# Course syllabus
# Software Engineering
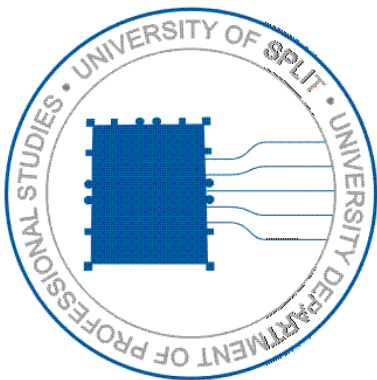
| COURSE DETAILS | | |
|---|---|---|
| *Type of study programme* | Specialist graduate professional study programme - 120 ECTS | |
| *Study programme* | INFORMATION TECHNOLOGIES | |
| *Course title* | Software engineering | |
| *Course code* | DIT007 | |
| *ECTS (Number of credits allocated)* | 6 | |
| *Course status* | Core | |
| *Year of study* | Second | |
| *Course Web site* | http://moodle.oss.unist.hr/ | |
| *Total lesson hours per semester* | Lectures | 30 |
| | Seminar | 15 |
| | Laboratory exercises & practical demonstration | 15 |
| *Prerequisite(s)* | None | |
| *Lecturer(s)* | Department of Information technologies: Karmen Klarin, MSc, senior lecturer | |

## COURSE DESCRIPTION

| | |
|---|---|
| *Course Objectives:* | • Understanding basic approach to information systems development with emphasis on analysis of business systems and design new systems.<br><br>• Identifying, select and specify user requirements related to the possibility of checking the volume and quality of functionality of the new system. |
| *Learning outcomes*<br><br>*On successful completion of this course, student should be able to:* | 1. define the basic concepts of information systems development and software engineering,<br><br>2. describe a model and recognize the way of requirements specification for software solutions,<br><br>3. show the order and use of models and techniques for program development,<br><br>4. connect areas and approaches in the product design architecture,<br><br>5. propose a model of research and development activities and programming,<br><br>6. determine tasks and roles of individual for activities of the program development. |
| *Course content* | Software support as a product. Types of software products. Research, development and production software application. The client, user and contractor. Engineering design. Approaches to the development of information systems. The life cycle and development of the IS. IS development process, the methods and techniques of development of the IS. Software process, process modelling, prescriptive models. Agile approach to process modelling. Requirements engineering. Definition and domain of requirements. Fundamentals of requirements specification. Relationship between requirements and technology; relationship between requirements and organization; relationship between requirements and users. Problems with the requirements. Requirements validation and verification. Analysis and modelling of the existing system. Design software solutions, design concepts. Interaction between analysis and design. The design focuses on quality software solutions. Structured design. Design of interface. Detailed design and programming. Components and systems testing. |

# CONSTRUCTIVE ALIGNMENT – Learning outcomes, teaching and assessment methods

| Alignment of students activities with learning outcomes | | |
|---|---|---|
| **Activity** | **Student workload ECTS credits** | **Learning outcomes** |
| *Lectures* | 30 hours  / 1 ECTS | 1,2,3,4,5,6 |
| *Laboratory work* | 15 hours  / 0,5 ECTS | 4,5,6 |
| *Seminar* | 45 hours  / 1,5 ECTS | 3,4 |
| *Self-study* | 75 hours  / 2,5 ECTS | 1,2,3,4,5,6 |
| *Office hours and final exam* | 15 hours  / 0,5 ECTS | 1,2,4,5,6 |
| **TOTAL:** | **180 hours / 6 ECTS** | **1,2,3,4,5,6** |

| CONTINUOUS ASSESSMENT | | |
|---|---|---|
| **Continuous testing indicators** | **Performance $A_i$ (%)** | **Grade ratio $k_i$ (%)** |
| *Class attendance and participation* | 50 – 100 | 5 |
| *Laboratory tasks* | 100 | 20 |
| *Seminar (practical exam)* | 50 - 100 | 15 |
| *Preliminary exam I* | 50 – 100 | 30 |
| *Preliminary exam II* | 50 – 100 | 30 |

| FINAL ASSESSMENT | | |
|---|---|---|
| **Testing indicators – final exam (first and second exam term)** | **Performance $A_i$ (%)** | **Grade ratio $k_i$ (%)** |
| *Theoretical exam (written and/or oral)* | 50 – 100 | 60 |
| *Previous activities (include all continuous testing indicators)* | 50 – 100 | 40 |
| **Testing indicators – makeup exam (third and fourth exam term)** | **Performance $A_i$ (%)** | **Grade ratio $k_i$ (%)** |
| *Theoretical exam (written and/or oral)* | 50 - 100 | 60 |
| *Previous activities (include all continuous testing indicators)* | 50 - 100 | 40 |

| PERFORMANCE AND GRADE | | |
|---|---|---|
| **Percentage** | **Criteria** | **Grade** |
| 50% - 61% | *basic criteria met* | sufficient (2) |
| 62% - 74% | *average performance with some errors* | good (3) |
| 75% - 87% | *above average performance with minor errors* | very good (4) |
| 88% - 100% | *outstanding performance* | outstanding (5) |

## ADDITIONAL INFORMATION

Teaching materials for students (scripts, exercise collections, examples of solved exercises), teaching record, detailed course syllabus, application of e-learning, current information and all other data are available by MOODLE system to all students.