

Study program: Electrical and Computing Engineering – Module: Remote Control			
Type and level of studies: Master studies (second level of studies)			
Course unit: Remote Control			
Teacher in charge: Radojka Krneta			
Language of instruction: English			
ECTS: 6			
Prerequisites: -			
Semester: Winter			
Course unit objective			
<ul style="list-style-type: none"> • Acquiring new theoretical knowledge for remote/networked control in their use in modern control algorithms • Mastering simulation tools, e.g. Matlab, LabVIEW • Gaining skills in using modern control equipment and communication techniques, such as National Instruments development and control equipment in this area. 			
Learning outcomes of Course unit			
After the course, each student is expected to be able to:			
<ul style="list-style-type: none"> • analyze various network based remote control systems and predict different practical realizations • know how to perform state estimation, trajectory generation and trajectory tracking in a remote control system • implement theoretical knowledge and realize a simple real remote controlled system 			
Course unit contents			
<i>Theoretical classes</i>			
This course is planned to provide basic knowledge in a remote control area. At present control applications are much more information-rich and involve network communications, distributed computing and very high levels of decision making. Networks between sensors, actuators and computation have to be developed in such a way so as to provide that inputs/outputs signals may arrive at variable time, not necessarily in sequence. These elements can all represent relatively substantial computations (depending on the application) and are linked to each other through a number of network ports. This course is based on previously acquired knowledge on signal processing, system and control theory. <i>Practical classes</i>			
Laboratory and computer sessions, web discussions via forum and e-mail, case study			
Literature			
<ol style="list-style-type: none"> 1. Gregory. Remote Control, Stephen White 2. John G. Proakis. Dimitris G. Manolakis, Digital signal processing: Principles, algorithms and applications, Prentice-Hall 3. Rappaport, T, Wireless Communications, Principles and Practice. Prentice-Hall, Inc 4. Stallings, W. (1997). Data and Computer Communication. Prentice-Hall, Inc. 5. Stallings, W. (2003). Wireless Communications and Network. Prentice-Hall, Inc 			
Number of active teaching hours			Other classes
Lectures: 2	Practice: 2	Other forms of classes: Mentoring system	
Independent work: Case study			
Teaching methods: consultations, independent individual work			
Examination methods (maximum 100 points)			
Exam prerequisites	No. of points:	Final exam	No. of points:
Student's activity during lectures		oral examination	
Practical classes	20	written examination	30
Seminars/homework	20	
Project	30		
Grading system			
Grade	No. of points	Description	
10	91-100	Excellent	
9	81-90	Exceptionally good	
8	71-80	Very good	
7	61-70	Good	
6	51-60	Passing	
5	less than 50	Failing	