Course syllabus

C-programmering
C Programming

EDAA25, 3 credits, G1 (First Cycle)

Valid for: 2019/20
Decided by: PLED C/D
Date of Decision: 2019-04-01

General Information

Elective for: BME4, C4-pv, D4-is, D4-pv, E4, F2, F4-bs, L5-gi, M4, N2, Pi4
Language of instruction: The course will be given in Swedish

Aim

The purpose of the course is that the student shall how to write program in the C programming language.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- understand how memory is allocated and deallocated in C,
- understand how pointers work and how they are used,
- understand the type system of C, e.g. which type conversions are permitted and portable,
- understand the meaning of undefined behaviour, implementation defined behaviour, and unspecified behaviour and when it is important to should think about them.

Competences and skills
For a passing grade the student must

- be able to write programs in the language ISO C, i.e. C11,
- be able to use the debugger GDB, and
- be able to use the tool Valgrind for automatic detection of memory related errors.

Judgement and approach
For a passing grade the student must

- be able to select the appropriate memory allocation method depending on the situation.

Contents

Principles of the C programming language, comparison between constructs in Java and C, struct, pointer, array, memory allocation, global variables, static storage duration, the C library, the ISO C11 standard, C implementation, implementation-defined behaviour, unspecified behaviour, undefined behaviour, storage class specifiers, type specifiers, C preprocessor, GDB and Valgrind. Differences between ANSI C, C99 and C11.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)
Assessment: Three compulsory assignments, which must be performed individually. Written exam. To qualify for the written exam the assignments must be completed. The final grade of the course is based on the result of the exam.

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: 0113. **Name:** Compulsory Course Items.
Credits: 1. **Grading scale:** UG. **Assessment:** To qualify for a passing grade the assignments must be completed. **Contents:** Assignments. **Further information:** The assignments must be performed individually.
Code: 0213. **Name:** Written Examination.
Credits: 2. **Grading scale:** TH. **Assessment:** The final grade of the course is based on the result of the written examination. **Contents:** Written examination. To qualify for the written exam the assignments must be completed.

Admission

Admission requirements:

- An introductory programming course

The number of participants is limited to: No
The course overlaps following course/s: EDA150

Reading list

- Jonas Skeppstedt and Christian Söderberg: Writing Efficient C Code: A Thorough Introduction, 3rd edition. Amazon, 2019, ISBN: 9781723831157.

Contact and other information

Course coordinator: Jonas Skeppstedt, jonas.skeppstedt@cs.lth.se
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