Poznan University of Technology
Faculty of Engineering Management

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STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Descriptive Statistics**		Code **101110511101010341935**	
Field of study **Safety Engineering - Part-time studies - Second-**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 1**	
Elective path/specialty **Ergonomics and Work Safety**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**	
Cycle of study: **Second-cycle studies**		Form of study (full-time,part-time) **part-time**	

No. of hours				No. of credits **4**
Lecture: **10**	Classes: **12**	Laboratory: **-**	Project/seminars: **-**	

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:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student knows basic notions in calculus.
2	**Skills**	Student can operate a calculator.
3	**Social competencies**	Student recognizes the necessity in deepening his knowledge.

Assumptions and objectives of the course:

to acquire basic descriptive measures and develop the ability to use these measures to solve application problems.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Student knows methods of sampling. - [K2A_W02]

2. Student knows measures of association between two variables. - [K2A_W02]

3. Student knows components of a time series and index numbers. - [K2A_W02]

Skills:

1. Student is able to interpret the information from a sample and to draw conclusions. - [K2A_U8]

Social competencies:

1. Student is able to argue the necessity of continuous learning. - [K2A_K1]

Assessment methods of study outcomes

Lecture. Valuation of knowledge of general quantitative methods of mass phenomena analysis based on student's project work (discussion).

Practical Lessons:
1. Check the ability to perform simple statistical analysis (project work),
2. Valuation of activity during lessons.

Course description

1. Preliminaries(populations, observations and samples, statistical characteristics).

2. Statistical research stages (aim, subject and space of statistical research, statistical observations and samples, statistical series and their types, statistical tables, graphical presentation of observation results).

3. Numerical characteristics of the structure:

3.1. Measures of central tendency .

3.2. Measures of dispersion.

3.3. Measures of skewness.

3.4. Measures of concentrations.

4. Measures of correlation for two variables. Regression analysis (linear regression model).

5. Analysis of growth dynamics (time series, absolute increase, relative increase, fixed base index, chain index, aggregative index). Decomposition of the time series: trend, average level of phenomena, cyclic variation, seasonal variation, acidental variation. Estimate of degree of adjusting of linear trend model for empirical data.

Applied methods of education.

Lecture:

1. Interactive lecture with questions to students group

or to specific students indicated,

2. The theory presented in connection with the current knowledge of students,

3. Student activity is taken into account during the course of the assessment.

Practical lessons:

1. Solve sample tasks on the board,

2. Detailed review of task solutions and discussions and comments.

3. Initiate discussion on solutions.

Basic bibliography:

1. E. Wasilewska, Statystyka opisowa od podstaw. Podręcznik z zadaniami, Wydawnictwo SGGW, Warszawa 2009

2. W. Starzyńska, Statystyka praktyczna, PWN, 2017

Additional bibliography:

1. W. Kordecki, Rachunek prawdopodobieństwa i statystyka matematyczna, GiS, 2003

2. M. Iwińska, B. Popowska, M. Szymkowiak, Statystyka opisowa, Wydawnictwo Politechniki Poznańskiej, Poznań, 2011

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	10
2. Participation in exercises	12
3. Preparation for exercises	28
4. Preparation of project work and discussion	30

Student's workload

Source of workload	hours	ECTS
Total workload	80	4
Contact hours	24	1
Practical activities	28	1