Course Unit Descriptor

Study Programme: Computing And Control Engineering

Course Unit Title: Business Process Modeling

Course Unit Code: E2518

Name of Lecturer(s): Ivančević Vladimir

Type and Level of Studies: master

Course Status (compulsory/elective): elective

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: 6

Prerequisites: none

Course Aims:.

Students gain advanced knowledge in the field of software-based business process modeling and service-based software architectures. Adopting knowledge about languages and techniques for business process modeling and implementation of service-based software architectures.

Learning Outcomes:
The acquired knowledge is used in practice, particularly in projects including system specification and development. It is applicable in all problem domains in which it is necessary to create business process models, specify corresponding architectures of complex software systems or optimize business processes.

Syllabus.
The notion, role and characteristics of business processes in organizational systems. Business rules and business rule models. Basic motives and principles of business process modeling. Business process modeling languages and techniques. Petri nets. Business process modeling and execution languages BPMN and BPEL. Pi-calculus. Service-based software architectures. Concepts of Service-Oriented Architecture (SOA). SOA languages. Transformations of BPMN specifications to BPEL specifications and service orchestration. Microservice Architecture. Software environments for business process modeling and specification and implementation of service-based software architectures. Analysis and re-engineering of business processes. Process mining.

Required Reading:
Relevant literature in English, tbd

Weekly Contact Hours: 2	**Lectures: 3**	**Practical work: 0**

Teaching Methods:
Teaching is performed through lectures, exercises (in a computer classroom) and consultations. Through the whole teaching process, intensive communication, problem oriented reasoning, independent study work and active participation of students are constantly fostered. The prerequisite for taking the final exam is to complete the pre-exam assignments by earning at least 30 points.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Attendance			
Computer exercises			
Tests (4x)			