

COURSE DESCRIPTION CARD

Faculty of Civil Engineering and Environmental Sciences										
Field of study								Degree level and programme type	BSc.	
Specialization/ diploma path								Study profile	Academic profile	
Course name	Air conditioning and Ventilation (HVAC 2)							Course code	IS-FCEE-00108S	
								Course type	Erasmus	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	Summer	
	15			30				No. of ECTS credits	5	
Entry requirements	Fluid mechanics, heat transfer, thermodynamics									
Course objectives	Advance knowledge about types of ventilation elements. Ability to calculate and select main elements. Knowledge about ventilation types, their advantages and disadvantages. Ability to create a mechanical ventilation system design for a small house.									
Course content	<u>Lecture:</u> Heat gains. Types of ventilation. Schemas of ventilation systems. Advantages and disadvantages of selected HVAC systems. Main elements. <u>Project:</u> Heat gains. Types of ventilation. Schemas of ventilation systems. Advantages and disadvantages of selected HVAC systems. Main elements.									
Teaching methods	multimedia presentation (lectures), design of a heating system (project)									
Assessment method	e.g.: lecture – exam; project – project completion, presentation and discussion									
Symbol of learning outcome	Learning outcomes								Reference to the learning outcomes for the field of study	
LO1	Student has an elementary knowledge of the materials used in ventilation and air-conditioning (dusts, units etc.).									
LO2	Student knows the rules of technical drawing necessary for reading and writing architectural data needed for system designs, as well as knows the rules for making a sanitary drawing using CAD.									
LO3	Student knows standards, specific rules and law connected with calculations of cool load and ventilation air flow, system designs and selection of necessary elements of a system.									
LO4	Student is able to obtain information from the literature, databases about different types installations etc. Student can compare									

	knowledge from different sources, interpret data, make conclusions, formulate and justify own opinions.	
L05	Student is able to work individually and in a team during the laboratory course and can estimate the time needed for the study.	
L06	Student can make the installation design, prepare the technical description and explain the scope of the project.	
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
L01	evaluating the student's reports, exam, design presentation	L, P
L02	design form	P
L03	design form and presentation, exam	P, L
L04	exam, design form and presentation	L, P
L05	evaluating the student's work	P
L06	discussion of the student's design	P
Student workload (in hours)		No. of hours
Calculation	lecture attendance	15
	participation in classes,	30
	preparation for classes,	30
	working on projects	45
	implementation of project tasks	20
	TOTAL:	140
Quantitative indicators		HOURS No. of ECTS credits
Student workload – activities that require direct teacher participation		45 1,8
Student workload – practical activities		125 5
Basic references	Krawczyk D.A. (Ed.) Buildings 2020+.Architecture, Constructions and Installations. Publishing House of BUT, Białystok 2019. Refrigeration and air conditioning technology / William C. Whitman [et al.]. Delmar Publ. ; Andover : Cengage Learning, 2013.	
Supplementary references	HANDBOOK OF AIR CONDITIONING AND REFRIGERATION Shan K. Wan, 2001, The McGraw-Hill Companies (PDF available at http://www.gmpua.com)	
Organisational unit conducting the course	Heating, Ventilation, Air Conditioning Department	Date of issuing the programme
Author of the programme	Assoc. Prof. Dorota Anna Krawczyk, DSc, PhD, Eng.	12.2019

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar