

Study Programme: Biomedical engineering			
Course Unit Title: Microprocessor systems in medicine			
Course Unit Code: BMI103			
Name of Lecturer(s): Lukić Milan, Teodorović Predrag, Rašović Predrag			
Type and Level of Studies: Bachelor			
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: 5			
Prerequisites: none			
Course Aims: The objective of the course is to teach the students modeling, modular design, simulation and implementation of computer hardware and design and testing of application software in high level programming language for intelligent, microprocessor based medical devices			
Learning Outcomes: Student who successfully completes the course will be able to perform the following tasks for a specified, low complexity, microprocessor based medical device: - Design, simulate and implement hardware based on the given specification. - Model, design, simulate and implement applicative software in a high level programming language. - Integrate hardware and software components and test functionality of implemented intelligent medical device			
Syllabus. Design of intelligent, microprocessor and microcontroller based medical devices. Use of software tools in design and simulation of microcomputer systems. Structure of embedded systems software. Design, implementation and testing of applicative system programs. Use of high level programming languages and software tools in design and implementation of microcomputer software. Microcontroller interface with input / output devices used in medicine. Introduction to real time embedded systems. Real examples of embedded systems in medical devices. Communication and networking of microcontrollers with medical instrumentation.			
Required Reading:			
Weekly Contact Hours: 2	Lectures: 3	Practical work: 0	
Teaching Methods: Lectures, auditory exercises, laboratory exercises, consultations.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Attendance			
Computer exercises			
Tests (4x)			

