UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION	
Study Program	Mechanical Engineering
Study Module (if applicable)	-
Course Title	Software Development and Programming
Level of Study	☐ Bachelor ☐ Master's ☒ Doctoral
Type of Course	☐ Obligatory ☒ Elective
Semester	☒ Autumn ☐ Spring
Year of Study	II
Number of ECTS Allocated	10
Name of Lecturer/Lecturers	Miroslav M. Mijajlović, Dragan S. Milčić, Dušan S. Stamenković
Teaching Mode	☒ Lectures ☐ Group tutorials ☐ Individual tutorials ☐ Laboratory work ☒ Project work ☒ Seminar ☐ Distance learning ☐ Blended learning ☐ Other

Purpose and Overview (max. 5 sentences)

To transfer subject contents in field of software engineering to students; To enable the students to independently and based on scientific principles develop software by using the methods and tools of software engineering.

Syllabus (brief outline and summary of topics, max. 10 sentences)

1) Introduction: Conceptual definition of software, Software architecture paradigms, Definition of software development,; 2) Principles and models of software development,; 3) Software development methods, Algorithms and problem solving, Decision table, Flow diagram, Structured programming (Nassi - Schneiderman's diagram), Plan of the data flow, Information flow and communications , Structural Analysis (SA) and structural analysis with design technique (SADT), Jackson structured programming (JSP), CASE tools; 4) Procedural programming; 5) Object-oriented programming, Object concept, Class concept, Basic elements of the object model (cocooning, inheritance, polymorphism); 6) Expert systems,; 7) Software quality; 8) Programming languages.

Language of Instruction

☒Serbian (complete course) ☐ English (complete course) ☐ Other _____ (complete course)

☐Serbian with English mentoring ☐Serbian with other mentoring _____

Assessment Methods and Criteria

Pre exam Duties	Points	Final Exam	Points
Activity During Lectures	0	Written Examination	0
Practical Teaching	0	Oral Examination	50
Teaching Colloquia	50	Overall Sum	100

***Final examination mark is formed in accordance with the Institutional documents**