

Study Programme: Biomedical engineering			
Course Unit Title: Digital control algorithms in biomedicine			
Course Unit Code: BM130A			
Name of Lecturer(s): Jeličić Zoran, Kapetina Mirna, Ivanović Vladimir			
Type and Level of Studies: Bachelor			
Course Status (compulsory/elective): elective			
Semester (winter/ summer): summer			
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 theoretical and practical knowledge about computer control systems and their application in medicine.			
Learning Outcomes: The acquired knowledge is used in solving practical engineering problems and form the basis for future professional courses.			
Syllabus. Introduction to digital control systems, digital control system components, processes of sample and hold, z-transform and discrete transfer function, realization and characteristics of discrete transfer function, state space digital models, digital system analysis, digital system stability, closed-loop systems with digital computer compensation, multiple-input multiple-output digital systems, basic principles of modern methods for design of digital controllers. Medical practice examples.			
Required Reading:			
Weekly Contact Hours: 2	Lectures: 3	Practical work: 0	
Teaching Methods: Lectures, computer practice, laboratory practice. Consultations.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Attendance			
Computer exercises			
Tests (4x)			

