcome (M3).

The system of man, in indirect contact

The student should be able to:

- write certificates to the social insurance office and forensic certificates (M3).
- analyse the roles of specific environmental factors as sufficient or contributing causes for a given disease (S4, M3).
- identify both groups at risk and hazardous behaviour (S3, M3).

Humans in interplay

The student should be able to:

- assess and reflect over the interplay between individual, society, environment and health (S4).
- cooperate with other professions and have knowledge about their roles (S3).
- discuss health benefits and social costs in the context of health economics (S3).
- evaluate risks and benefits of shorter or longer sick leave for a patient (S4).
- identify ethical problems within preventing medicine (S4).
- understand the principles of motivational interviewing in counselling on life style and health (S3, M3).
- communicate risks, both orally and in writing, in a suitable way for a specific target group (patients, colleagues, public authorities etc) (S4, M3).

Attitude

Knowledge and attitudes

The student should be aware of and:

- understand the responsibility and authority of the physician within and outside the health care system and be familiar with the obligation to act accordingly (S4).
- understand and consider the differences in risk perception concerning exposures among individuals (S4).
- understand ethical issues in relation to risk assessments, prevention and rehabilitation (S4).
- identify and reflect on ethical dilemmas (S4).

Behaviour and assessment skills

The student should be able to:

- integrate a humanistic and scientific perspective as well as gender equality and diversity issues, and be aware of the impact of his/her own values (S3, M4).
- integrate environmental, social and cultural aspects in assessments and decision making (S3, M4).
- analyse his/her strong and weak sides in consultations in primary care, reflect on fields that need to be developed further and how this development is possible (S3, M4).

## Content

The topic-specific core of the course consists of both an individual - and a community perspective. The individual the patient's health problems is seen from a psychosocial and existential perspective but also in view of the population's health. Here, the occurrence of symptoms and diseases is included in the population and how health is influenced by social structure, healthcare structure, working environment, general environment, cultural and social relations. Subordinate themes are the welfare system and insurance medicine. The medical subject areas that mainly are concerned is family medicine, social -

and psychosocial medicine, occupational and environmental medicine and disaster medicine. Furthermore, parts of the rehabilitation medicine, the forensic medicine, the pharmacology and the health economics are included.

The core of the course is also constituted of professional and scientific development. Aims for professional development that is included in Health in society and environment concern, inter alia, the organisation, economics and risk communication of the health care, a advanced knowledge of the importance of a good patient-physician relationship and how a such be created and an ability to overall view on the patient a scientific and humanistic view is where united.

The course is characterised by an interdisciplinary specialisation. Here, an individual clinical part with the community perspective is integrated on a way that can not be arranged in an organ system or diagnosis group. Arbets- och miljörelaterad injuries and diseases and rehabilitation include also. Basic science, as epidemiology, molecular medicine and clinical pharmacology and clinical subjects as family medicine, be integrated natural during the course. The learning of the primary care takes place in clinical placement on a care centre where the student is trained in to problemdefiniera and process patients with common health problems, diagnoses and symptom presentations with patient-focused methodology. Professional skills is carried out in integrated form with a focus on inter alia the reactions in the meeting with disease and death of patients, the relatives and associates, how the physician can function optimum and be sustainable in a stressful profession world to lead and act in an interprofessional team . Other teaching include inter alia case-based group tuition, field studies and working place visit. Aspects that particularly consistently be observed in the course are risk assessment, risk communication, prevention, sustainable development, exposed groups and genus- och mångfaldsperspektiv.

A scientific approach characterises all course with practical application of knowledge and skills from scientific development. The expected learning outcomes emphasise the epidemiological methods, the risk evaluation and the assessment of the disciplinary foundation for environmental influence.

### Clinical nucleus

The clinical core of the course consists of below integrating assignments with specified learning outcomes. These assignments are treated, within family medicine, social medicine and clinical occupational and environmental medicine and from an interdisciplinary samhälls and populationsperspektiv.

In the primary care, the student should have preparedness to come in contact with all of the 107 integrating assignments. The other parts of the course include inter alia:

Mental: Depending/abuses, depression, fatigue syndromes, deteriorated intellect, inlärnings- och minnessvårighet and unconsciousness/coma, injured oneself alone/suicidal risk, stress -/crisis reaction, sleep disorder, tiredness, anxiety -/concern.

Senses and the nervous system: Head-ache, handling impairment, touch disorder, lukt- och smakstörning, long pain, dizziness.

Circulation: Chest pain, high blood pressure, low blood pressure, abnormal heart activity.

