

COURSE OFFERED

Name of the course	Polish	Analiza statystyczna danych
	English	Statistical analysis of data

1. LOCATION OF THE COURSE OF STUDY WITHIN THE EDUCATION SYSTEM

1.1. Section¹	Section of Medical and Health Sciences
1.2. Discipline²	Medical Sciences, Health Sciences
1.3. Type of education	Stacjonarna
1.4. Level of education	Doctoral School
1.5. Person preparing the course description	Dr hab. Aldona Kubala-Kukuś, prof. UJK
1.6. Contact	aldona.kubala-kukus@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Type of course³	General courses
2.2. Language of the course	English

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Type of classes⁴	Lecture, Exercises
3.2. The number of hours⁵	Lecture 10 h, Exercises 10 h
3.3. Location of classes	Classes in the UJK teaching room
3.4. Type of assessment	Pass (Lecture), Pass with grade (Exercises)
3.5. Didactic methods	Traditional lecture, problem-based lecture, problem-based method, situational method, discussion, project
3.6. Literature	basic S. H. Saneii , H. Doosti, Practical Biostatistics for Medical and Health Sciences, Springer A. Stanis, Przystępny kurs statystyki: z zastosowaniem STATISTICA PL na przykładach z medycyny. T. 1-3, Kraków StatSoft, 2007. M. Rabiej, Statystyka z programem Statistica, Helion, 2012. Analiza danych w programie Statistica – przegląd, Kraków, StatSoft Polska, 2011.
	supplementary A. Petrie, C. Sabin, Medical Statistics at a Glance, Wiley-Blackwell A. Petrie, C. Sabin, Statystyka medyczna w zarysie, Wydawnictwo Lekarskie PZWL, Warszawa 2006. J. A. Moczko, G. H. Bręborowicz, R. Tadeusiewicz, Statystyka w

¹ Section of Humanities; Social Sciences, Section of Exact and Natural Sciences, Section of Medical and Health Sciences, Section of Arts.

² History, Linguistics, Literary Studies, Medical Sciences, Health Sciences, Political and Administrative Sciences, Legal Sciences, Security Sciences, Pedagogy, Communication and Media Studies, Management and Quality Studies, Biological Sciences, Chemical Sciences, Physical Sciences, Earth and related Environmental Sciences, Visual Arts and Artwork Conservation, Musical Arts.

³ General courses, domain specific subjects in the section, disciplinary subjects in the sections, specialized subjects in the discipline.

⁴ Classes, lecture, seminar.

⁵ Consistent with the education program at the Doctoral School
Jan Kochanowski University in Kielce.

		badaniach medycznych, Springer PWN, Warszawa 1998. W. Jędrychowski, A. Penar, Statystyczna analiza wyników badań naukowych w medycynie i biologii, Wydawnictwo UJ, Kraków 2000.
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4. OBJECTIVES, SYLLABUS CONTENT AND INTENDEND LEARNING OUTCOMES

4.1. Course objectives (including the form of classes) Lecture C1. Presentation of selected methods of statistical description and inference. C2. Developing skills in the use of statistical methods in medical and health sciences applications. Exercises C1. Presentation of selected methods of statistical description and inference. C2. Developing skills in the use of statistical methods in medical and health sciences applications.		
4.2 Syllabus content Lecture Basic concepts of statistics. Types of statistical methods in scientific research. Types of variables. Population and sample. Sample selection. Statistical features and their types. The concept of statistical feature distribution. Point and interval estimation. Statistical hypotheses. General principles of statistical hypothesis testing. Type I and II errors. Power of statistical tests. Basic data operations (filtering, sorting, data export). Statistical description - selecting, determining, and interpreting statistical measures, graphical presentation of data appropriate to their type and measurement scale. Assessing the normality of distribution using graphical methods and formal statistical tests. Testing hypotheses about parameters of one or two populations. Student's t-tests. Using parametric and nonparametric tests. Testing the goodness of fit of distributions. Testing the independence of features. Statistical inference in correlation and regression analysis. Examples of the application of analysis of variance. Post-hoc tests. Exercises Practical examples of topics discussed: Basic concepts in statistics. Types of statistical methods in scientific research. Types of variables. Population and sample. Sample selection. Statistical features and their types. The concept of statistical feature distribution. Point and interval estimation. Statistical hypotheses. General principles of statistical hypothesis testing. Type I and II errors. Power of a statistical test. Basic data operations (filtering, sorting, data export). Statistical description - selecting, determining, and interpreting statistical measures, graphical presentation of data appropriate to their type and measurement scale. Assessing the normality of distribution using graphical methods and formal statistical tests. Testing hypotheses about parameters of one or two populations. Student's t-tests. Using parametric and nonparametric tests. Testing the goodness of fit of distributions. Testing the independence of features. Statistical inference in correlation and regression analysis. Examples of the use of analysis of variance. Post-hoc tests.		

5. SUBJECT LEARNING OUTCOMES

Learning outcomes	A doctoral student who has passed the subject:	Reference to the learning outcomes of Doctoral School (according to the training program at the Doctoral School)
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in the area of KNOWLEDGE:		
W01	has extended knowledge of selected methods of statistical description and inference	SD_W03
in the area of SKILLS:		
U01	is able to use statistical methods in statistical data analysis	SD_U02
in the area of SOCIAL COMPETENCE:		
K01	is ready to comply with the principles of professional ethics and rules applicable in research and development work, in particular in statistical data analysis	SD_K05

6. METHODS OF ASSESSMENT OF THE INTENDED LEARNING OUTCOMES

SUBJECT LEARNING OUTCOMES	METHOD OF ASSESSMENT (+/-)																				
	Oral/written exam			Kolokwium			Project			activity in class			Own work			Group work			Others		
	The type of classes			The type of classes			The type of classes			The type of classes			The type of classes			The type of classes			The type of classes		
	L	C	S	L	C	S	L	C	S	L	C	S	L	C	S	L	C	S	L	C	S
W01				+				+			+										
U01								+			+										
K01								+			+										

7. CRITERIA OF ASSESSMENT OF THE INTENDED LEARNING OUTCOMES

Form of classes	Grade	Criterion of assessment
Classes (C)	3,0	61%-68% total number of points possible to obtain through the colloquium, project and class activity
	3,5	69%-76% total number of points possible to obtain through the colloquium, project and class activity
	4,0	77%-84% total number of points possible to obtain through the colloquium, project and class activity
	4,5	85%-92% total number of points possible to obtain through the colloquium, project and class activity
	5,0	at least 93% total number of points possible to obtain through the colloquium, project and class activity

Accepted for execution

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