Computer Language Construction

Programme course

6 credits

Konstruktion av datorspråk

TDP007

Valid from: 2017 Spring semester

Determined by
Board of Studies for Computer Science
and Media Technology

Date determined
2017-01-25

Main field of study
Programming

Course level
First cycle

Advancement level
G1F

Course offered for
- Programming, Bachelor's Programme

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Basic knowledge of object oriented programming

Intended learning outcomes
After the course the student should be able to:
- Explain and use regular expressions.
- Use tools for markup languages (e.g. XML).
- Use and modify a parser for a simple programming language.
- Describe and apply basic principles for programming language design.

Course content
Craft: Ability to design a notation for a specific type of use or system. Ability to define and implement own notations to facilitate development and use, e.g. meta data and scripts.

Topics: Structure and implementation of programming langauges. Abstraction and the role of abstraction in programming languages. Basic principles of interpreter design. Regular expressions and finite automatons. Syntactic parsing. Abstract syntax trees. Overview of different types of computer languages.

Techniques: Ruby, Emacs, with short orientation in some other tools.

Teaching and working methods

The course consists of interactive lectures, laborative exercies and seminars where the students' solutions will be discussed.

Examination

LAB1	Laboratory work	2 credits	U, G
DAT1	Computer examination	4 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Peter Dalenius

Examiner

Peter Dalenius

Course website and other links

http://www.ida.liu.se/~TDP007

Education components

Preliminary scheduled hours: 44 h
Recommended self-study hours: 116 h

Course literature

Thomas, Dave et.al. (2009) Programming Ruby 1.9: The Pragmatic Programmer's Guide.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.