Hematopoiesis and immune defences: Paleness, fever.

Respiration: Dyspnea, blodhosta, cyanosis, cough nasal obstruction/rhinitis.

Digestion: Troubles in the mouth, abdominal pain, diarrhea.

Metabolism and endocrine system: Weight gain/overweight.

Urinary organs: Blood in urine.

Reproduction: Pregnancy, infertility/sexual dysfunction.

Movement: Asthenia/paralysis, dyskinesias/tremor, pain in neck/shoulder/back, swelling/pain in joint, trauma/injury.

Skin: Bränn-/köldskada, skin neoplasm/dicoloured skin, exanthemas/flushing, sow/wound.

Development, aging: Unexpected death.

## Examination

For a Pass grade in the course is required passed on all compulsory parts and approved examination. Study visit, practical exercises, group tuition, presentation of assignments and written examination are

compulsory.

For passed practical exercise and group tuition, active participation is required, included oral and/or written presentation of assignments. Here is included e.g. video recording of a general medicine consultation and a discussion with teachers around one of the 107 integrating assignments. Gender and diversity perspectives, risk communication and preventive measures will particularly be observed. Also the learning portfolio consisting of sent in assignments and reflections in PingPong include in the examination.

Compulsory part that is not passed is compensated according to the instructions of the course administration. Participation at equivalent part at a later occasion during the course or at the next course date can be required.

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 placement is interrupted on this way it implies that the student fails on current parts and that one clinical rotation opportunity is used up.

In such cases, an individual action plan should be established, where it appears which activities and examinations that are required before the student is given possibility for a new clinical rotation in the course. this course.

## Transitional provisions

For course that has ceased or reviewed larger changes be given at least two additional tests (excluding regular tests) on the earlier contents during a time of a year from the date the change take place.

## Other directives

Course evaluation is carried out according to guidelines that are established by the Board of education.

## Literature and other teaching aids

*Allebeck, Peter; Diderichsen, Finn; Theorell, Töres*

### **Socialmedicin och psykosocial medicin**

2., [omarb.] uppl. : Lund : Studentlitteratur, 1998 - 198 s.

ISBN:91-44-00612-8 LIBRIS-ID:8352666

[Library search](#)

### **Allmänmedicin : teori och praktik**

*Bentsen, Bent Guttorm; Almqvist, Inger; Hey, Mogens; Nilsson, Peter M.*

Lund : Studentlitteratur, 1994 - 225 s.

ISBN:91-44-37161-6 LIBRIS-ID:8353619

[Library search](#)

### **Arbetsjukdom - skadlig inverkan - samband med arbete : ett vetenskapligt underlag för försäkringsmedicinska bedömningar (sju skadeområden)**

*Westerholm, Peter*

2., utök. och rev. utg. : Stockholm : Arbetslivsinstitutet, 2002 - 274 s.

ISBN:91-7045-655-0 LIBRIS-ID:10087841

URL: [Fritt tillgänglig via Göteborgs universitet](#)

[Library search](#)

*Björgell, Per; Björgell, Astrid*

**Jourläkarboken**

4., [rev. och uppdaterade] uppl. : Lund : Studentlitteratur, 2002 - 404 s.

ISBN:91-44-01013-3 LIBRIS-ID:8564025

[Library search](#)

*Borg, Jörgen*

**Rehabiliteringsmedicin : [teori och praktik]**

Lund : Studentlitteratur, 2006 - 344 s.

ISBN:91-44-04507-7 (inb.) LIBRIS-ID:10242099

[Library search](#)

**Environmental medicine**

*Möller, Lennart*

Stockholm : Joint Industrial Safety Council (Arbetskyddsnämnden) :b Karolinska institutet, 2000 - 327 s.

ISBN:91-7522-634-0 (inb.) LIBRIS-ID:8374872

[Library search](#)

**Arbets- och miljömedicin**

*Edling, Christer*

3. uppl. : Lund : Studentlitteratur, 2010 - 391 s.

ISBN:978-91-44-05399-8 LIBRIS-ID:11738087

[Library search](#)

*Lundgren, C.; Molander, C.*

**Temaarbete i medicinsk rehabilitering**

Liber, 2008

**Professionell Utveckling inom läkaryrket**

*Anderson, Sven-Olof; Björkegren, Karin; Foldevi, Mats; Lindgren, Stefan; Rödger, Stig; Seeberger, Astrid; Troein Töllborn, Margareta; Wahlqvist, Mats*

Liber, 2012