

# SYLLABUS

for the education cycle starting in the academic year 2021/2022

<b>Name of course/module</b>	<b>Biostatistics</b>	
<b>Name of unit(s) in which the course is implemented</b>	Department of Statistics and Medical Informatics	
<b>E-mail of the unit</b>	statinfmed@umb.edu.pl	
<b>Faculty</b>	Faculty of Medicine with the Division of Dentistry and Division of Medical Education in English	
<b>Major</b>	Medicine	
<b>Mode of study</b>	long-cycle studies	
<b>Form of study</b>	full-time <input checked="" type="checkbox"/> part-time <input type="checkbox"/>	
<b>Language of the course</b>	Polish <input type="checkbox"/> English <input checked="" type="checkbox"/>	
<b>Course type</b>	obligatory <input checked="" type="checkbox"/> facultative <input type="checkbox"/>	
<b>Year/ semester</b>	I <input type="checkbox"/> II <input checked="" type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> V <input type="checkbox"/> VI	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/>
<b>Introductory courses and essential requirements</b>	Information Technologies - knowledge of basic and advanced functions of a spreadsheet, in particular the Data Analysis module, ability to work with a database - realization of learning outcomes in terms of knowledge, skills and competences from previous years of studies	
<b>Number of hours of teaching divided into forms of teaching</b>	5h – lectures 25 h – practical classes	
<b>Course assumptions and objectives</b>	Acquainting the students with ways and methods of analysing empirical material and methods of drawing conclusions	
<b>Teaching methods</b>	<ul style="list-style-type: none"> <li>• Practical classes at the blackboard</li> <li>• individual work at a computer station</li> <li>• discussion</li> <li>• multimedia presentation</li> <li>• consultations (every 2 weeks on Wednesday - the time of consultation will be given after preparing the department's work schedule)</li> </ul>	
<b>Name and surname of the tutor</b>	Scientific-didactic and didactic staff employed at the Department of Statistics and Medical Informatics	
<b>Name and surname of the person responsible for teaching</b>	dr Urszula Cwalina	

Symbol and number of the learning outcome in accordance with the educational standard and other subject learning outcomes	Description of the learning outcomes for the major	Form of training	Method of verification of assumed learning outcomes
<b>Knowledge</b>			
B.W26	Knows basic IT and biostatistical tools used in medicine, including medical databases, spreadsheets and the basics of computer graphics	Practical classes	<u>Summarizing methods:</u> - written assessments <u>Formative methods</u>
B.W27	He knows basic methods of statistical analysis used in	Practical	- observation of student work

	population and diagnostic research	classes	- evaluation of preparation for classes
B.W29	knows the principles of scientific, observational and experimental research and in vitro studies for development of medicine	Practical classes	- discussion during classes
<b>Skills</b>			
B.U11	Select an appropriate statistical test, perform basic statistical analyses and use appropriate methods to present results; interpret results of meta-analysis, and perform survival probability analysis exercises	Practical classes	<u>Summarizing methods:</u> - written assessments <u>Formative methods</u> - observation of student work - evaluation of preparation for classes - discussion during classes
B.U12	Explains the differences between prospective and retrospective, randomized and clinical-control studies, case reports and experimental studies and ranks them according to the reliability and quality of scientific evidence	Practical classes	
B.U10	Uses databases, including online databases, and retrieves the information needed using the tools available; is able to use a statistical package to perform statistical analyses	Practical classes	
<b>social competences</b>			
K.1	respects medical confidentiality and patient rights	Practical classes	<u>Summarizing methods:</u> - continuous assessment by the teacher (observation) <u>Formative methods</u> - observation of student work - discussion during classes
K.7	uses objective sources of information		
K.8	formulates conclusions from own measurements or observations		

<b>ECTS credits</b>	1
<b>Student workload</b>	
<b>Form of activity</b>	<b>Number of hours to complete the activity</b>
<b>Activities requiring participation of the tutor:</b>	
1. Course completion: lectures (according to the study plan)	5
2. Course completion: practical classes (according to the study plan)	25
3. Course completion: seminars (according to the study plan)	
4. Course completion: optional classes	
5. Participation in consultations	
	hours total: 30
<b>Independent student work:</b>	
1. Self-preparation for theoretical and practical classes (making a project, documentation, case description, etc.)	
2. Self-preparation for assessments/tests	
3. Self-preparation for the final examination/assessment	
	total hours:

<b>Learning content of the course</b>	
<b>Learning outcomes (symbol and number)</b>	<b>Subject</b>
	<b>lectures</b>
B.W29 B.U12 B.U11 K.7	Formulation of statistical hypotheses. Types of statistical studies. Basic elements of survival probability analysis
	<b>Practical classes</b>
B.W27 B.W29 K.7	Familiarizing with basic statistical concepts and methods of statistical research planning

B.W26 B.U10	Grouping and presentation of research material. Use of the Statistica statistical package.
B.W26 B.U10 B.U11 K.8	Calculating descriptive statistics on the basis of empirical data Use of the Statistica statistical package.
B.W26 B.U10 B.U11 K.8	Estimation of confidence. Use of the Statistica statistical package.
B.W26 B.U10 B.U11 K.8	Formulation of statistical hypotheses, selection of statistical methods.
B.W26 B.U10 B.U11 K.8	Applying basic methods to empirical data. Use of the Statistica statistical package.
B.W26 B.U10 B.U11 K.8	Use of the Statistica statistical package to basic elements of survival probability analysis

**Obligatory literature: (1-2 items)**

Aviva Petrie, Caroline Sabin "Medical Statistics at a Glance", Blackwell Science, 2000  
Stanton A. Glantz "Primer of Biostatistics", McGraw-Hill, 2002.

**Supplementary literature: (1-2 items)**

Betty R. Kirkwood, Jonathan A.C. Sterne "Essential Medical Statistics", Blackwell Science, 2003

**Criteria for the assessment of the achieved learning outcomes and the form and conditions of obtaining credit for the course:**

all absences should be justified; after the absence from classes the student should pass the material in the form of completed practical classes indicated by the teacher, the student may be allowed to pass the course after the settlement of individual practical classes; if the percentage of absences exceeds 40% the student is not allowed to pass the course

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(date and signature of the head of the teaching unit or the course coordinator)