GÖTEBORGS UNIVERSITET

The Board of the IT Faculty

DIT260, Advanced Functional programming, 7.5 higher education credits

Second Cycle/A1F

This syllabus in English is the binding document

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1. Confirmation

The Faculty Board at the IT-university established the course plan at 2006-11-17. It has been revised 2009-09-19 to be valid from spring semester 2010.

Field of education: Science

Department: Computer Science and Engineering

2. Position in the educational system

The course is a part of the Computer Science Master's programme and an elective course at the University of Gothenburg. The level for the course in relation to degree requirements is Master´s degree, code A1F. The course has course/courses at second cycle level as entry requirements.

3. General prerequisites

The requirement for the course is to have successfully completed two years of an education aimed at a bachelor degree within Computer Science or equivalent. Specifically, a course in Functional Programming is required.

4. Course content

The aim of the course is to explore the powerful mechanisms that functional programming languages offer to solve real problems and structure larger programs. The focus lies on library design and the concept of embedded languages. The programming language used in the course is Haskell.

5. Outcomes

After successful completion of the course the student will be able to

- use advanced type system features, such as type classes and generalized algebraic datatypes

- design and implement techniques for embedded languages

- use Monads and monad transformers

- use Parser and pretty printing combinators

- use GUI programming techniques

Examples of concrete real-life applications of the above are also part of the course.

6. Required reading

See separate literature list.

7. Assessment

The course is examined by a written exam and programming labs.

A student who has failed a test twice has the right to change examiner, unless weighty argument can be adduced. A written application should be sent to the department.

8. Grading scale

The course is graded with the following marks: Fail, Pass, Pass with Distinction.

9. Course evaluation

The course is evaluated through meetings both during and after the course between teachers and student representatives. Further, an anonymous questionnaire can be used to ensure written information. The outcome of the evaluations serves to improve the course by indicating which parts could be added, improved, changed or removed.

10. Additional information

The course is held in English.