INFORMATION ABOUT THE COURSE

Medical Writing and Research Communication

1. Basic information

Field of studies field of medical and health sciences, discipline: medical sciences **Unit responsible for the field of studies** Faculty of Medicine Bydgoszcz University of Science and Technology **Level of studies** Uniform master's studies **Profile of studies** General academic **Form of studies** Full-time	**Studies cycle** …….. **Course code** …… **Language** English **Obligatory** Yes

Prerequisites	Knowledge and skills acquired during introductory courses. Verification: Completion of the prerequisite courses is equivalent to meeting the entry requirements for this subject.
Introductory courses	Informatics and Biostatistics Medical Data Analysis
Coordinator	Sylwester Kloska, PhD

Study period	**Form of assessment** **Form and hours of classes**	**ECTS credits**
Summer	25 hours (Lectures: 15h, Seminars: 10h) Graded colloquium	2.0

2. Learning outcomes

Code	**Description of learning outcomes**
Knowledge (student knows and understands):	
K1	The student knows and understands the principles of conducting scientific research, including observational, experimental, and in vitro studies aimed at the advancement of medicine.
K2	The student knows and understands the fundamentals of Evidence-Based Medicine (EBM).
K3	The student knows and understands the legal regulations, ethical frameworks, and basic methodologies regarding medical experiments and other clinical research, including fundamental data analysis methods.
K4	The student understands the structural requirements of a scientific paper and international reporting guidelines (e.g., CONSORT, PRISMA).
K5	The student knows the rules of publication ethics, including the definitions of plagiarism, ghostwriting, and guest authorship.
Skills (student can do/perform):	

S1	The student is able to efficiently use medical databases (including PubMed, Scopus, Web of Science) and retrieve necessary information using advanced search tools.
S2	The student can differentiate between prospective and retrospective, randomized and case-control, case reports, and experimental studies, and is able to rank them according to the hierarchy of scientific evidence.
S3	The student is able to plan and conduct simple scientific research, interpret the results, and formulate evidence-based conclusions.
S4	The student is able to critically appraise medical literature (in English) and synthesize findings to support clinical or scientific arguments.
S5	The student is able to use reference management software (e.g., Mendeley, Zotero, or EndNote) to create citations and bibliographies according to various journal styles.
Social competencies (the student is ready to):	
SC1	The student recognizes their own limitations and performs a self-assessment of educational deficits and learning needs.
SC2	The student is committed to using objective and verified sources of information.
SC3	The student is ready to formulate independent conclusions based on their own measurements or observations.
SC4	The student is prepared to formulate professional opinions regarding various aspects of medical and research activities.
SC5	The student demonstrates an ethical attitude towards scientific research, showing sensitivity to the issues of plagiarism and the importance of intellectual honesty.

3. Programme contents

No.	Programme contents	Form of studies	Learning outcomes covered by the programme content
1	Introduction to Medical Research Methodology & EBM. Science as a process. The role of Evidence-Based Medicine in modern clinical practice.	Lecture	K1, K2
2	Research Design & Study Types. From Case Reports to Systematic Reviews and Meta-analyses. Levels of evidence and the "Research Pyramid".	Lecture	K1, K4
3	Ethical & Legal Frameworks. The Declaration of Helsinki, Bioethics Committee approvals, and Informed Consent in research.	Lecture	K3, K5
4	The Landscape of Medical Publishing. How to choose the right journal? Understanding Impact Factor (IF), CiteScore, and Open Access models.	Lecture	K1, K5
5	The Peer-Review Process. Navigating the journey from submission to publication. How to respond to reviewer comments?	Lecture	K5

1	The Anatomy of a Scientific Paper. Writing according to the IMRAD structure (Introduction, Methods, Results, and Discussion). Reporting guidelines (CONSORT, PRISMA).	Seminar	K1, K4, S1, SC1, SC4
2	Advanced Literature Search & Reference Management. Hands-on session: Using PubMed/Scopus and managing citations with software (e.g., Zotero/Mendeley).	Seminar	S1, S5, SC1, SC2
3	Data Interpretation & Visualization. How to present results in tables and figures. Common pitfalls in medical data reporting.	Seminar	K3, S3, S4, SC3
4	Critical Appraisal of Medical Literature. Group work: Analyzing a published paper for bias, methodological flaws, and clinical relevance.	Seminar	K2, K3, S3, S4, SC3, SC4
5	Publication Ethics in Practice. Discussing cases of plagiarism, ghostwriting, and the rise of "predatory journals".	Seminar	K3, K5, S4, SC2, SC5

4. Methods of verifying and assessing the learning outcomes achieved by the student

Form of studies		
Lecture	**Teaching Methods:**	
	Multimedia lecture, demonstration, and case studies.	
	Methods of verification:	**Involvement:**
	Final written test	100% of the lecture grade
	Conditions for passing the course:	
	A passing grade on a Multiple-Choice Question (MCQ) test. Detailed grading criteria are in accordance with the University Study Regulations (PBŚ).	
Seminar	**Teaching Methods:**	
	Group discussion, project-based learning, software demonstration (e.g., reference managers), and hands-on workshops.	
	Methods of verification:	**Involvement:**
	Final Project	100% of the seminar grade
	Conditions for passing the course:	
	Submission and successful defense of a final project on a topic assigned or approved by the instructor.	

5. Literature

Obligatory literature

1. Gastel, B., & Day, R. A. (2022). How to Write and Publish a Scientific Paper (9th ed.). Cambridge University Press.
2. ICMJE Recommendations: Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals. Available online at: www.icmje.org.
3. The EQUATOR Network: Reporting guidelines for main study types (CONSORT, PRISMA, STROBE). Available online at: www.equator-network.org.

Supplementary literature

1. Cargill, M., & O'Connor, P. (2021). Writing Scientific Research Articles: Strategy and Steps. Wiley-Blackwell.

6. Student workload – balance of hours and ECTS credits

Students activity		**Student workload Number of hours**
Contact Hours (Participation in classes)	Lecture	15
	Seminar	10
Independent Work (Student's own work)	Preparation of the Final Project	15
	Preparation for the Final Test	10
Total student workload		50
ECTS		2

One (teaching) hour is 45 minutes.