

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Mathematical statistics		Code 1010614151010344571
Field of study Mechanical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 3 / 5
Elective path/specialty Food Industry Machines and Refrigeration	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 14 Classes: 6 Laboratory: - Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art		ECTS distribution (number and %)
Responsible for subject / lecturer: dr Maria Iwińska email: maria.iwinska@put.poznan.pl tel. 61665-2349 Wydział Elektryczny ul. Piotrowo 3, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student has a knowledge of combinatorics and probability calculus at the secondary school level. Student has a basic knowledge of Mathematics 1.
2	Skills	Student is able to think logically. Student is able to use a calculator.
3	Social competencies	Student understands the necessity of learning and usefulness of acquired knowledge.
Assumptions and objectives of the course: The aim of this course is to introduce students to selected topics of probability theory and mathematical statistics. Students acquire skills to apply probabilistic and statistical methods to solve technical problems.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student knows the basic probability distributions. Student knows the basic methods of statistical inference. - [K1A_W01]		
Skills:		
1. Student is able to apply theoretical probability distributions. Student is able to apply the methods of mathematical statistics in engineering practice. - [K1A_U01]		
Social competencies:		
1. Student understands the need for lifelong learning. Student understands the usefulness of statistical methods. - [K1A_K01]		
Assessment methods of study outcomes		
Written exam. Classes-written test (1 or 2).		
Course description		

Probability system. Conditional probability. Univariate probability distributions. Basic concepts of descriptive statistics. Estimation. Confidence intervals. Hypothesis verification. Bivariate probability distributions. Correlation analysis. Regression analysis.		
Basic bibliography: 1. Bobrowski D., Maćkowiak-Łybacka K., Wybrane metody wnioskowania statystycznego, Wydawnictwo Politechniki Poznańskiej, Poznań. 2. Jasiulewicz H., Kordecki W., Rachunek prawdopodobieństwa i statystyka matematyczna. Przykłady i zadania, Oficyna Wydawnicza GiS, Wrocław. 3. Kordecki W., Rachunek prawdopodobieństwa i statystyka matematyczna. Definicje, twierdzenia, wzory, Oficyna Wydawnicza GiS, Wrocław.		
Additional bibliography: 1. Bobrowski D., Probabilistyka w zastosowaniach technicznych, WNT, Warszawa, 1986. 2. Krysicki W., Bartos J., Dyczka W., Królikowska K., Wasilewski M., Rachunek prawdopodobieństwa i statystyka matematyczna w zadaniach, część I i II, PWN, Warszawa. 3. Plucińska A., Pluciński E., Probabilistyka, WNT, Warszawa.		
Result of average student's workload		
Activity	Time (working hours)	
Student's workload		
Source of workload	hours	ECTS
Total workload	90	2
Contact hours	45	0
Practical activities	15	0