



UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN
Faculty of Medicine

Course syllabus – part A

USOS Code: 48SJO-EWEOMS
ECTS: 0.50
Cycle: 2026

EBM with Elements of Medical Statistics EBM with Elements of Medical Statistics

SUBJECT MATTER CONTENT:

Classes – 1. History of the development of EBM and the Cochrane Collaboration. Basic assumptions and principles of evidence-based medicine. Definitions of endpoints (objective, subjective, primary, secondary, clinically important, surrogate, composite). Quality of life and instruments used to assess it. Types of research studies (primary studies: experimental, observational, questionnaire-based; secondary studies: review articles, meta-analyses and systematic analyses, guidelines and recommendations). The concept of randomization. 2. Designing a double-blind randomized trial, performing basic statistical analysis, and analyzing the results. Principles of poster presentation. Sources of credible responses. 3. Poster presentation. Types of variables. Measures of effect, definitions of terms: risk, risk difference, number needed to treat, number needed to harm, relative risk, relative risk reduction, relative risk increase, hazard ratio, odds ratio, confidence interval, level of statistical significance. Interpretation of results, statistical significance and clinical significance. Diagnostic tests, assessment of test utility, test validity parameters. Partial and full economic analyses, cost-consequence analysis. Markov model. Meta-analyses and systematic analyses, assessment of their reliability, analysis and interpretation of publication content. Weighted mean analyses, standardized mean difference. 4. Principles of registration of medicinal products. Phases of clinical experimental trials. Ethical aspects in clinical trials. Bioethics committees. Definitions of terms: Hirsch index, Impact Factor. Strength and classification of recommendations. Principles of guideline development. GRADE system.

TEACHING OBJECTIVE:

Learning to critically analyze medical literature and independently assess the value of scientific publications in medicine

DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY

Symbols for outcomes related to the discipline:

M/NMA_P7S_WG++++++

Symbols for outcomes related to the field of study:

K.5.+, B.U11.+, B.U10.+, B.U12.+, B.U13.+, D.W23.+, B.W26.+, B.W27.+

Legal acts specifying learning outcomes:
311/2023;

Discipline: Medicine

Course status: Obligatory

Group of courses: B - major course

ISCED Code: 0912

Field of studies: Medicine

Field: Medicine

Learning profile: -

Form of studies: full-time

Level of studies: uniform master's studies

Year/Semester: 4th year, Medicine in English

Classes types: Classes;

Classes: Classes (10h);

Language: ANG

Introductory subject: internal medicine, pathophysiology, pharmacology, surgery, pediatrics, biostatistics

Prerequisites: knowledge of the basics of pathophysiology, diagnostics, biostatistics and treatment of human diseases

Organized by the unit:

Coordinators responsible for the course:

Tomasz Stompór, tomasz.stomp@uwm.edu.pl

Additional notes:

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LEARNING OUTCOMES:

Knowledge (W1) – Students will understand the causes, symptoms, diagnostic principles, and therapeutic procedures for the most common diseases leading to end-stage organ failure in transplantable organs, as well as hematopoietic diseases that constitute indications for bone marrow or stem cell transplantation. They will acquire knowledge of surgical transplantology, including indications for transplantation of irreversibly damaged organs and tissues, and the associated procedures.

Skills (U1) – The student is able to use databases, including online ones, and search for necessary information using available tools; select an appropriate statistical test, perform basic statistical analyses, use appropriate methods of presenting results, interpret the results of meta-analysis, and perform survival probability analysis; explain the differences between prospective and retrospective studies, randomized and case-control studies, case reports, and experimental studies, and rank them according to the credibility and quality of scientific evidence; plan and conduct simple research, interpret their results, and draw conclusions.

Social competences (K1) – The student is ready to notice and recognize his/her own limitations and to self-assess his/her educational deficits and needs.

Symbols for outcomes related to the field of study:

Classes – ['K1', 'U1', 'W1'] – Discussion of the texts of scientific publications, poster presentation.

FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:

Classes (Oral test) – ['K1', 'U1', 'W1'] – Presentation - Discussion of a scientific publication

REQUIRED LITERATURE:

1. Evidence-Based Medicine: How to Practice and Teach

1. Sharon E. Straus MD; II. 4th Edition. Churchill-Livingston Elsevier; -; Pages: -; Tome: -;

2. Oxford Handbook of Medical Statistics

Peacock JP, Peacock PJ; Oxford Medical Handbooks; -; Pages: -; Tome: -;

COMPLIMENTARY LITERATURE:



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Detailed description of ECTS credits awarded - part B

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EBM with Elements of Medical Statistics

EBM with Elements of Medical Statistics

1. Contact hours with the academic teacher:

- participation in: Classes	10 h
- consultation	2 h
	Total: 12 h

Independent work of a student:

- Independent student work with the textbook.	0.50 h
	Total: 0.50 h

contact hours + independent work of a student Total: 12.50 h

1 ECTS credit = 25-30 h of an average student's work, number of ECTS

ECTS Points = 12.50 h : 25 h/ECTS = 0.50 ECTS

Average: 0.50 ECTS

- including the number of ECTS credits for contact hours with the direct participation of an academic teacher - 0.48 ECTS pts

- including the number of ECTS credits for hours of independent work of a student - 0.02 ECTS pts