

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Pro quality Statistics Applications		Code 1011102311011125285
Field of study Management - Full-time studies - Second-cycle	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 1
Elective path/specialty Marketing and Company Resources	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 15 Classes: 15 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 social sciences Economics		ECTS distribution (number and %) 2 100% 2 100%
Responsible for subject / lecturer: dr inż. Małgorzata Jasiulewicz-Kaczmarek email: malgorzata.jasiulewicz-kaczmarek@put.poznan.pl tel. 616653364 Faculty of Engineering Management ul. Strzelecka 11 60-965 Poznań		Responsible for subject / lecturer: dr inż. Agnieszka Misztal email: agnieszka.misztal@put.poznan.pl tel. 616653437 Faculty of Engineering Management ul. Strzelecka 11 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student defines and describes the basic concepts of descriptive statistics.
2	Skills	The student is able to interpret and describe the insights and observations. The student can conclude.
3	Social competencies	The student is aware of the importance of quality for its addressees and creators of its level.
Assumptions and objectives of the course: Transferring knowledge and allowing the acquisition of skills relating to the application of statistical methods and benefits resulting from them.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. The student knows the basic concepts regarding the statistical pro quality applications - [K2A_W01] 2. The student knows the basic rules and procedures of the statistical research regarding quality supply and/or products - [K2A_W01] 3. The student knows the basic rules and procedures for the statistical examination of production processes - [K2A_W01] 4. The student knows the status of normalization connected with the use of statistical methods in relation to the pro quality activities in enterprises - [K2A_W12]		
Skills:		
1. The student is able to use the descriptive statistics for analysis e.g. customer requirements in specific groups of products at the stage of the project, in the area of customer's satisfaction with the product, etc. - [K2A_U02, K2A_U06] 2. The student is able to make decisions on the basis of the facts, that means on the results of data analysis - [K2A_U02, K2A_U06] 3. The student is able to manage a company in terms of quality by easiness to associate technical issues with the quality and economic ones - [K2A_U02, K2A_U06] 4. The student is able to schedule inspections and verify, on the basis of population size and fixed border quality - [K2A_U02, K2A_U06] 5. The student is able to work with the standards related to statistical checks - [K2A_U02, K2A_U06] 6. The student has the ability to control the process based on the results of the control cards analysis - [K2A_U02, K2A_U06]		

Social competencies:
1. The student is aware of the importance of applying statistical methods - [K2A_K03, S2A_K06]
2. The student is aware of the results of statistical applications in an enterprise - [K2A_K03, S2A_K06]
3. The student is focused on the use of statistical methods for conscious quality improvement in an enterprise - [K2A_K03, S2A_K06]

Assessment methods of study outcomes
Formative assessment: Classes: current evaluation of the tasks performed during classes Lectures: evaluation of participation in discussions on the material discussed in previous lectures.
Collective assessment: Classes: test- credits based on classes will take place in 14-15 week semester Lectures: written test in 14-15 week semester (open questions) from the content presented during lectures.

Course description
Basic concepts of statistical pro quality applications. The use of statistics in quality management. Capabilities and examples of the use of descriptive statistics (data grouping, series distribution and histograms, and methods of data presentation). The statistical research regarding quality supply and/or products. Control, measurement and verification. Sampling, sample distribution and sampling methods. Plans for 1-, 2-, multi-step tests. Statistical control of inbox. Statistical examination of production processes. Statistical process control of SPC. Analysis and assessment of process suitability (the control card X-R, the control card of defective p, control card (c).

Basic bibliography:
1. Hamrol A., Zarządzanie jakością z przykładami (Quality management with examples), Wydawnictwo Naukowe PWN, Warszawa, 2008
2. Olejnik T., Wieczorek R., Kontrola i sterowanie jakością (Inspection and quality control), PWN, Warszawa, 1982
3. Konarzewska-Gubała E., Zarządzanie przez jakość. Koncepcje, metody, studia przypadków (Management by quality. Concepts, methods, case studies), WAE, Wrocław, 2003
4. Koronacki J., Thomson J., Statystyczne sterowanie procesem (Statistical process control), PWN, Warszawa, 1998
5. Myszewski J., Zarządzanie zmiennością. Systemowe spojrzenie na metody statystyczne w zarządzaniu jakością (Systemic perspective on statistical methods in quality management), Instytut Organizacji i Zarządzania w Przemysle &#38;#38;#38;#34;ORGMA&#38;#38;#38;#34;., Warszawa, 1998

Additional bibliography:
1. Koronacki J., Thomson J., Nieckuła J., Techniki zarządzania jakością od Shewarta do metody Six Sigma (Techniques of quality management), Wydawnictwo EXIT, Warszawa, 2005
2. Czasopismo Problemy jakości (Problems of quality), Wyd. Sigma-Not
3. Aczel A. D., Statystyka w zarządzaniu (Statistics in management), Wydawnictwo naukowe PWN, Warszawa, 2000
4. Wolniak R., Skotnicka B., Metody i narzędzia zarządzania jakością. Teoria (Methods and tools for quality management. The theory), Wydawnictwo Politechniki Śląskiej, 2007
5. Skrzypek E. (red.), Metody i narzędzia doskonalenia zarządzania przedsiębiorstwem (Methods and tools for improving enterprise management), Wyd. UMCS, Lublin 2001

Result of average student's workload

Activity	Time (working hours)
1. Lectures	15
2. Classes	15
3. Final credits	2
4. Discussion of results	2

Student's workload		
Source of workload	hours	ECTS
Total workload	34	2
Contact hours	19	1
Practical activities	15	1