

COURSE DESCRIPTION CARD

Faculty of Civil Engineering and Environmental Sciences									
Field of study							Degree level and programme type		
Specialization/ diploma path							Study profile	academic profile	
Course name	Computational and statistical methods						Course code	IS-FCEE-00052S	
							Course type	Erasmus	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	Summer
					30			No. of ECTS credits	4
Entry requirements	Information technology, Basic of statistics, Statistics and Modelling in Environmental Sciences								
Course objectives	To acquaint students with the basics of mathematical statistics and its various methods used in the study of environmental engineering using computer programs.								
Course content	Discussion of the basic notions of the mathematical statistics. Empirical distribution. Random variable. Parameters of distribution. Elementary statistics. Initial data analysis. Use of „Microsoft Excel” for computations and statistical analysis of data. Distribution fitting. Basic parametric and nonparametric tests. Regression. Correlation analysis. The statistical analysis using of „Jasp”. Making the project concerning the statistical analysis of the environmental measurements using of the computer programs “Microsoft Excel” and “Jasp”.								
Teaching methods	specialization workshop								
Assessment method	presentation and discussion of the project, corrections								
Symbol of learning outcome	Learning outcomes						Reference to the learning outcomes for the field of study		
LO1	Student: uses basic statistical data analysis methods						K_W13, K_W08		
LO2	carries out basic calculations and mathematical analysis						K_W01, K_U07, K_U10,		
LO3	interprets the results of model tests						K_U01, K_U03, KU_06, K_U11		
LO4	designs and presents statistical methods						K_U08, K_U16, K_U21		
LO5	can work in a team						K_U02, K_K03, K_K07		
Symbol of learning outcome	Methods of assessing the learning outcomes						Type of tuition during which the outcome is assessed		
LO1	test for classes						SW		

L02	test for classes	SW	
L03	test for classes	SW	
L04	test for classes and observation of work activities during classes	SW	
L05	discussion on reports and observation of work activities during classes	SW	
Student workload (in hours)		No. of hours	
Calculation	participation in classes, laboratory classes, etc.	15 x 2h =30	
	work on projects, reports, etc.	12 x 2h =24	
	participation in student-teacher sessions related to the class / seminar / project	12 x 1h =12	
	implementation of project tasks	10 x 1h =10	
	preparation for and participation in exams/tests	12 x 1h =12	
	TOTAL:	88	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		52	2
Student workload – practical activities		64	2
Basic references	1. Webster Richard, Oliver Margaret. 2007. Geostatistics for environmental scientists. John Wiley and Sons. 2. Ayyub B. M., McCuen R. H. 2003. Probability, statistics and reliability for engineers and scientists. Boca Raton (Fla.): Chapman & Hall/CRC 3. Preben Blæsild, Jørgen Granfeldt. 2003. Statistics with applications in biology and geology. Boca Raton (Fla.): Chapman & Hall/CRC.		
Supplementary references	1. Hill T. Lewicki P. 2005. Statistics: Methods and Applications. StatSoft, Inc. 2. Scheaffer R. L., Mulekar M. S., McClave J. T. 2011. Probability and statistics for engineers. Boston. Brooks/Cole: Cengage Learning. 3. Electronic Statistics Textbook. 2012. StatSoft. Online: http://www.statsoft.com/textbook.		
Organisational unit conducting the course	Department of Agri-Food Engineering and Environmental Management	Date of issuing the programme	
Author of the programme	Sławomir Roj-Rojewski DSc, Eng	16.11.2019	

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