Course Unit Descriptor

Study Programme: Computing And Control Engineering
Course Unit Title: Digital Control Systems
Course Unit Code: AU41
Name of Lecturer(s): Jeličić Zoran, Rapaić Milan, Kapetina Mirna
Type and Level of Studies: bachelor
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: 7
Prerequisites: none
Course Aims:. Students gain theoretical and practical knowledge about computer control systems.
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. Sampling and hold process. Direct digital control. z-transform. Concept of digital state space models. Pulse transfer function. Analysis of digital systems. Digital system stability. Digital control system design: regulators, PID regulators, servo regulators, cancellation controllers, state space regulators. Implementation of digital control algorithms.
Required Reading: Relevant literature in English, tbd

Weekly Contact Hours: 2	**Lectures: 4**	**Practical work: 1**

Teaching Methods:
Lectures, numerical calculation practice, computer practice, laboratory practice. Consultations. The exam is written and oral. The course material can be divided into two colloquia. The oral part of the exam is based on a set of exam questions. Colloquia and tests are valid for two exam periods. Colloquia and exam are written, with the written part being prerequisite for the oral. The final grade is formed on the bases of achievements at the colloquia, homework assignments and the written and oral part of the exam.

Knowledge Assessment (maximum of 100 points):

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