Course Title	**Epidemiology and Public Health**				
Course Code	ABS205				
Course Type	Compulsory				
Level	BSc (Level 1)				
Year / Semester	2nd / 3th				
Teacher's Name	Prof, Eleni Jelastopoulou, Dr Stavroula Gouzelou				
ECTS	6	Lectures / week	3	Laboratories/week	2
Course Purpose	The purpose of the course "Epidemiology and Public Health" is to provide students with a focused and specialized understanding of how epidemiology applies to the study of non-communicable diseases and how it can contribute to the advancement of public health. The course aims to equip students with the knowledge and skills to investigate, analyze, and address the complexities of disease prevention and disease treatment from an epidemiological perspective. By exploring the patterns, risk factors, and impact of diseases, students gain insights into prevention, intervention, and public health strategies. The course ultimately prepares students to contribute effectively to the fields of epidemiology and public health and take part in the design and implementation of initiatives aimed at reducing the burden of disease on individuals and populations.				
Learning Outcomes	The curriculum encompasses various essential aspects related to epidemiology of diseases and public health. Students delve into the principles and methods of epidemiology, gain a deep understanding of disease patterns, risk factors, and measures of disease occurrence. They explore different study designs, such as cohort studies, case-control studies, and cross-sectional studies, and learn how to select the most appropriate design for specific research questions. Additionally, the course covers data collection techniques, sampling methods, and sample size determination tailored to non-communicable disease research. Students acquire skills in data analysis, including statistical techniques commonly used in epidemiological studies of non-communicable diseases. They learn to interpret and draw valid conclusions from the results obtained. Furthermore, the course emphasizes the evaluation of research findings including assessing the quality and validity of epidemiological studies. The connection between epidemiology and public health is thoroughly explored. Students understand the role of epidemiology in informing public health interventions and policies targeting non-communicable diseases. They explore the social determinants of health and disparities related to disease, along with strategies for health promotion and disease prevention. Finally, the curriculum includes characteristic examples of health promotion and disease prevention interventions such as cancer screening programs and community-based intervention programs to demonstrate the basic principles of diagnostic accuracy, diagnostic utility and cost effectiveness in healthcare. Throughout the curriculum, ethical considerations in epidemiology and public health practice are addressed.				

Prerequisites	None	Corequisites	None
Course Content	Theory: • Introduction to epidemiology and its relevance to non-communicable diseases. • Basic concepts: incidence, prevalence, risk factors, and measures of disease occurrence. • Study designs: cohort studies, case-control studies, cross-sectional studies, and experimental designs. • Data collection techniques: surveys, medical records, registries, and biomarkers. • Sampling methods and sample size determination. • Data analysis: descriptive statistics, hypothesis testing, and measures of association. • Bias, confounding, and effect modification. • Ethical considerations in epidemiological studies. • Observational study designs: strengths, weaknesses, and applications. • Experimental study designs: randomized controlled trials and quasi-experimental designs. • Longitudinal studies and their relevance of non-communicable disease research. • Data collection methods: interviews, questionnaires, physical examinations, and laboratory tests. • Measurement techniques for risk factors including clinical laboratory investigations • Statistical analysis techniques: basic regression models and survival analysis. • Interpretation of results and drawing valid conclusions. • Public health principles and their application to non-communicable diseases. • Social determinants of health and their impact on disease disparities. • Screening and early detection strategies in public health. • Epidemiological approaches to health promotion and disease prevention. • Program planning and evaluation in public health interventions. • Principles of diagnostic accuracy, diagnostic utility and cost effectiveness.		

	• Epidemiological contributions to health policy development and decision-making. • Collaboration between epidemiologists and public health practitioners. • Critical appraisal of epidemiological studies. • Validity and reliability of research findings. • Assessing internal and external validity of tools used in epidemiology. • Systematic review and meta-analysis techniques for research synthesis. • Interpreting and communicating research results to diverse audiences. • Ethical considerations in research evaluation. • Identifying research gaps and setting future research priorities. • Translating research findings into evidence-based practice and policy. <u>Workshops/exercises:</u> The course incorporates workshops and exercises as essential components to enrich comprehension and reinforce theoretical concepts. By actively participating in hands-on activities, students can deepen their understanding and apply the knowledge gained. Throughout the course, there will be a variety of engaging workshops and exercises that provide practical experiences and opportunities for students to delve further into the subject matter. - Design a mock epidemiological study, including selecting a research question, choosing an appropriate study design, determining sample size, and planning data collection methods. - Provide a set of research papers and ask students to critically appraise and evaluate the methodology, study design, and statistical analysis used, discuss its strengths, weaknesses, as well as potential applications in public health policy. - Provide a dataset related to a non-communicable disease and guide students through the process of analyzing the data using appropriate statistical techniques, such as regression models or survival analysis. - Design a mock public health promotion policy encompassing screening for a non-communicable disease and a community-based intervention program.
Teaching Methodology	The teaching methodology employs a multifaceted approach to facilitate learning. Theoretical lectures provide foundational knowledge, supplemented by detailed notes and visual aids. Interactive workshops and exercises allow students to apply epidemiological concepts to real-world scenarios. Group discussions foster critical thinking, collaboration, and the exchange of ideas among students. Through this comprehensive approach

	to epidemiology, students develop a solid understanding of the subject matter and gain the necessary skills to contribute to the prevention, control, and management of disease through evidence-based approaches.
Bibliography	(a) Textbooks: 1. ASCHENGRAU, Ann; SEAGE, George R. Essentials of epidemiology in public health. Jones & Bartlett Publishers, 2013. (b) References: 2. REMINGTON, Patrick L.; BROWNSON, Ross C.; WEGNER, Mark V. (ed.). Chronic Disease Epidemiology, Prevention, and Control. 2016.
Assessment	For student evaluation, the overall grade is determined by a written midterm exam (20%), workshops/exercises (20%) and a written final exam (60%). The mid-term exam is carried out between the 6th and 8th week, and it mainly includes short answer questions and problem- solving questions and examines most modules of the course. As far as the workshops/exercises grade is concerned, it comprises of the evaluation of the reports submitted by the students for each workshop. In the workshops/exercises, students are asked to describe the procedure, to evaluate and analyse their results and to answer specific questions. The final exam of the course is carried out during the 14th-16th week of each semester, and it includes short answer questions, critical thinking questions, and problem-solving questions regarding all course modules. The final assessment of the students is formative and summative and complies with the subject's expected learning outcomes and the quality of the course.
Language	Greek, English