

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Automation of Facilities				
Head of course	Emil Prpić, Lecturer Assistant Goran Salopek				
Study programme	Professional undergraduate study Telematics				
Status of a course	Elective				
Year of study	3.	Semester	V	ECTS credits	5
Teaching plan (L + E + S+ Pr)	2+2+0+0				
Goals of a course					
Introduce students to the practical aspects of building automation, with an emphasis on business and other commercial buildings and apartments and houses.					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
Outcome 7: Describe the development and implementation of communications systems, switching systems, and local and broadband networks. Outcome 8: Design and implement communications and computer networks, as well as network services. Outcome 9: Explain the basic methods of automatic system control and apply them to telematics systems.					
Expected learning outcomes on a level of a course					
<ol style="list-style-type: none"> 1. Learn the basic principles of facility management and the basic elements of energy management technology in building design and construction 2. Apply specific communication protocols in building design and construction, and select the right equipment for a simple project task 3. In a team, wire and connect the KNX hardware elements of a practical problem exercise. 4. In a team, create the assigned KNX program of a practical problem exercise. 					
Content of a course					
<p>Introduction to Facility Management: structures, definitions, functions; basics of building automation; requirements in housing and specified construction; applications; construction and infrastructural solutions of building automation; working groups and managing groups.</p> <p>Technical components of building automation: machine cluster; managing appliances; appliances networking; wired and wireless networking; Homebus- systems and standards (EIB, Lon, EHS, Konnex); remote control techniques; Gateway techniques; Open System Gateway Architecture (OSGi)</p>					
Teaching modes	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
Comments					
Students' obligations					
Scores related to outcomes 3 and 4 are earned solely on laboratory exercises where attendance is required.					
Grading, evaluation and monitoring of students' work continuously during lectures and exams					
Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.					

Continuous check-up:

Outcomes	Interactive lectures	Pre-exam	Laboratory exercises	Threshold	Max
Outcome 1	20%	20%		10%	20%
Outcome 2	40%	25%		20%	40%
Outcome 3			10%	5%	10%
Outcome 4			30%	15%	30%
Percentage of ECTS	3	2,25	2		5
Total	60%	45%	40%		100%

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Exam term:

Outcomes	Written exam	Oral exam	Max
Outcome 1	20%		20%
Outcome 2	15%		15%
Outcome 3			
Outcome 4		10%	10%
Outcome 5		10%	10%
Percentage of ECTS	1,75	1	2,75
Total	35%	20%	55 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Grading:

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

Obligatory literature

1. Authorized Lectures
2. KNX: Priručnik za upravljanje kućama i zgradama - Osnovna načela, KNX.hr udruga, 1. izdanje (5. izdanje izvornika), Split, 2011.

Additional literature

1. LonWorks Installation Handbook, LonMark International, 3. izdanje, 2010

