



Module Specification

Application Development with Java [TSI]

Version: 2023-24, v2.0, 20 Mar 2023

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Part 1: Information

Module title: Application Development with Java [TSI]

Module code: UFCFYW-6-1

Level: Level 4

For implementation from: 2023-24

UWE credit rating: 6

ECTS credit rating: 3

Faculty: Faculty of Environment & Technology

Department: FET Dept of Computer Sci & Creative Tech

Partner institutions: Transport and Telecommunication Institute

Delivery locations: Not in use for Modules

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: The aim of this module is to acquaint with Java programming language, with Java enterprise-application building framework such as Spring, skills

and practical use of building distributed applications based on microservice architecture.

Outline syllabus: •Introduction to Java Programming Language

- Java syntax
- Object-Oriented Programming in Java
- Memory management in Java
- Java Generics
- Basic I/O operations
- JDBC Database Access
- MVC design pattern
- Dependency injection with Spring Framework
- Evolution of distributed applications
- Microservice architecture
- 12 Factor App principles

Part 3: Teaching and learning methods

Teaching and learning methods: Learning and teaching will be provided to students in two forms: lectures and labs. During lectures, theoretical aspects of the course will be provided to students by the teaching staff. Lectures will be supported by presentation published and available to the students on e.tsi.lv under the module section. Also, additional materials, like code examples, text books, publications on the internet, videos etc will be presented in e.tsi.lv.

During labs, each student receives an individual task to perform.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Know JAVA programming language syntax, dependency injection with Spring, evolution of distributed systems, microservice architecture concept, 12 factor application principles

MO2 Work with Spring Tools Suite

MO3 Apply MVC design pattern in practice, build distributed applications with microservice architecture

Hours to be allocated: 60

Contact hours:

Independent study/self-guided study = 48 hours

Face-to-face learning = 32 hours

Total = 80

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/EA6D4915-6284-FB76-6C08-63FA85E529BD.html?lang=en-gb&login=1) via the following link <https://rl.talis.com/3/uwe/lists/EA6D4915-6284-FB76-6C08-63FA85E529BD.html?lang=en-gb&login=1>

Part 4: Assessment

Assessment strategy: This module assessment is split into two (Exam, Labs).

A final 2-hour examination which will assess the students understanding of taught material that forms part of the learning outcomes but cannot easily be assessed through practical tasks.

The practical assignment component should be completed individually (i.e. this is not group work). The practical assignment has two parts, as follows:

A series of 5 labs exploring principles of application development using JAVA programming language.

A series of 5 tests in TSI LMS.

Assessment components:

In-class test (First Sit)

Description: 5 tests with theoretical questions about Spring, Spring Tools Suite, distributed systems and microservice architecture

Weighting: 24 %

Final assessment: No

Group work: No

Learning outcomes tested:

Portfolio (First Sit)

Description: series of 5 labs, exploring basic principles of application development using JAVA programming language and Spring Tools Suite. An application and its source code should be provided to the teaching staff.

Weighting: 36 %

Final assessment: No

Group work: No

Learning outcomes tested:

Examination (First Sit)

Description: Examination

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested:

In-class test (Resit)

Description: 5 tests with theoretical questions about Spring, Spring Tools Suite, distributed systems and microservice architecture

Weighting: 24 %

Final assessment: No

Group work: No

Learning outcomes tested:

Portfolio (Resit)

Description: series of 5 labs, exploring basic principles of application development using JAVA programming language and Spring Tools Suite. An application and its source code should be provided to the teaching staff.

Weighting: 36 %

Final assessment: No

Group work: No

Learning outcomes tested:

Examination (Resit)

Description: Examination

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Computer Science and Software Development {Double Degree} {Foundation} [TSI]
BSc (Hons) 2022-23

Computer Science and Software Development {Double Degree} [Feb][PT][TSI][5yrs]
BSc (Hons) 2021-22

Computer Science and Software Development {Double Degree} [Oct][PT][TSI][5yrs]
BSc (Hons) 2021-22