

Offered by  
ICT Engineering

IT-DNP1

2.0

## Internet Technologies, C# and .NET

ECTS

5

### Prerequisites

IT-SDJ1, IT-DBS1, IT-RWD. Or similar courses. The course must be passed before graduation.

- IT-DBS1
- IT-RWD1
- IT-SDJ1

### Main purpose

The purpose is to qualify the student to understand and implement the basic concepts of the C# programming language and the .NET developer platform.

### Knowledge

The student should be able to understand:

- The fundamentals of .NET development and the common type system
- The C# programming language
- Web services
- Web applications
- Object-relational mapping
- Authentication and authorization
- Client-side vs. server-side programming

### Skills

The student should achieve the skills:

Implement console applications, web applications and web services with

- Server-side C#-programming
- Data persistence using object-relational mapping
- User management, including authentication and authorization
- Create and consume class libraries
- Consume and expose web services
- Navigate and use the managed .NET API
- Understand security concerns of .NET applications
- Apply unit testing and TDD principles to .NET applications
- Use a command-line interface (CLI) toolchain
- Deploy .NET applications

### Competences

The student should be able to:

- Master the fundamentals of the C# programming language and the .NET developer platform
- Develop .NET applications and services as a part of a distributed system, herein account for communication protocols used

### Topics

#### Teaching methods and study activities

The semester has 56 classroom lessons - four lessons once a week for 14 weeks. These lessons consist of exercises and teacher presentations. The total workload of the student is expected to be around 140 hours. Referring to the Study Activity Model, the workload is distributed as follows:

#### CATEGORY 1

Participation of lecturer and students

10/9/2018

Initiated by the lecturer  
42 hours - 30%

- Lessons, scheduled
- Exercises in class
- Project guidance
- Exam

#### **CATEGORY 2**

Participation of students  
Initiated by the lecturer  
42 hours - 30%

- Exercises
- Project and group work
- Homework

#### **CATEGORY 3**

Participation of students  
Initiated by students  
42 hours - 30 %

- Self-study
- Group work
- Literature search
- Preparation for exam

#### **CATEGORY 4**

Participation of lecturer and students  
initiated by students  
14 hours - 10 %

- Study guidance

#### **Resources**

Online material

#### **Evaluation**

Permit criteria for attending examination:

- Group reports including student's name handed in before deadline.

#### **Examination**

Oral Examination.

The examination is a joint exam with IT-SEP3 and IT-SDJ3.

Group presentation followed by individual examination.

Group presentation of the IT-SEP3 project - 5 minutes per person.

Individual examination - 35 minutes including examination in IT-SEP3, IT-DNP1 and IT-SDJ3.

Allowed tools: All

Internal exam.

#### **Grading criteria**

IT-SEP3 accounts for 50% of final grade.

IT-DNP1 accounts for 25% of final grade.

IT-SDJ3 accounts for 25% of final grade.

#### **Additional information**

#### **Responsible**

Jakob Knop Rasmussen (JKNR)

#### **Valid from**

15.8.2018

10/9/2018

**Course type**

ICT Engineering; Compulsory Course for all ICT Engineering; 3. semester;

*Cf. K. Petersen*



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