

## Module card

I. GENERAL INFORMATION								
<b>WITELON COLLEGIUM STATE UNIVERSITY</b> Faculty of Technical and Economic Sciences								
<b>Field of study:</b>		Power engineering						
<b>Form of study:</b>		Erasmus						
<b>Module title:</b>		<b>ME.2 Engineering Statistics</b>						
<b>Module type:</b>		Compulsory field of study						
<b>Language of lecture:</b>		English						
<b>Year of study:</b>	1	<b>Forms of teaching including number of teaching hours:</b>						
<b>Semester (winter/summer):</b>	winter	Lectures	Classes	Laboratory	Project	Workshop	Seminar	Other
<b>Total number of ECTS credits:</b>	5	15	15	-	-	-	-	-
<b>Form of completion:</b>		Pass with grade						
<b>Prerequisites:</b>								
II. LEARNING OBJECTIVES								
<b>Learning objectives:</b>								
<b>Objective 1:</b> Familiarisation with the basic concepts and methods of probability theory used in mathematical statistics. <b>Objective 2:</b> An introduction to mathematical statistics as a tool for describing mass phenomena. <b>Objective 3:</b> A presentation of the basic methods used for the statistical analysis of empirical data and the principles of statistical inference.								
IV. PROGRAMME CONTENT								
<b>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)</b>								
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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								
<b>Basic sources:</b> 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.