Course syllabus for

Computer applications in health care and biomedicine, 10 credits

Informationssystem i hälso- och sjukvården, 10 hp
This course syllabus is valid from autumn 2021.
Please note that the course syllabus is available in the following versions:
Autumn2012 , Autumn2014 , Autumn2015 , Autumn2016 , Autumn2017 , Autumn2018 , Autumn2020 , Autumn2021 , Autumn2024

Course code	5HI001
Course name	Computer applications in health care and biomedicine
Credits	10 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Health Informatics
Level	AV - Second cycle
Grading scale	Fail (F), fail (Fx), sufficient (E), satisfactory (D), good (C), very good (B) or excellent (A)
Department	Department of Learning, Informatics, Management and Ethics
Decided by	Programnämnd 5
Decision date	2012-03-29
Revised by	Education committee LIME
Last revision	2021-10-06
Course syllabus valid from	Autumn 2021

Specific entry requirements

A Bachelor's degree or a professional degree equivalent to a Swedish Bachelor's degree of at least 180 credits in health care, biomedicine, medical technology, computer and systems sciences, informatics or the equivalent. And proficiency in English equivalent to English B/English 6.

Objectives

The general aim of the course is that the students should acquire knowledge and skills to be able to participate in the requirements engineering, the development, the introduction, the improvement and the evaluation of computer applications in healthcare, including heterogeneous settings, while considering interoperability, organizational, ethical and legal aspects.

On completion of the course the student should be able to:

Knowledge and understanding

- analyse, discuss and reflect on the information and communication needs in the health care and describe common sources of information,
- analyse, discuss and problematize the use of information systems or computer applications in health care.

Skills and ability

- describe the structure, functionality and use of information systems or computer applications (e.g: medical record systems, telemedicine applications) in healthcare including consumer health, medical education or public health.

Assessment ability and attitudes

- reflect on the integration problems between different information systems that are used in health care,
- analyse, discuss and reflect on legal/ethical aspects concerning the structure and the use of information system in health care.

Content

- Business processes, care processes, care logistic and referral management.
- The care information needs - communication - sources of information - transfer and use (basic informatics - collection processing and presentation of a patient-related data).
- Realisation of evidence based care and the connection to research.
- Operational follow up, quality assurance and Quality Register.
- Information retrieval - information structures - standards (introduction to classifications, terminologies and ontologies).
- Exemplification/description of information systems in the areas of Clinical informatics, Consumer health informatics and Public health informatics.
- The structure, contents and the use of the patient record - Legal and ethical aspects.
- Integration problems between different systems.
- Data Security - Legal and ethical aspects.

Teaching methods

The course is divided into four separate parts consisting of lectures, workshops and demonstrations of IT systems. These four parts are:

- General part (Health informatics) (G)
- Clinical Informatics (CI)
- Consumer Health Informatics (CHI)
- Public Health Informatics (PHI)

and its practical use.

Examination

The examination is performed by two individual assignments. Each individual assignment will be graded with A-F. A mandatory group activity will provide groundwork for the second individual assignment. The group activity will be assessed by an oral group presentation, graded by Pass/Fail scale. To pass the course the student must get at least E grade in both of the individual assignments and pass on the group activity. The final grade for the course is an average of the grades of the two individual assignments.

Limitation of number of occasions to write the exam

Students who have not passed the regular examination are entitled to participate in five more examinations. If the student has not passed the exam after four participations he/she is encouraged to visit the study counsellor. If the student has failed six examinations/tests, no additional examination or new admission is provided. The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. Delayed submission affects the possibility to receive a higher grade than C. An examination for which the student registered but not participated in will not be counted as an examination.

Compulsory participation

The course includes mandatory sessions marked in the course schedule. The examiner assesses if and, in that case, how absence from participation in the group activity and compulsory parts can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the examiner's instructions, the student's results for the course will not be registered. Absence from a compulsory part may result in the student having to wait to compensate until the next time the course is given.

If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities may not be changed, removed or reduced.

Transitional provisions

Examination will be provided during a time of two years after a possible cancellation of the course. Examination can take place according to an earlier literature list during a time of one year after the date when a major renewal of the literature list has been made.

Other directives

Course evaluation will be carried out in accordance with the guidelines established by the Committee for Higher Education.

The course is given in English.

Literature and other teaching aids

Coiera, Enrico
Guide to health informatics

3. ed. : Boca Raton, Fla. : CRC Press, cop. 2015 - xxvi, 683 s.
ISBN:9781444170498 LIBRIS-ID:18591934
Library search

Clinical Decision Support : The Road to Broad Adoption

Academic Press, 2014
LIBRIS-ID:16549930

Shortliffe, Edward H.; Cimino, James J.
Biomedical Informatics : Computer Applications in Health Care and Biomedicine

4th ed. 2014. : - XXVI, 965 p. 253 illus., 135 illus. in color.
ISBN:9781447144748 LIBRIS-ID:16200023
URL: Table of Contents / Abstracts

[Library search](#)

Dorland, W. A. Newman

Dorland's illustrated medical dictionary

32. ed. : Philadelphia, Pa. : Elsevier/Saunders, cop. 2012 - PDF (xxvii, 2147 p.
ISBN:9781455709854 LIBRIS-ID:13625221

[Library search](#)

Fowler, Martin

UML distilled : a brief guide to the standard object modeling language

3. ed. : Boston, Mass. : Addison-Wesley, cop. 2004 - xxx, 175 s.
LIBRIS-ID:9804652
URL: [Prenumeration erfordras](#)

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Dorland, W. A. Newman

Dorland's illustrated medical dictionary