Experiences from different program integrating courses

DD1390 Program Integrating Course in Computer Science Engineering

Mandatory 6 credit course given in year 1–3 of the 5 year Computer Science and Engineering program. About 175 students year 1, 175 students year 2, 160 students year 3. 13 professors/lecturers who are teaching in the program are used as mentors.

Structure of the course

• An introductory lecture the first day of each year, describing the courses of that year.
• A reflection seminar each period (four each year) in 39 cross-grade groups of about 13 students in each, led by a mentor.
• Before each seminar the students should read some texts, write a reflection document and read each others’ documents in the group.
• The reflection documents and reflection seminars are mandatory and give 1 credit each year.
• The information about elective courses and master programs are integrated in the schedule of the course.
• Mandatory questionnaires on the education and studies are sent out at least once a year.
• In year 1 there is a separate 1,5 credit component on ethics in computer science. In year 2 there is a 1,5 credit project on computer science history.

Topics of the reflection seminars

• Study motivation and study techniques
• Learning outcomes, criteria and assessment
• Plagiarism and responsibility
• The professional life as a CS engineer
• Master programs
• Studying and working abroad
• Minorities and equality
• Quality in education
• Student influence
• Procrastination
• Generic competences and life-long learning
ML1040/ML1042 Program Integrating Course in Mechanical Engineering

Mandatory course given in year 1–3 of the 3 year Mechanical Engineering program. About 100 students year 1, 80-90 students year 2, 70-80 students year 3. Today 5 lecturers who are teaching in the program are used as mentors, next year we will be 8-9 mentors.

**Structure of the course**

- An introductory lecture is given in the beginning of each academic year, describing the courses of that year.
- The first period of the year (P1) there is a separate 1-1.5 credit component:
  - Year one: Introduction to higher education (responsibilities, study techniques, goals and strategies, 1.5 credits),
  - Year two: Socially sustainable development for engineers (1.5 credits),
  - Year three: Personal development and feedback (1 credit).
- A reflection seminar period 2, 3 and 4 (three each year) in 24 cross-grade groups, 10-14 students in each group, led by a mentor.
- Before each seminar the students should do preparations, usually read something (from a shorter text to a book), write a reflection document and read the group members documents.
- The reflection documents and reflection seminars are mandatory and give 1.5 credits each year.
- Information about elective courses and thesis work are integrated in the schedule of the course.

**Graphic presentation of the structure of the course**

**Topics of the reflection seminars**

- Plagiarism and responsibility
- Learning outcomes, criteria and assessment
- Learning and preparing for the future
- Procrastination
- Generic competences
- Minorities and equality
- The professional life as a mechanical engineer
- Book seminar (students read books on different topics (leadership, public speaking, history of technology etc.) This seminar will be given once every year (students participate three times during their education).
EQ2220 The Sustainable Wireless Systems Engineer

Mandatory course 3 cr.u. given in year 1–2 of the 2 year master program on Wireless Systems. About 30 students in total during 2014/15. Two lecturers from the program are mentors.

More or less identical courses are offered in all master programs at the school of EES. The course planning is done jointly, but the seminars are run separately for each program.

The course is also available in a single year version, EQ2221, 1.5 cr.u. for exchange students.

Structure of the course

• A reflection seminar each period (four each year) in 3 groups of 8-10 students each (mixed 1st year, 2nd year, exchange students), led by a mentor.

• Before each seminar the students should study some prescribed background material (papers/TED talks/...), write a reflection document and read each others’ documents in the group.

• The reflection documents and reflection seminars are mandatory and give 1.5 credits each year.

• Two-year round-robin schedule of seminar topics.

Topics of the reflection seminars

• Study Wireless Systems Master – Why? (The only topic that is repeated annually, different tasks for 1st and 2nd year students)

• Study Wireless Systems Master – How?

• Engineering Ethics

• Course selection and end of the year summary

• Study Wireless Systems Master – Why? (See above)

• Procrastination

• Sustainability

• Job market
Grading of the three courses

EQ2220 The Sustainable Wireless Systems Engineer

- For each seminar, the students obtain up to 3 points; one for active participation at the seminar and one or two for the written reflection.

- The total number of points accumulated over the course translates into the grade.

- If the student missed the E level by $n$ points, he or she has to write an $n$ page long document to pass the course. Topic: *On the contribution of Wireless Systems engineers to the sustainable society.*

More information: https://www.kth.se/social/course/EQ2220

ML1040/ML1042 Program Integrating Course in Mechanical Engineering

- For each seminar, the students obtain up to 3 points; one for active participation at the seminar, one for the written reflection and one for keeping the course deadlines.

- The total number of points accumulated over the course translates into the grade.

- If the student missed the E level by $n$ points, he or she has to write an $n$ page long document to pass the course. The student chooses the topic, but it should relate to the learning outcomes of the course.

DD1390 Program Integrating Course in Computer Science Engineering

- For each seminar and for the ethics component, the students obtain up to 3 points; one for active participation at the seminar and one or two for the written reflection.

- The total number of points accumulated over the course translates into a grade.

- If the student missed the E level by $n$ points, he or she has to write an $n$ page long document to pass the course. Topic: *The role of the Computer Science and Engineering program in the society.*

- The computer science history project is also graded, and the final grade is the mean of the two grades, rounded up if needed.

More information: https://www.kth.se/social/course/DD1390