HÖGSKOLAN I GÄVLE

PROGRAMME SYLLABUS

FIRST CYCLE

INTERNET TECHNOLOGY
Programme Code: TGINH
Established by the Board of Science and
Technology 2006-09-21
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Technology 2009-05-07

Programme Syllabus

Study Programme in Internet Technology, 120 HE credits

(Internetteknologi, 120 högskolepoäng)

This programme syllabus applies to students admitted to the autumn semester of 2010 or later.

INTERNET TECHNOLOGY
at Högskolan i Gävle

1 General Arrangement

The education results in a university diploma after two years of full-time studies. For a university diploma, 120 HE credits of successfully completed courses are required. The education can be extended to a bachelor's degree or professional qualification.

2 Expected Learning Outcomes

2.1 Expected Learning Outcomes for First-cycle Programmes According to the Higher Education Act, Chapter 1, Section 8, and Qualification Descriptor According to the Higher Education Ordinance, Appendix 2

First-cycle studies should essentially expand upon the knowledge that the pupils acquire on national or specially designed programmes in upper-secondary school or equivalent knowledge. The government may, however, grant exemptions regarding programmes in fine, applied and performing arts.

First-cycle studies should develop the students
- ability to make independent and critical assessments
- ability to independently discern, formulate and solve problems, and
- preparedness to address changes in the working life.

Within the field of the education, the students should, in addition to knowledge and skills, develop the ability to
- search and evaluate knowledge on an academic level
- follow the knowledge development, and
- exchange knowledge also with individuals without expertise in the area.

Qualification Descriptor
University Diploma
Extent
A higher education qualification is achieved when the student has successfully completed required courses of 120 HE credits with a certain specialisation decided by each higher education institution.

Expected Learning Outcomes
Knowledge and Understanding
For a university diploma, the student should
- demonstrate knowledge and understanding of the programme's main field of study, including knowledge of the disciplinary foundation of the field and knowledge of some applicable methods in the area.

Skills and Abilities
For a university diploma, the student should
- demonstrate the ability to search, collect and critically interpret relevant information to formulate answers to well-defined issues in the programme's

main field of study
- demonstrate the ability to account for and discuss the own expertise with different groups, and
- demonstrate the skills required to work independently with certain assignments in the field of the education.

Judgement and Approach
For a university diploma, the student should
- demonstrate knowledge of and have the skills to handle ethical issues in the programme's main field of study.

Thesis (degree project)
For a higher education qualification, the student should have successfully completed an individual assignment (degree project) within the framework of the required courses and in the programme's main field of study.

Other
For a higher education qualification with a certain specialisation, the specific requirements decided by each higher education institution within the framework of the requirements in this qualification descriptor should also apply.

In addition, the learning outcomes decided by each higher education institution apply (SFS 2002:1107)

2.2 Specific Expected Learning Outcomes for the Programme
After completed education, the student should be able to

Knowledge and Understanding
- define, explain and use central concepts in the main field of computer science, with special emphasis on the area of internet technology.

Skills and Abilities
- independently describe and apply established methods and principles in the area of internet technology
- connect a company's network to the Internet and also connect geographically remote sections/units to a common and powerful network via the Internet
- establish system communication via the Internet and develop Internet-based information systems
- use the Internet as a communication channel without hindrance, and independently and critically use the Internet to search for information and new knowledge
- account for and discuss the own expertise with both colleagues in the area and individuals without expertise in a way that shows good communicative and social skills, both orally and in writing

Judgement and Approach
- make assessments within internet and information technology, considering scientific and social aspects and established ethical principles in the area
- show an approach to knowledge characterised by an active, responsible and

self-reflecting way of studying, and the ability to identify the own needs of additional knowledge and continuous professional development
– relate to and discuss the own professional role in a way that shows understanding of its relation to an organisation or a company

3 Description of the Programme

3.1 Main Field of Study Computer Science
The quick development in the field of information technology has resulted in the Internet being used by most companies in areas such as communication, integration of Intranet/information systems or e-commerce. The study programme and its specialisation in internet technology provides practical and theoretical knowledge of the Internet and related systems needed to make IT operations cheaper, more accessible and more flexible, using new network technology, both internally in companies and externally.

The programme's main field of study is computer science. The first year provides basic knowledge in computer science and mathematics. Internet technology and its applications will be studied from an organisational perspective. The knowledge acquired during the first year will function as the foundation for courses in year two, which focus on technologies related to the Internet, networks, shells and programming.

The courses are work-oriented which implies focus on project work and usage of well-known systems (e.g. Cisco). Study visits and placement periods are included in the courses and constitute approximately a fourth of the total programme length.

3.1.1 Degree Project
The programme ends with a degree project. The degree project is usually carried out in concentrated form at the end of the education. Through the degree project, knowledge acquired during previous studies should be applied, broadened and advanced. Through the degree project, the student should show that the aims for first-cycle programmes stated in the Higher Education Act, the aims for a professional qualification and the specific aims stated in this programme syllabus have been achieved.

3.2 Teaching and Examination

3.2.1 Teaching
The education is based on the principle that students initially study different technologies in theory and apply them practically in laboratory sessions, and then utilise/apply this knowledge in real situations during the placement periods.
A project-based working method is used to imitate the environment and the working methods used in the working life. This in combination with a company adapted placement provides knowledge of what project work in collaboration with colleagues implies, the ability to participate in development work and an interest in accepting and solving new assignments.

The progression of the education occurs through a progressive specialisation in the main field of computer science. This takes place both through in-depth subject study and development of the scientific approach and through better skills in relation to the

working life by working in project, placement periods and the completing degree project.

3.2.2 Information Technology and Society
The education should provide a perspective on and an approach to the continuous development that takes place in society, and in the field of information technology in particular. It can be summarised in some basic values that the education is based on:

- *continuous learning*: It is important to accept that the individual cannot master everything, but instead must find tools and models to manage and navigate in a constantly changing environment
- *a comprehensive view*: It is important that the student can put the own role in relation to the organisation/environment; for example, to see that the company's IT department is a supporting process for the company's main process. It is also important to be able to discuss the own role and its relation to the company/organisation, and to be able to integrate ethical and humanistic aspects, and promote a sustainable development in the development of information systems
- *social and aesthetic ability*: To reach success as an associate, the ability to exist and function together with other people is required, apart from professional knowledge. A report should be well written, have an attractive disposition and communicate a clear message. An oral presentation should be both well-disposed and well presented
- These values are reflected in the education both as expressed parts of courses and as integrated sub-parts of different courses. It is also reflected in the students' personal development during the education.

3.2.3 Examination
Examination is carried out within the framework of the programme courses. The forms of examination are chosen in such a way that they give students the possibility to demonstrate the different knowledge and knowledge forms expressed by the expected learning outcomes. It implies that several different examination formats occur in the education, for example written and oral tests, oral and written presentations of laboratory sessions, written assignments and project assignments.

3.3 Placement
A total of 25 weeks, equivalent to 37.5 HE credits, will be constituted of work at companies. Certain courses end with projects designed together with and is carried out at companies, where the theoretical knowledge from the courses are applied and used in practice.

3.4 Student Influence
There is a council for educational affairs linked to the programme, which consists of representatives from the working life, teachers and students. The council for educational affairs is advisory, and the faculty programme director is the chairman. There are student representatives in the board of governors, the faculty boards and in the department boards. Gefle Student Union appoints student representatives.

4 Courses in the Programme
The students have guaranteed admission to the courses within the programme. Course applications for the following semester must be submitted. Changes in the order of courses may be made in consultation with students in the programme.

Changes in the programme courses are determined by the Faculty Board. Change of period when the course given is determined on department level. Alternative course choices may be made in consultation with the faculty programme director, provided that the expected learning outcomes for the programme are fulfilled.

F = First Cycle

Year 1

Period	Course Name	HE credits	Level	Main Field of Study
1:1	Information Processing and Programming for Internet Technology	15	F	Computer Science
1:2	Introduction to Systems Analysis	7.5	F	Computer Science
1:2	Discrete Mathematics for Internet Technology	7.5	F	Mathematics
1:3	Data Communication and Computer Networks for Internet Technology	15	F	Computer Science
1:4	Design and Construction of Web Applications	15	F	Computer Science

Year 2

Period	Course Name	HE credits	Level	Main Field of Study
2:1 – 2:2	Practical Internet Technology I	15	F	Computer Science
2:1 - 2:2	Practical Internet Technology II	15	F	Computer Science
2:3	Systems Integration Using the Internet	15	F	Computer Science
2:4	Degree Project in Internet Technology	15	F	Computer Science

5 Entry Requirements
General entry requirements, specific entry requirements 7 and the following specific entry requirements:

Subject	Course
Mathematics	Ma B

The grade in mathematics must be at least Pass.

6 Grades
Grades are given for the programme courses according to relevant course syllabus.

7 Examination Regulations

7.1 Title of Qualification

University Diploma in Computer Science, specialised in Internet Technology
Högskoleexamen i datavetenskap med inriktning internetteknologi

7.2 Qualification Criteria
To receive a certificate for University Diploma in Computer Science, Specialised in Internet Technology, the student must have successfully completed courses of 120 HE credits within the programme or equivalent courses with clear progression in the main field. A degree project of 15 HE credits must be included.

7.3 Degree Certificates
Students who fulfil the requirements for a higher education qualification should receive a degree certificate on request.

8 Further Instructions
Interim Regulations
For students admitted to the later part of the programme and for students who have had approved leave from studies, a specific study plan is established by the faculty programme director in consultation with study advisers.

Interim Regulations between Years
To be able to continue the studies in the later years without restrictions, the student must have successfully completed at least 45 HE credits by the time of transition to year two. Students who do not fulfil this requirement should contact the study advisor for individual study planning.

Continuation to a Bachelor's Degree
For students who want to continue to a bachelor's degree, the faculty programme director will establish proposals for a study path for supplementation to a bachelor's degree, with computer science as the main field of study.