### **Course description**

### Part 1

General information about the course				
1. Major of study: medicine	2. Study level: unified MSc			
	3. Form of study: intramural			
4. Year: II	5. Semester: according to the schedule			
6. Course name: Basis of scientific research				

7. Course status: required

#### 8. Course objectives

Objectives of conducting scientific research; specifics of medical scientific research; ethical principles applicable to planning and conducting scientific research; formulating a scientific research question with an accompanying hypothesis and proposing the selection of an appropriate scientific research design; research protocol; types of scientific research (prospective and retrospective, randomized and clinicalcontrol, case reports and experimental studies); ranking of scientific research according to reliability and quality of scientific evidence; working in a team.

**Learning outcomes / reference to learning outcomes indicated in (underline as appropriate):** education standards (Regulation of the Ministry of Science and Higher Education) / Resolution of the Senate of the Medical University of Silesia (indicate terms specified in education standards / signs of learning outcomes approved by the Resolution of the Senate of the Medical University of Silesia) For knowledge student knows and understands: B.W26

For skills student can do: B.U10, B.U11

For social competencies student is ready to: D.W19, D.U2, D.U4, D.U5

9. Number of hours for the course		35	10. Number of ECTS points for the course		2	
11. Form of evaluation: credit		•			•	
12. Methods of verification and evaluation of learning outcomes						
Learning outcomes	Methods of verification		Methods of evaluation*/ credit			
Knowledge	Written evaluation – open questions Grade credit – MCQ <u>Summary methods</u> : Written exam / test exam		*			
Skills	Observation		*			
Competencies	Observation		*			

<sup>\*</sup> For exams and grade credits the following evaluation system has been assumed:

Very good (5,0) – the assumed learning outcomes have been achieved and significantly exceed the required level

Better than good (4,5) – the assumed learning outcomes have been achieved and slightly exceed the required level

Good (4,0) – the assumed learning outcomes have been achieved at the required level Better than satisfactory (3,5) – the assumed learning outcomes have been achieved at the average required level

Satisfactory (3,0) – the assumed learning outcomes have been achieved at the minimum required

