SYLLABUS

The academic year when the cycle of instruction is commenced 2019-2020

Module/course name:	**Methodology of Research**	**Module code**	
Faculty:	Faculty of Medicine MUL		
Major:	Medical		
Specialty:			
Level of study:	I (Bachelor studies) ☐ II (Master studies) ☐ Integrated Master studies **X** Doctoral studies ☐		
Mode of study:	full-time **X**		
Year of study:	I ☐ II **X** III ☐ IV ☐ V ☐ VI ☐	Semester:	1☐ 2☐ 3☐ 4 **X** 5☐ 6☐ 7☐ 8☐ 9☐ 10☐ 11☐ 12☐
Module/course type:	obligatory ☐ elective **X**		
Language of instruction:	Polish ☐ English **X**		

Form of education	**Hours**
Lecture	
Seminar	**30**
Laboratory class	
E-learning	
Practical class	
Internship	
Other	
TOTAL	
Student's work input (participation in class, preparation, evaluation, etc.)	**Student's hourly workload**
1. In class	**30**
2. Student's own work including: 1 Preparing research project	**5**
Summary of the student's workload	**35**
ECTS points for module/course	**1**

Educational objectives:

1. Familiarizing students with the principles of conducting scientific research.
2. Equipping faculty members with the ability to use databases, scientific articles and making critical evaluations.
3. Understanding and analyzing the results of scientific research in terms of their credibility.
4. Developing the ability to use basic theoretical knowledge in the assessment of scientific research in order to analyze the individual processes and phenomena in the field of clinical research.
5. Teaching the use of basic theoretical knowledge in the field of research methodology to interpret test results

The matrix of learning outcomes for module/ subject with reference to verification methods of the intended educational outcomes and forms of instruction:

Learning outcome code	A student who has obtained a credit for the module/course has the knowledge/skill to:	Methods of verifying the achievement of the intended learning outcomes:	Form of instruction * provide the symbol
W 01 (B.W26)	knows the basic computer and biostatistical methods used in medicine, including medical data bases, spreadsheets, basic principles of computer graphics;	project	seminar/ e-seminar
W 02 (B.W27)	knows basic methods of statistical analysis used in population and diagnostic studies;	project	seminar/ e-seminar
W 03 (B.W29)	knows the principles of research work, observations and experiments and the in vitro studies in service of progress in medicine.	project	seminar/ e-seminar
W 04 (G.W2)	knows the identification and study methods of risk factors, advantages and disadvantages of various epidemiological studies and data indicative of the presence of cause-effect relationship;	project	seminar/ e-seminar
W 05 (G.W8)	knows the regulations and basic methods concerning medical experiment and conducting of other medical studies, including basic data analysis methods	project	seminar/ e-seminar
U 01 (B.U11)	can select adequate statistical test, carry out basic statistical analysis, uses proper methods of result presentation, interprets results of meta-analysis; performs survival probability estimates;	project	seminar/ e-seminar
U02 (B.U12)	can explain differences between prospective and retrospective, randomized and clinical controlled trials, case description and experimental studies, and rank them in respect to credibility and quality of scientific evidence;	project	seminar/ e-seminar
U 03 (B.U13)	can plan and carry out simple research study, interpret the results and draw conclusions.	project	seminar/ e-seminar
K01	shows activity in analyzing the discussed material	an extended observation by a supervisor	seminar/ e-seminar
K 02	creates the right attitude towards scientific research	an extended observation by a supervisor	seminar/ e-seminar

EXAMPLES OF METHODS VERIFYING THE ACHIEVEMENT OF THE INTENDED LEARNING OUTCOMES:

In terms of knowledge: Oral exam (*non-standardized, standardized, traditional, problem-based*).

Written exam – the student produces/identifies answers)*essay, report; structured short-answer questions /SSQ/; multiple choice questions /MCQ/; multiple response questions /MRQ/; matching test; true/false test; open cloze test*)

In terms of skills: practical exam; Objective Structured Clinical Examination /OSCE/; Mini-CEX (mini – clinical examination); completion of a given assignment; project, presentation.

In terms of social competences:

A reflective essay; an extended observation by a supervisor/tutor; 360-degree assessment (feedback from teachers, peers, patients, other co-workers); self-assessment (portfolio included).

Course content: (use keywords referring to the content of each class following the intended learning outcomes):

1. Research proceedings: from curiosity, searching for scientific information, verification of scientific theories to research design. The process of conducting scientific research.

2. Databases, systematic reviews, scientific articles. Formulating a clinical question. Searching for research and building search strategies. Exercises.

3. Reference Manager. Exercises.

4. Key concepts in the design and implementation of a scientific study (goal, research hypotheses, research methods and research tools). Tools used to collect results.

5. The method of the choice of population to researches. Rules for their inclusion / exclusion from the study.

6. The types of researches. The non-experimental studies: Cross-sectional studies. Case-control studies. Cohort studies. Exercises.

7. Experimental studies. Randomized control trials. Clinical trials.

8. Measurement of test results. Evaluation of cause and effect relations. Critical evaluation of research. Exercises.

9. A meta-analysis, systematic reviews. Evaluation of scientific data. Exercises.

10. Revision of knowledge of labs.

Obligatory literature:

1. Shanti Bhushan Mishra, Shashi Alok, Handbook of Research Methodology. Publisher: Educreation 2017

Complementary literature:

1. The research handbook, Annetine Staff and Karin C. Lødrup Carlsen et al. Oslo University Hospital, Oslo 2017
2. Fletcher R.H. Clinical epidemiology. The essentials fifth edition. Williams and Wilkins 2014
3. Chinelo Igwenagu, Fundamentals of research methodology and data collection. Publisher: LAP Lambert Academic Publishing 2016

Requirements for didactic aids (e.g. laboratory, multimedia projector, others…)

With the delivery method: multimedia projector, multimedia presentation, laptop.

With the activation method: computer for each students, internet access, practical tasks, scientific articles, Moodle platform

Conditions for obtaining a credit for the subject:

1. Students must attend all seminars.
2. One seminar can be missed without any consequences. More than 1 missed lab class must be explain by showing doctor's note or other explanation note certified by the Dean's Office.
3. Preparing research project.
4. A positive grade is obtained by a student who receives at least 6 points / 10 points. When evaluating, the following criteria are taken into account:

1) Demonstrating knowledge and understanding of the subject - 0-2 points

2) Compatibility of formulated statements with the state of current knowledge - 0-2 points

3) Terminological and linguistic correctness - 0-2 points

4) Proper presentation of content and practical tasks - 0-2 points

5) Student's activity and creativity - 0-2 points

A positive grade: at least 6 points is required to receive a passing grade. Grading scale:
<6.0 points: failed exam grade: 2.0
6.0-6.7 points (60-67%) - grade: 3.0;
6.8-7.5 points (68-75%) - grade: 3.5;
7.6-8.3 points (76-83%) - grade: 4.0;
8.4-9.1 points (84-91%) - grade: 4.5;
9.2-10 points (92-100%)-grade: 5

The name and address of the department/clinic where the course is taught (module/course); contact details (phone number/ email address):

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3. Halina Piecewicz-Szczęsna PhD,
4. Marcin Lewicki MD

Signature of the head of the department/clinic

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Dean's signature

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Date of submission: