

МЕДИЦИНСКИ УНИВЕРСИТЕТ - ВАРНА
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FACULTY OF MEDICINE

Approved:
Dean:

(Prof. Yoto Yotov, MD, PhD)



SYLLABUS

IN SOCIAL MEDICINE AND BIOSTATISTICS

Specialty	MEDICINE
Educational - qualification degree	Master
Organizational form of education	full-time
Auditorial activity (Lectures/Seminars)	90 (45/45)
Extra-auditorial activity	90
ECTS- credits	6
Discipline type	compulsory
Semester/s of education	second and third
Semester of examination	third
Developer(s) of the Syllabus:	Prof. Dr. Albena Kerekovska Prof. Dr. Klara Dokova Prof. Dr. Desislava Vankova

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ANNOTATION

Aims of the course	<p>The aim of the Biostatistics module is to provide an introduction to the basic concepts of statistical ideas and methods, to prepare students to apply common statistical procedures and to follow statistical reasoning in their field of study. The students should understand the basic methods in statistical analysis: principles of data collection and summarization, statistical inference from a sample to the population, hypothesis testing, and the most common parametric and nonparametric tests. The students are also acquainted with some software products used for data processing (EXCEL, IBM SPSS, Jamovi). Teaching is focused on critical interpretation and assessment of the results of scientific research in the medical and health field. The education in medical statistics will allow the future physicians to apply the basic statistical techniques and critically analyse scientific literature.</p> <p>The Social Medicine module aims to familiarize students with the models and determinants of health, the key features, and contemporary trends in public health, as well as the methods and indicators used for its evaluation and analysis. Particular attention is given to medical demography indicators (both static and dynamic) as tools for assessing population health. The module emphasizes international comparisons, health inequalities, global health trends, and their implications for public health.</p> <p>Students explore the concept of epidemiological transition and current trends in population morbidity. The foundational principles of modern epidemiology are introduced, including the design, advantages, limitations, and applications of the main types of epidemiological studies. The module also addresses risk measurement, identifying risk factors and at-risk groups for major non-communicable diseases. Critical analysis of scientific publications provides insights into causality in epidemiology and potential errors in epidemiological research.</p> <p>The concept of evidence-based medicine (EBM) is presented alongside related terminology. Special focus is given to the principles, levels, and strategies of disease prevention, highlighting the role of epidemiological approaches in enhancing clinical practice through EBM.</p>
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Outcomes for students at the end of the course:	
Competences	
Competence group	1. Patient Care that is compassionate, appropriate, and effective for treating health problems and promoting health.
Knowledge	<ul style="list-style-type: none"> ▪ To build knowledge on empathic listening and reading of the patient's social history of the disease.
Skills	<ul style="list-style-type: none"> ▪ To gather essential and accurate information about the social history of disease.

Competence group	2. Medical Knowledge about established and evolving biomedical, clinical, and cognate (eg, epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
Knowledge	<ul style="list-style-type: none"> ▪ To know the effect of key determinants of individual and population health. ▪ To understand the key indicators for measuring population health. ▪ To competently explain the principles of health promotion, the levels of disease prevention and their place in the patient care and population health. ▪ Have knowledge on modern epidemiology and social sciences and its application in improving patient care.
Skills	<ul style="list-style-type: none"> ▪ Developing an epidemiological study design and applying a research and analytical approach to solving socio-medical and scientific problems. Determining different types of health risks. ▪ Describe the health of a population using basic demographic and epidemiological indicators. ▪ Evaluate the social, behavioral and environmental factors which influence health in the population. ▪ Apply the principles of primary, secondary, and tertiary prevention including screening. ▪ Acknowledge, describe and analyse the influence of health inequities on patients care and health promotion. ▪ Competently perform a public health analyses required for promoting health. ▪ Develop effective health promotion and prevention guidance in the context of public health.
Competence group	3. Practice-Based Learning and Improvement that involves investigation and evaluation of their own patient care, appraisal, and assimilation of scientific evidence, and improvements in patient care.
Knowledge	<ul style="list-style-type: none"> ▪ Know and explain the hierarchy of epidemiological evidence for clinical practice. ▪ Understand the strengths and weaknesses of various epidemiological study designs. ▪ Know and explain different approaches for data collection and management. ▪ Understand and apply statistical methods for data analysis ▪ Describe statistical methods in scientific publications and are able to critically discuss the applied design methods including statistical tests. ▪ Have knowledge on what is evidence-based medicine (EBM) and to acknowledge what is scientific evidence.
Skills	<ul style="list-style-type: none"> ▪ Appraise and assimilate scientific evidence through modern epidemiological approaches. ▪ Interpret and communicate research evidence in a meaningful way.

