

## Course description

### Part 1

General information about the course			
<b>1. Major of study:</b> medicine	<b>2. Study level:</b> unified MSc <b>3. Form of study:</b> intramural		
<b>4. Year:</b> II	<b>5. Semester:</b> according to the schedule		
<b>6. Course name:</b> Basis of scientific research			
<b>7. Course status:</b> required			
<b>8. Course objectives</b> 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 clinical-control, case reports and experimental studies); ranking of scientific research according to reliability and quality of scientific evidence; working in a team.			
<b>Learning outcomes / reference to learning outcomes indicated in</b> (underline as appropriate): <u>education standards (Regulation of the Ministry of Science and Higher Education) / Resolution of the Senate of the Medical University of Silesia</u> (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			
<b>9. Number of hours for the course</b>	<b>35</b>	<b>10. Number of ECTS points for the course</b>	<b>2</b>
<b>11. Form of evaluation:</b> credit			
<b>12. Methods of verification and evaluation of learning outcomes</b>			
Learning outcomes	Methods of verification	Methods of evaluation*/ credit	
<b>Knowledge</b>	Written evaluation – open questions Grade credit – MCQ <b>Summary methods:</b> Written exam / test exam	*	
<b>Skills</b>	Observation	*	
<b>Competencies</b>	Observation	*	

\* 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 level

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

## Course description

### Part 2

Other useful information concerning the course		
<b>13. Department conducting the course, address, e-mail address:</b> Department of Epidemiology, 18 Medyków St., 40-752 Katowice, <a href="mailto:epikat@sum.edu.pl">epikat@sum.edu.pl</a>		
<b>14. Course Coordinator:</b> Professor Grzegorz Brożek, MD, PhD		
<b>15. Prerequisites in terms of knowledge, skills and other competences:</b> No requirements for prior skills and/or competencies		
<b>16. Group size</b>	In accordance with the SUM Senate Resolution	
<b>17. Teaching materials</b>	Presentations available on e-learning platform	
<b>18. Location of classes</b>	18 Medyków St., 40-752 Katowice Building c3, IV floor, classrooms: 401, 412, 122/123, Building c2, I floor	
<b>19. Location and time of office hours</b>	Building C3, IV floor, 7:30 – 15.30	
20. Learning outcomes		
Number of the course learning outcome	Course learning outcomes	Reference to the learning outcome included in the standards
In terms of knowledge:		
C_K01	Principles of conducting scientific research for the development of medicine	B.W26
In terms of skills:		
C_S01	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 evidence	B.U10
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.U4
C_C04	Critically analyze medical literature, including that in English, and draw conclusions	D.U5
21. Forms and subjects of classes		Number of hours
<b>21.1. Lectures</b>		<b>15</b>
Research methodology - basic concepts, specifics of medical research		3
Quantitative and qualitative research methods. The importance of measurement reliability in a research study		2
Database - preparation, types of variables, coding of variable values		2

Types of experimental studies in medical research	2
Types of observational studies in medical research	2
Cause-effect relationship - possibilities and limitations of analysis, interpretation of research results	2
The importance and construction of a research protocol in a research study	1
Medical scientific paper	1
<b>21.2. Seminars</b>	<b>20</b>
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	4
Scientific report – abstract, poster, report, article	4
Model of scientific research. Scientific research in epidemiology and health Sciences. Protocol of the questionnaire survey	4
<b>21.3. Labs</b>	<b>0</b>
<b>22. Literature</b>	
<b>Required literature:</b> WHO, Beaglehole R.: Basic Epidemiology. 2009	
<b>Supporting literature:</b> n/a	
<b>23. Assessment criteria - details</b>	
Final test – Multiple Choice question	