Course description
Design of Software Systems

SDU

Design of Software Systems

Academic Study Board of the Faculty of Engineering

Teaching language: English
EKA: T510000102, T510000112
Censorship: Second examiner: External, Second examiner: None
Grading: 7-point grading scale, Pass/Fail
Offered in: Odense
Offered in: Autumn
Level: Bachelor

Course ID: T510000101
ECTS value: 5

Date of Approval: 09-09-2022

Duration: 1 semester

Version: Archive

Course ID
T510000101

Course Title
Design of Software Systems

ECTS value
5

Internal Course Code
SB-DES

Responsible study board
Academic Study Board of the Faculty of Engineering

Date of Approval
09-09-2022

Course Responsible

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Offered in
Odense

Level
Bachelor

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Autumn

Duration
1 semester

Recommended prerequisites
To follow this course in practice it is strongly recommended to have basic programming skills.

It is also recommended to have skills within the subject areas of:

- Fundamental Software Engineering
- Organisation and Management
- Database Design and Programming
- Organisation Oriented Software Development

Overall learning objectives
This course enables students to understand, select and apply, and implement an appropriate architecture for a given context. Students are enabled to design and incrementally implement an architecture-centric approach, which inter alia addresses risk-driven, object-oriented, and UML-based architecture analysis, design, realization, and management.

Learning objectives - Knowledge
The student will be able to:

- Describe the design of a software system
- Explain the impact of software architecture to software (systems) development
- Describe the architecture of the software systems
- Describe steps in the evaluation of software architecture
- Describe steps in the selection of appropriate software architecture patterns
- Explain software architecture design decisions
- Explain the link between software architecture, quality, and development context
- Differentiate software architecture patterns and software design patterns

Learning objectives - Skills
Explain concepts behind and implementation of the following:

- Selection of software architecture patterns, views and tactics
- Definition of quality goals for software architecture
- Implementation of a software architecture pattern

- Selection of an appropriate software architecture quality evaluation method
- Compare and evaluate different software architecture patterns
- Application of tools for software design and software development

Learning objectives - Competences

- Ability to design and implement a software architecture pattern
- Ability to evaluate the quality of software architecture

Content

The following topics will be covered:

- Software architecture patterns
- Software architecture documentation
- Software architecture quality and analysis
- Software architecture tactics
- Software architecture views
- Software architecture recovery
- Software design patterns

URL for Skemaplan

Odense
Show full time table

Teaching Method

Lectures, laboratory exercises, and project work.

Number of lessons

48 hours per semester

Teaching language

English

Examination regulations

Exam regulations

Name

Exam regulations

Examination is held

By the end of the semester

Tests

Exam

EKA

T510000102

Name

Exam

Form of examination

Written exam

Censorship

Second examiner: External

Grading

7-point grading scale

Identification

Student Identification Card - Exam number

Language

English

Duration (hours)

2

ECTS value

5

Prerequisites

Type	Prerequisite name	Prerequisite course
Exam	T510000112, Examination conditions	T510000101, Design of Software Systems

Exam regulations

Name

Exam regulations

Examination is held

By the end of the semester

Tests

Examination conditions

EKA

T510000112

Name

Examination conditions

Description

Completion of mandatory activities in the module is a prerequisite to attend the exam. An example of a completion of a mandatory activity is the submission of assignments on time and in accordance with the requirements

specified.

Form of examination
Compulsory assignment

Censorship
Second examiner: None

Grading
Pass/Fail

Language
English

ECTS value
0

Additional information
The course T510000101 is phased-out and was taught for the last time in 2019.

Courses offered

Period	Offer type	Profile	Programme	Semester
Fall 2019	Mandatory	Software Engineering	Bachelor of Science in Engineering (Software Engineering) | Odense	3

Studieforløb

Profile	Programme	Semester	Period
Software Engineering	Bachelor of Science in Engineering (Software Engineering) | Odense	3	E19
Software Engineering	Bachelor of Science in Engineering (Software Engineering) | Odense	3	E19, F20
Software Engineering	Bachelor of Science in Engineering (Software Engineering) | Odense	3	F20
Software Engineering	Bachelor of Science in Engineering (Software Engineering) | Odense	3	F19
Software Engineering 2018	Bachelor of Science in Engineering (Software Engineering) | Odense	3	E20