

Course code																																	
Type and description	Background Course																																
ECTS credit	2																																
Course name	Statistics for Control, Electronic and Electrical Engineering																																
Course name in Polish	Statystyka dla automatyki, elektroniki i elektrotechniki																																
Language of instruction	English																																
Course level	8 PRK																																
Course coordinator	dr hab. inż. Wojciech Tylman, prof. uczelni																																
Course instructors	dr hab. inż. Wojciech Tylman, prof. uczelni																																
Delivery methods and course duration	<table><tr><th></th><th>Lecture</th><th>Tutorials</th><th>Laboratory</th><th>Project</th><th>Seminar</th><th>Other</th><th>Total of teaching hours during semester</th></tr><tr><td>Contact hours</td><td>8</td><td></td><td></td><td>7</td><td>0</td><td>0</td><td>15</td></tr><tr><td>E-learning</td><td>No</td><td>No</td><td>No</td><td>No</td><td>No</td><td>No</td><td></td></tr><tr><td>Assessment criteria (weightage)</td><td>0</td><td></td><td></td><td>1,00</td><td></td><td></td><td></td></tr></table>		Lecture	Tutorials	Laboratory	Project	Seminar	Other	Total of teaching hours during semester	Contact hours	8			7	0	0	15	E-learning	No	No	No	No	No	No		Assessment criteria (weightage)	0			1,00			
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Course objective	1. To make student acquainted with basic concepts and tools of descriptive statistics, 2. To make student acquainted with basic concepts and tools of statistical inference, 3. To make students acquainted with distributions commonly used in statistical inference, 4. To make students conscious of problems, errors and pitfalls associated with statistic.																																
Learning outcomes	After completing the course the student: 1. can use descriptive statistics to summarise a sample – U1, 2. knows and understands distributions commonly used in statistics, their role and means of computation - W3, 3. can use statistical inference in parameter estimation, hypothesis testing, confidence interval computation – U1, 4. can analyse relations between two populations – U1, 5. can employ statistics in problems related to research discipline and critically analyse results reported by others - W4, K1, K2.																																
Assessment methods	1-5 Series of individual projects employing concepts presented during lecture.																																
Prerequisites	Basic knowledge of mathematics, including probability theory.																																
Course content with delivery methods	LECTURE 1. Origins and branches of statistics, 2. Collecting data for statistical purposes, 3. Measures used to describe data sets: central tendency, variability, shape, 4. Sampling distributions, 5. Normal and t-distribution, 6. Chi-squared distribution, 7. Statistical hypothesis tests, 8. Confidence intervals, 9. Model-selection tests, 10. Correlation and regression,																																

	11. Independence tests, 12. t-Student test, 13. ANOVA, 14. Non-parametric methods. PROJECT 1. Describe example data set through descriptive statistics, 2. Using example data, compute parameters of a sampling distribution, 3. Based on the sampling distribution, construct hypothesis test and compute confidence intervals, 4. Determine statistical relationships between two example data sets.
Basic reference materials	1. William Navidi: Statistics for Engineers and Scientists, McGraw-Hill Education, 2014.
Other reference materials	1. Sarah Boslaugh: Statistics in a Nutshell, O'Reilly Media, 2012.
Average student workload outside classroom	35 h
Comments	
Last update	