



*Course syllabus*

# E-hälsa E-health

**ETIF20, 5 credits, G2 (First Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED BME

**Date of Decision:** 2023-04-13

## General Information

**Main field:** Technology.

**Compulsory for:** BME3

**Language of instruction:** The course will be given in Swedish

## Aim

E-health can be defined as healthcare and promotion of health using information and communication technology (ICT). The objective of the course is to give the students insights into the field of e-health and how the areas has developed during recent years. Another objective of the course is to teach the students how to analyze and develop future concepts in the field of e-health based on available ICT and the course therefore introduces the student to a number of areas which are essential to the development of novel products and services in this field.

## Learning outcomes

*Knowledge and understanding*

For a passing grade the student must

- Know how e-health is used for healthcare in Sweden and internationally
- Know the important technological areas which are involved in the field of e-health
- Know and be able to respect and use aspects that affects the interaction between technology and the user when applying e-health technology.

### *Competences and skills*

For a passing grade the student must

- Be able to identify areas where e-health is applicable
- Be able to identify problem areas in e-health
- Be able to describe how e-health problems can be divided into many smaller problems using different technologies.
- Be able to apply existing theories in e-health.
- Show ability to find innovation solutions based on the formulated problems.

### *Judgement and approach*

For a passing grade the student must

- Be able to identify and evaluate different market players needs when forming and applying new technologies in the field of e-health.
- Be able to integrate different technologies into new applications of e-health
- Be able to understand literature in the e-health field
- Be able to communicate how different aspects in an application motivates the need for different technologies.

## Contents

The course is focused on how e-health can be used for healthcare and for promotion of health and how progress in information and communication technology makes this possible. The course shows how e-health can be used for: promotion of health and preventive means, analysis and diagnostics at symptoms or at high risk for illness, or treatment when a diagnosis is available. It will be discussed how e-health can simplify and/or improve the communication between different actors in the healthcare system and how different technologies can be used to speed up all flows of information and make diagnostics/expertise and treatment available for as many as possible. Theories and guidelines from cognition research and interaction design is presented in the course as an important aspect when developing e-health solutions. The course investigates the perspectives of both the patient and the healthcare provider.

## Examination details

**Grading scale:** TH - (U,3,4,5) - (Fail, Three, Four, Five)

**Assessment:** The examination is based on an exam in the end of the course and on activity in groupwise project work. The degree on the course is based on the exam but requires that the groupwise project work is finalized.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

## Admission

**Assumed prior knowledge:** EITA01 Introduction to biomedical engineering and EEMA01 Biomedical design

**The number of participants is limited to:** No

## Reading list

- Jeff Johnsson: Designing with the mind in mind, Simple Guide to Understanding User Interface Design Rules. 2010, ISBN: 10: 012375030, ISBN: 13: 9780123750303.
- Bernard Fong, A.C.M. Fong, C.K. Li: Telemedicine technologies, Information technologies in medicine and telehealth. Wiley, 2020, ISBN: 9780470745694.

## Contact and other information

**Course coordinator:** Martin Stridh, [martin.stridh@eit.lth.se](mailto:martin.stridh@eit.lth.se)