

## **COURSE SYLLABUS**

# Digital Electronics with VHDL, 7.5 credits

Digitalteknik med VHDL, 7,5 högskolepoäng

Course Code:TDVK19Education Cycle:First-cycle levelConfirmed by:Dean Dec 1, 2018DisciplinaryTechnology

Revised by: Director of Education Sep 26, 2022

Valid From: Jan 1, 2023

Valid From: Jan 1, 2023

DT1

Valid From:Jan 1, 2023Subject group.511Version:4Specialised in:G1F

Main field of study: Computer Engineering

#### Contents

The course covers digital design and a basic use of the hardware description language VHDL.

domain:

The course covers the following topics:

- The hardware description language VHDL
- Circuit technologies (e.g. CPLD, FPGA, ASIC)
- Data path building blocks (e.g. adders, multipliers)
- Sequential logic (e.g. registers, counters)
- Time critical aspects
- Finite State Machines, FSM
- Design verification (testbenches)

### Type of instruction

The course consists of lectures and laboratory work.

The teaching is conducted in English.

### **Prerequisites**

#### **Examination and grades**

The course is graded 5,4,3 or Fail.

The final grade will only be issued after satisfactory completion of all assessments.

#### Registration of examination:

Name of the Test	Value	Grading
Examination <sup>I</sup>	4 credits	5/4/3/U
Laboratory work	3.5 credits	U/G

<sup>&</sup>lt;sup>I</sup> Determines the final grade of the course, which is issued only when all course units have been passed.

#### **Course literature**

Literature

The literature list for the course will be provided 8 weeks before the course starts.

Title: VHDL för konstruktion

Author: Stefan Sjöholm och Lennart Lindh (2014)

Publisher: Studentlitteratur ISBN: 978-91-44-09373-4

Alternatively,

Title: VHDL for Designers

Author: Stefan Sjöholm and Lennart Lindh (1997)

Publisher: Prentice Hall ISBN: 978-01-34-73414-9