	<ul style="list-style-type: none"> Describe the value of epidemiological and statistical approaches to scientific inquiry. Interpret common statistical tests used in medical research publications. Formulate simple research questions.
Competence group	4. Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.
Knowledge	<ul style="list-style-type: none"> Build knowledge how to work effectively as a member or leader of a research team. Build knowledge on communication in presenting research work.
Skills	<ul style="list-style-type: none"> Demonstrate abilities for teamwork in public health research. Demonstrate communication skills in presenting the research tasks.
Competence group	5. Professionalism , as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
Knowledge	<ul style="list-style-type: none"> Know about the importance of cultural determinants of health and disease thus developing sensitivity to a diverse patient population.
Skills	<ul style="list-style-type: none"> Developing a socio-medical history of the disease and a preventive intervention plan, demonstrating humanism, cultural competence and a holistic approach to health. Demonstrate professional development skills through evaluation and analysis of scientific evidence.
Competence group	6. Systems-Based Practice , as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.
Knowledge	<ul style="list-style-type: none"> To acknowledge the importance of risk-benefit analysis in population-based care as appropriate. To be aware of the levels and types of healthcare systems and the indicators for quality patient care and optimal patient care systems. Demonstrate knowledge and understanding how care is delivered in the range of health settings including community, patients' homes, primary, secondary and hospital settings.
Skills	<ul style="list-style-type: none"> To differentiate the levels and types of healthcare systems.

	<ul style="list-style-type: none"> ▪ To be able to incorporate considerations of cost awareness and risk-benefit analysis in population-based care as appropriate. ▪ To advocate for optimal patient care systems. ▪ Explain the importance of integrated patients' care across different settings ▪ Describe the relationship between healthcare and social care and how they interact.
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Key competencies for lifelong learning¹, that the discipline develops:

Literacy competence

Literacy is the ability to identify, understand, express, create, and interpret concepts, feelings, facts and opinions in both oral and written forms, using visual, sound/audio and digital materials across disciplines and contexts. It implies the ability to communicate and connect effectively with others, in an appropriate and creative way.

X

Multilingual competence

This competence defines the ability to use different languages appropriately and effectively for communication. It broadly shares the main skill dimensions of literacy: it is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal and cultural contexts according to one's wants or needs.

X

Mathematical competence and competence in science, technology, engineering

A. Mathematical competence is the ability to develop and apply mathematical thinking and insight in order to solve a range of problems in everyday situations. Building on a sound mastery of numeracy, the emphasis is on process and activity, as well as knowledge. Mathematical competence involves, to different degrees, the ability and willingness to use mathematical modes of thought and presentation (formulas, models, constructs, graphs, charts).

B. Competence in science refers to the ability and willingness to explain the natural world by making use of the body of knowledge and methodology employed, including observation and experimentation, in order to identify questions and to draw evidence-based conclusions. Competences in technology and engineering are applications of that knowledge and methodology in response to perceived human wants or needs. Competence in science, technology and engineering involves an understanding of the changes caused by human activity and responsibility as an individual citizen.

X

Digital competence

Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking.

X

Personal, social and learning to learn competence

Personal, social and learning to learn competence is the ability to reflect upon oneself, effectively manage time and information, work with others in a constructive way, remain resilient and manage one's own learning and career. It includes the ability to cope with uncertainty and complexity, learn to learn, support one's physical and emotional well-being, to maintain physical and mental health, and to be able to lead a health-conscious, future-oriented life, empathize and manage conflict in an inclusive and supportive context.

X

Citizenship competence

the ability to act as responsible citizens and to fully participate in civic and social life, based on an understanding of social, economic, legal and political concepts and structures, as well as global developments and sustainability.

X

¹ As defined in 2018 r. by the European Union Council ([https://eur-lex.europa.eu/legal-content/BG/TXT/HTML/?uri=CELEX:32018H0604\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/BG/TXT/HTML/?uri=CELEX:32018H0604(01)&from=EN))

Entrepreneurship competence Entrepreneurship competence refers to the capacity to act upon opportunities and ideas, and to transform them into values for others. It is founded upon creativity, critical thinking and problem solving, taking initiative and perseverance and the ability to work collaboratively in order to plan and manage projects that are of cultural, social or financial value.	X
Cultural awareness and expression competence Competence in cultural awareness and expression involves having an understanding of and respect for how ideas and meaning are creatively expressed and communicated in different cultures and through a range of arts and other cultural forms. It involves being engaged in understanding, developing and expressing one's own ideas and sense of place or role in society in a variety of ways and contexts.	X

Methods of education
<ul style="list-style-type: none"> ▪ lectures ▪ seminars with discussions, project assignment including work with data, scientific literature, regulatory documents, databases, analyses, presentations

Links with other courses from the curriculum of the specialty
<ul style="list-style-type: none"> ▪ Necessary for the following disciplines: <ul style="list-style-type: none"> ○ Medical ethics ○ Hygiene and epidemiology ○ Infectious diseases and Epidemiology ○ Medical psychology and sociology (elective discipline) ○ History of medicine (elective discipline) ▪ Other related disciplines: The discipline is related to all the disciplines in the curriculum building professional and key competences in public health and medical science and research.