

METHODOLOGY OF SCIENTIFIC WORK	
GENERAL INFORMATION	
Course teacher	Prof. Mario Štefanić, MD, PhD
Associates	-
Study programme	Graduate University Study of Medical Laboratory Diagnostics
Course status	mandatory
Year of study, semester	2 nd year, 4 th semester
ECTS credits	4
Form of teaching (number of classes)	Lectures 25; Seminars 20
Expected number of students attending the course	20
COURSE DESCRIPTION	
Course objectives	
<p>Introducing students to the basics of research methodology, to theory, rules and potential mistakes related to sampling, to types of research, application and registration of research and to process of preparing a paper, editing a manuscript and publishing a paper. Introducing students to types of data presentation, table and graphic presentation. Types of scientific presentation, rules for designing posters, organizing oral presentations and manuscripts. Planning simple research. Introducing students to the concept of scientific integrity and types of scientific dishonesty. Introducing students to basic statistical terms and tests and their application. Introducing students to the content, structure and services of the most frequently used bibliographic databases and sources of science-based evidence in biomedicine. Introducing students to models of structuring queries and search strategies (PICO). Acquiring basic skills of focused, problem-oriented reviewing and searching of medical information sources, bibliographic/quotation databases and online literature publishing. Training for independent search of literature and use of online databases of bibliographic and scientific information. Training for critical reading of scientific publications and consideration of scientific evidence.</p>	
Course entry requirements and competencies needed for the course	
Defined by the curriculum of the study programme. Competence in English, basic computer skills (Windows OS).	
Learning outcomes at study programme level	
1.1, 2.1, 2.6, 2.7, 3.1	
Expected learning outcomes at course level	
<p>After attending lectures, completing seminars, independent study and passing the exam, students will be able to:</p> <ol style="list-style-type: none"> 1. identify the problem and subject of research 2. specify research objectives. 3. establish research hypotheses. 4. prepare research draft. 5. critically review methodology and combine analytical procedures. 6. calculate and present research results. 7. find, search and use clinical trials registries. 8. define and recognise types of scientific dishonesty. 	
Course content	
<p>Lectures: Scientific opinion. Plan and implementation of scientific research. Sampling, population. Types of scientific research. Sources of scientific information. Bibliographic bases. Types of data. Types of scientific presentation. Structure of scientific work. Scientific integrity. Evidence-based medicine. Application and registration of research.</p>	

Seminars: Literature search. Bibliographic databases PICO model. Data processing. Measuring instruments. Oral presentation. Ability to display data. Poster. Manuscript preparation and equipment. Graphic presentation of data. Publishing scientific work. Critical review of articles.

Forms of teaching

Lectures; Seminars and workshops, Independent assignments.

Students' responsibilities

Attendance is obligatory throughout all course forms and the student has to attend all the exams. Student absence of up to 30% is considered acceptable in each teaching form. Practical work and seminars that were not completed have to be taken in the form of colloquiums. The student has to attend all forms of exams required.

Monitoring students' work (*Connecting learning outcomes, teaching methods and evaluation*)

Teaching activity	ECTS	Learning outcome	Student activity	Evaluation methods	Grade points	
					Min.	Max.
Attending classes	0.25	1-8	Attendance	Attendance records	2	8
Seminar paper	0.75	1-4	Seminar paper	Writing and presenting seminar paper	8	20
Final exam	3	1-8	Studying for final exam	Written exam	40	72
Total	4				50	100

Evaluation of written part of final exam

Percentage of correct answers (%)	Grade points
96.00-100	72
90.00-95.00	60
80.00-89.00	50
70.00-79.00	45
60.00-70.00	40

Formulating the final grade:

Grade points achieved in classes are combined with points achieved in the final exam. Grading in the ECTS system is absolute grading and represents one's final achievement. Grades are numerically expressed as follows: A – excellent (5): 80-100 grade points; B – very good (4): 70-79.99 grade points; C – good (3): 60-69.99 grade points; D – sufficient (2): 50-59.99 grade points.

Assigned reading (available in the library and in other media)

Title	Number of copies in the library	Availability in other media
1. Marušić M et al.: Uvod u znanstveni rad u medicini, Medicinska naklada. 6 th edition, Zagreb, 2019.	10	

Further reading

1. Silobrčić V. Kao sastaviti, objaviti i ocijeniti znanstveno djelo. 5th edition, Zagreb, 2003

2. Walliman N. Research methods – the basics. London and New York: Routledge Taylor & Francis Group, 2011.
3. Ferenczi E, Muirhead N. Doktor u jednom potezu: Statistika i epidemiologija. Zagreb: Medicinska naklada, 2012.

Quality assurance methods that ensure the acquisition of exit competencies

Anonymous, quantitative, standardised students' opinion survey on the course and teacher's work, carried out by the Quality Assurance Office of the Faculty of Medicine in Osijek.