Course syllabus

Programmering och databaser
Programming and Databases

EDAA20, 7,5 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED C/D
Date of Decision: 2023-04-18

General Information

Main field: Technology.
Compulsory for: L2
Elective for: B4, K4
Language of instruction: The course will be given in Swedish

Aim

The students shall learn how to write small and medium-sized computer programs and attain basic knowledge of object-oriented programing and the programming language Java. They shall also attain basic knowledge of databases.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- be able to explain fundamental concepts in object-oriented programming
- be able to explain and give examples of use of fundamental algorithms, e.g., for searching
- be able to describe and give examples of use of fundamental data structures such as arrays and matrices
- be able to describe information systems with E/R models and UML notation
- be able to use the query language SQL to retrieve information from a database

Competences and skills
For a passing grade the student must

- be able to develop and implement algorithms to solve simple problems
- be able to implement Java classes, starting from given specifications

- be able to use tools to write, test and debug programs
- be able to read program code and program documentation
- be able to use tools to implement a database

Judgement and approach
For a passing grade the student must

- be able to go further on his own in the field of object-oriented programming

Contents

Programs as models of real systems. Objects and operations, classes and methods. Basic Java programming, fundamental algorithms. Data structures: arrays, the class ArrayList. Inheritance, polymorphism. String classes. Introduction to database systems. The basics of the relational model, the query language SQL. E/R and UML diagrams.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)
Assessment: Written examination in programming. The final grade of the course is based on the result of this examination. Compulsory course items: laboratory work in programming and laboratory work in databases.

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.

Parts
Code: 0110. **Name:** Programming, Compulsory Course Items.
Credits: 3. **Grading scale:** UG. **Assessment:** For a passing grade, the laboratory work must be completed.
Contents: Programming laboratory work.
Code: 0210. **Name:** Programming, Written Examination.
Credits: 3. **Grading scale:** TH. **Assessment:** Written examination in programming. The final grade of the course is based on the result of the written examination.
Code: 0310. **Name:** Databases, Compulsory Course Items.
Credits: 1,5. **Grading scale:** UG. **Assessment:** For a passing grade, the database laboratory work must be completed. **Contents:** Laboratory work.

Admission

The number of participants is limited to: No
The course overlaps following course/s: EDAA65, EDAA45, EDAA50, EDAA55, EDA011, EDA016, EDA017, EDA501, EDA616, EDAA10, EDAA70

Reading list

- Downey, A. & Mayfield, C.: Think Java, How to Think Like a Computer Scientist. O'Reilly, 2017, ISBN: 978-1491929568. Think Java is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License. The authors maintains an online version at http://greenteapress.com/wp/think-java/.

Contact and other information

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