

Module card

I. GENERAL INFORMATION									
WITELON COLLEGIUM STATE UNIVERSITY Faculty of Technical and Economic Sciences									
Field of study:		Power engineering							
Form of study:		Erasmus							
Module title:		ME.2 Engineering Statistics							
Module type:		Compulsory field of study							
Language of lecture:		English							
Year of study:		1	Forms of teaching including number of teaching hours:						
Semester (winter/summer):		winter	Lectures	Classes	Laboratory	Project	Workshop	Seminar	Other
Total number of ECTS credits:		5	15	15	-	-	-	-	-
Form of completion:		Pass with grade							
Prerequisites:									
II. LEARNING OBJECTIVES									
Learning objectives:									
Objective 1: Familiarisation with the basic concepts and methods of probability theory used in mathematical statistics. Objective 2: An introduction to mathematical statistics as a tool for describing mass phenomena. Objective 3: A presentation of the basic methods used for the statistical analysis of empirical data and the principles of statistical inference.									
IV. PROGRAMME CONTENT									
Content of the programme (topics of classes, presented with a breakdown into individual forms of classes with the indication of the number of hours needed for their realization)									
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Code	Course topics in theory							Number of hours	
S1	Introduction to probability theory.							2	
S2	The concept of discrete and continuous probability distributions.							2	
S3	Random variables and distribution parameters.							2	
S4	Overview of selected probability distributions.							3	
S5	The law of large numbers and a central limit theorem.							2	
S6	Introduction to mathematical statistics: population, variable (characteristic), statistic.							2	
S7	Introduction to statistical analysis: estimation, elements of statistical hypothesis testing.							2	
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Code	Course topics in practice							Number of hours	
L1	Introduction to probability theory.							2	
L2	The concept of discrete and continuous probability distributions.							2	
L3	Random variables and distribution parameters.							2	
L4	Overview of selected probability distributions.							3	
L5	The law of large numbers and a central limit theorem.							2	
L6	Introduction to mathematical statistics: population, variable (characteristic), statistic.							2	
L7	Introduction to statistical analysis: estimation, elements of statistical hypothesis testing.							2	
VIII. RECOMMENDED LITERATURE									
Basic sources: 1. Sheldon M. Ross, <i>Introduction to Probability and Statistics for Engineers and Scientists</i> , 6th ed., Elsevier, 2020. 2. John Haigh. <i>Probability: A Very Short Introduction</i> . Oxford University Press, 2012.									

Additional sources:

1. Instructor-developed materials.