Course Unit Descriptor

Study Programme: nformation Systems Engineering

Course Unit Title: Empirical Software Engineering

Course Unit Code: 12 - I834

Name of Lecturer(s): Mandić Vladimir

Type and Level of Studies: Master Academic Degree

Course Status (compulsory/elective): compulsory

Semester (winter/summer): winter

Language of instruction:english

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated:4

Prerequisites: none

Course Aims:

The objective of course is to acquaint students with challenges, methods and approaches in empirical software engineering.

Learning Outcomes:

Students will gain theoretical knowledge of the various methods used to study complex phenomena that accompany the development of software products, such as designing empirical studies, e.g. experiments or case studies. The course will be of benefit to students who plan to engage in research work in the field of software engineering, as well as future managers of quality in the software industry, which will be trained to use a variety of quantitative and qualitative methods in order to investigate software process

Syllabus:

The course covers the following topics: (1) a brief historical overview of empiricism in software engineering and motivation, (2) empirical software engineering methods through introduction of the relevant papers in the field, (3) a detailed review of qualitative and quantitative methods, (4) introduction to software metrics and measurement processes, and (5) the design of experiments in software engineering. Practical exercises will be designed as a series of experiments, students will apply the empirical methods discussed in class.

Required Reading: Relevant literature in English TBD

Weekly Contact Hours:2	**Lectures:2**	**Practical work:0**

Teaching Methods:

Lectures, laboratory exercises and exams. Lectures will be interactive and it will induced discussion of relevant topics through student presentations of exemplar papers in the field. On lab exercises, students will go through the entire process of designing an experiment, execution, data collection, and at the end of the data analysis and synthesis of the results.

Knowledge Assessment (maximum of 100 points):100

Pre-exam obligations	points	**Final exam**	points
Lecture attendance	10	Examination Assignment	50
Group Assignment	20		
Test	10		
Test	10		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.