STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Statistics**		Code **1011102311010340139**

Field of study **Management - Full-time studies - Second-cycle**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 1**

Elective path/specialty **Enterprise Management**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**

Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours				No. of credits **3**
Lecture: **15**	Classes: **15**	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 **social sciences** **Economics**	ECTS distribution (number and %**)** **3 100%** **3 100%**

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 and use proposed literature.
3	**Social competencies**	Student recognizes the necessity in deepening his knowledge. Student is conscious to operate in rational way.

Assumptions and objectives of the course:

Acquiring the skills of using proper statistical methods and tools to data analysis.

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

Knowledge:

1. Student knows concepts of Descriptive Statistics - [K2A_W12]

2. Student knows methods of univariate analysis - [K2A_W12]

3. Student knows methods of correlation and regression analysis - [K2A_W12]

4. Student knows methods of time series analysis - [K2A_W12]

5. Zna podstawowe metody, techniki, narzędzia i materiały stosowane przy rozwiązywaniu prostych zadań inżynierskich z zakresu budowy i eksploatacji maszyn - [K04-InzA_W02]

6. Ma podstawową wiedzę niezbędną do rozumienia pozatechnicznych uwarunkowań działalności inżynierskiej; zna podstawowe zasady bezpieczeństwa i higieny pracy obowiązujące w przemyśle budowy maszyn - [K04-InzA_W03]

Skills:

1. Student is able to analyze and interpret data - [K2A_U02]

2. Student is able to apply statistical methods and tools   - [K2A_U03]

3. Student can use methods of statistical analysis for solving engineering management problems   - [K1A_U04]

4. Potrafi planować i przeprowadzać eksperymenty, w tym pomiary i symulacje komputerowe, interpretować uzyskane wyniki i wyciągać wnioski   - [K01-InzA_U1]

5. Potrafi wykorzystać do formułowania i rozwiązywania zadań inżynierskich metody analityczne, symulacyjne oraz eksperymentalne - [K01-InzA_U2]

Social competencies:

1. Student recognizes reasons of statistical data analysis - [K1A_K01]

2. Student is able to co-operate and works in a group - [K2A_K02]

3. Student correctly identifies and solves dilemmas concerning his education - [K2A_K03]

Assessment methods of study outcomes

Forming score:

a)   classes: on the basis of written tests, oral answers, solving exemplary tasks;

b)   lectures: on the basis of oral answers to questions about learned theoretical knowledge and solving practical examples.

Summary score:

a)   classes: the average points obtained by the written tests or by the correction test - test of total material.

Course description

1.   Basic concepts of Descriptive Statistics.

2.   Graphical data presentation.

3.   Univariate Analysis (measures of central tendency, variability, skewness and concentration).

4.   Correlation analysis.

5.   Regression analysis.

6.   Time series analysis.

Basic bibliography:

1. K.Andrzejczak Statystyka elementarna z wykorzystaniem systemu STATGRAPHICS WPP Poznań 1997

2. J.T.Mc Clave, F.H. Dietrich Statistics Collier Macmillan Publishers London 1988

3. R. Johnson Elementary Statistics Duxbury Press Boston 1984

4. W.Krysicki, J.Bartos, W.Dyczka, K.Królikowska, M.Wasilewski Rachunek prawdopodobieństwa i statystyka matematyczna w zadaniach, cz.I i II PWN Poznań 1997

5. K.Andrzejczak, Statystyka elementarna z wykorzystaniem systemu STATGRAPHICS, WPP, Poznań 1997

6. J.T.Mc Clave, F.H. Dietrich, Statistics, Collier Macmillan Publishers, London 1988

7. W.Krysicki, J.Bartos, W.Dyczka, K.Królikowska, M.Wasilewski, Rachunek prawdopodobieństwa i statystyka matematyczna w zadaniach, cz.I i II, PWN, Poznań 1997

Additional bibliography:

1. R. Johnson, Elementary Statistics, Duxbury Press, Boston 1984

Result of average student's workload

Activity	Time (working hours)
1. Lectures and classes participation.	45
2. Consultation with the lecturer.	5
3. Homework preparation.	30
4. Test preparation.	15
5. Correction test participation and test results discussion.	5

Student's workload

Source of workload	hours	ECTS
Total workload	100	3
Contact hours	55	2
Practical activities	60	2