**Unsatisfactory (2,0)** – the assumed learning outcomes have not been achieved

# **Course description**

# Part 2

13. Department conducting the course, address, e-mail address:  Department of Epidemiology, 18 Medy-ków St., 40-752 Katowice, epikat@sum.edu.pl  14. Course Coordinator:  Professor Grzegorz Brożek, MD, PhD  15. Prerequisites in terms of knowledge, skills and other competences:  No requirements for prior skills and/or competencies  16. Group size  17. Teaching materials  18 Medy-ków St., 40-752 Katowice  Building c3, IV floor, classrooms: 401, 412, 122/123, Building c2, I floor  19. Location and time of office hours  Building c3, IV floor, 7:30 − 15:30  20. Learning outcomes  Number of the course learning outcomes  Number of the course learning outcomes  In terms of knowledge:  C_K01  Principles of conducting scientific research for the development of medicine  In terms of skills:  classify research methodology, including distinguishing experimental and observational studies along with their subtypes, ranking them according to the degree of reliability of the results provided, and correctly assessing the strength of scientific research, interpret its results and formulate conclusions  In terms of social competencies:  C_C01  Fundamentals of evidence-based medicine  D_W19  C_C02  Recognize the ethical dimension of medical decisions and distinguish and draw conclusions  D_U2  15. Learning and carry out scientific respects  D_U4  C_C04  Critically analyze medical literature, including that in English, and draw conclusions  15. Research methodology - basic concepts, specifics of medical research  16. D_U5  21. Lectures  17. Lectures  18. D_U5  19. D_U5  1	Other useful i	nformation concerning t	he course		
14. Course Coordinator: Professor Grzegorz Brożek, MD, PhD  15. Prerequisites in terms of knowledge, skills and other competences: No requirements for prior skills and/or competencies  16. Group size In accordance with the SUM Senate Resolution  17. Teaching materials Presentations available on e-learning platform  18 Medyków St., 40-752 Katowice Building c3, IV floor, classrooms: 401, 412, 122/123, Building c2, I floor  19. Location and time of office hours Building C3, IV floor, 7:30 − 15.30  20. Learning outcomes  Number of the course learning outcomes  Number of the course learning outcomes  Course learning outcomes  Course learning outcomes  Number of the course learning outcomes  In terms of knowledge:  C_K01 Principles of conducting scientific research for the development of medicine In terms of skills:  C_S01 Experimental and observational studies along with their subtypes, ranking them according to the degree of reliability of the results provided, and correctly assessing the strength of scientific evidence  C_S02 plan and carry out scientific research, interpret its results and formulate conclusions  C_C01 Fundamentals of evidence-based medicine  C_C02 Recognize the ethical dimension of medical decisions and distinguish gon knowledge to others  C_C03 Critically analyze medical literature, including that in English, and draw conclusions  C_C04 Critically analyze medical literature, including that in English, and draw conclusions  21. Lectures  Number of the course discount in the province of measurement reliability in a research methodology - basic concepts, specifics of medical research  15 Research methodology - basic concepts, specifics of medical research  16 Terms and qualitative research methodo. The importance of measurement reliability in a research methodology - basic concepts, specifics of medical research methodology - basic concepts, specifics of medical research methodology - basic concepts, specifics of medical research	13. Departme	nt conducting the course	, address, e-mail address:		
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18. Location of classes   Building c3, IV floor, classrooms: 401, 412, 122/123, Building c2, If floor  19. Location and time of office hours   Building C3, IV floor, 7:30 − 15.30    20. Learning outcomes   Reference to the learning outcomes   In terms of knowledge:   Curse learning outcome   B.W26    In terms of knowledge:   Cassify research methodology, including distinguishing experimental and observational studies along with their subtypes, ranking them according to the degree of reliability of the results provided, and correctly assessing the strength of scientific evidence   D.W19    Location of Skills:   C_S01   Cassify research methodology, including distinguishing experimental and observational studies along with their subtypes, ranking them according to the degree of reliability of the results provided, and correctly assessing the strength of scientific evidence   B.U11    C_S02   plan and carry out scientific research, interpret its results and formulate conclusions   B.U11    In terms of social competencies:   C_C01   Fundamentals of evidence - based medicine   D.W19    C_C02   Recognize the ethical dimension of medical decisions and distinguish factual from normative aspects   D.U2    C_C03   Demonstrate responsibility for improving their qualifications and passing on knowledge to others   D.U3    C_C04   Critically analyze medical literature, including that in English, and draw conclusions   D.U5    21. Forms and subjects of classes   Number of hours   P.U2    Research methodology - basic concepts, specifics of medical research   Capacity   D.U3    Research study   Number of hours   D.U3    Research methodology - basic concepts, specifics of medical research   Capacity   D.U3    Research study   Capacity   D.U3    Research methodology - basic concepts, specifics of medical research   Capacity   D.U3    Research study   Capacity   D.U3    Research methodology - basic concepts, specifics of medical research   Capacity   D.U3    Research methodology - basic concepts, specifics of medical research   C	<b>17. Teaching materials</b> Presentations available on e-learning platform				
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Types of experimental studies in medical research	2	
Types of observational studies in medical research		
Cause-effect relationship - possibilities and limitations of analysis, interpretation of research results		
The importance and construction of a research protocol in a research study	1	
Medical scientific paper	1	
21.2. Seminars	20	
Concepts of scientific cognition, scientific hypotheses and standard elements of study protocol	4	
Model of study design - research on the diet and nutritional status of the population in epidemiological studies	4	
Model of study design – research in clinical medicine, study protocol of observational and clinical research		
Scientific report – abstract, poster, report, article	4	
Model of scientific research. Scientific research in epidemiology and health Sciences. Protocol of the questionnaire survey	4	
21.3. Labs	0	
22. Literature		
Required literature:		
WHO, Beaglehole R.: Basic Epidemiology. 2009		
Supporting literature:		
n/a		
23. Assessment criteria - details		

Final test – Multiple Choice question