POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Statistics

Course

Field of study	Year/Semester
Logistics	1 /2
Area of study (specialization)	Profile of study
	general academic
Level of study	Course offered in
First-cycle studies	Polish
Form of study	Requirements
part-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
10		
Tutorials	Projects/seminars	
10		

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

Ph.D., Eng., Barbara Popowska

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Faculty of Automatic Control, Robotics and Electrical Engineering

ul. Piotrowo 3A, 61-138 Poznań

Responsible for the course/lecturer:

Prerequisites

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The student starting this subject should have basic knowledge of mathematical logic, set theory, number series, and differential and integral calculus of functions of one variable

Course objective

The aim of the course is to provide students with basic knowledge of probability and mathematical statistics necessary to correctly solve problems with random events as well as to put and verify statistical hypotheses in logistic issues using appropriately selected tests. Developing students' skills in building scenarios for solving practical problems using the known definitions, properties and theorems.

Course-related learning outcomes

Knowledge

Knows the basic issues of mathematics, probability and statistics in the study of the structure of economic and logistic phenomena. [P6S_WG_04]

Skills

Is able to choose the right tools and methods to solve the problem within logistics and supply chain management, and to use them effectively. [P6S_UO_02]

Is able to identify changes in requirements, standards, regulations, technical progress and reality of the labor market, and based on them determine the needs of supplementing knowledge. [P6S_UU_01]

Social competences

Is aware of initiating activities related to the formulation and transfer of information and cooperation in society in the field of logistics. [P6S_KO_02]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:

Assessment of knowledge and skills shown on the written test in the form of a test. Credit from 50%. Perception control during lectures.

Auditorium classes:

Final evaluation work in the form of a statistical project containing all the discussed problems. Passing exercises from 50%.

Programme content

The presented scope of statistics as part of the lecture includes the following theoretical issues:

1. Discrete one-dimensional random variables.

2. One-dimensional continuous random variables.

3. Selected discrete and continuous distributions. Functional and numerical characteristics.

3. Basic theorems and distributions applicable in statistics.

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4. Basics of statistics. Descriptive Statistics.

5. Point and interval estimation of distribution parameters of the examined features.

6. Theory of hypothesis verification.

Issues discussed during the exercises:

1. Discrete and continuous random variables. Functional and numerical characteristics.

2. Selected discrete distributions.

3. Selected continuous distributions.

4. Interval estimation.

5. Verification of parametric hypotheses.

Teaching methods

Lectures with shared multimedia presentations of the theory supplemented by practical examples solved on the board. Lectures conducted in an interactive way with the formulation of questions by both the lecturer and students.

Auditorium classes consist of students solving open practical problems by students as well as discussion and formulation of contextual conclusions. The activity of students during classes is taken into account when issuing the final grade. Students receive an electronic version of the set of tasks prepared by the lecturer in advance.

Bibliography

Basic

1. Krysicki W., Bartos J., Dyczka W., Królikowska K., Wasilewski M., Rachunek prawdopodobieństwa i statystyka matematyczna w zadaniach, cz. I, II. Wydawnictwo PWN, Warszawa.

2. Bobrowski D., Łybacka K., Wybrane metody wnioskowania statystycznego. Wydawnictwo Politechniki Poznańskiej, Poznań.

3. Aczel Amir D., Statystyka w zarządzaniu. Wydawnictwo Naukowe PWN, Warszawa.

Additional

1. Bobrowski D., Probabilistyka w zastosowaniach technicznych. WNT, Warszawa.

2. Devore Jay L., Probability and Statistics for Engineering and the Sciences.

3. Andrzejczak K., Statystyka elementarna z wykorzystaniem systemu Statgraphics. Wyd. PP, Poznań.

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Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for tutorials, preparation for tests, mastering the theory) [1]	45	1,5

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[1] delete or add other activities as appropriate