Course Title	Biostatistics – Epidemiology				
Course Code	DES145				
Course Type	Compulsory				
Level	Bachelor of Dentistry				
Year / Semester	1st year / 2nd semester				
Teacher's Name	TBA				
ECTS	2	Lectures / week	2 hrs / 13 weeks + exam week	Laboratories / week	1 hr / 13 weeks
Course Purpose and Objectives	This course provides an introduction to the skills needed by public health professionals and clinicians to practice evidence-based medicine, to reach correct conclusions about diagnostic procedures and laboratory test results, to evaluate study protocols and articles and to develop familiarity with statistical methods.				
Learning Outcomes	Upon successful completion of this course students should be able to: • Demonstrate expertise regarding the principles and applications of epidemiology and research methodology • Develop judgment about data applicable to clinical care • Interpret commonly used vital statistics and understand epidemiologic information for patient care and prevention of disease • Summarizing data and presenting data in Tables and Graphs • Discuss measures of morbidity and mortality, standardization, epidemiology and prevention, sources of epidemiological information, health Indicators • Discuss the methods of sampling in medical research • Define the epidemiological study design including experimental and observational studies (i.e. cohort, case-control, cross-sectional and ecological studies) • Describe the advantages and disadvantages of different studies and when they apply • Describe the basics of infectious diseases epidemiology • Define the appropriate disease measures and measures of association • Discuss the logic behind statistical hypothesis testing				

	• Discuss the correlation and regression statistical methods • Describe the different types of errors in epidemiological studies • Evaluate the literature • Define the natural history of a disease • Describe criteria for characterizing the causality of association • Describe and discuss the role and contribution of epidemiology to global health • Assess the validity and reliability of diagnostic and screening tests

Prerequisites	None	Co-requisites	None

Course Content	In that regard, students will familiarize themselves with the following Modules: • The scope of biostatistics and epidemiology, key terms in epidemiology, epidemiology and prevention, sources of epidemiological information, health Indicators • Occurrence of a disease, surveillance, outbreak investigation • Summarizing nominal data, summarizing numerical data in tables and graphs • Measures of morbidity, measures of mortality, overview of epidemiologic study design • The meaning of probability sampling distributions • Randomized experimental studies, Case-control, and cohort studies • Estimation & Hypothesis Testing, population and samples, statistical hypothesis tests I • Cross-sectional and ecological studies, estimating risk • Statistical hypothesis tests II • Systematic reviews, Epidemiology and public policy • Correlation and regression, linear regression • Ethical and professional issues • Multivariate regression analysis • Bibliographic Search, PubMed Tutorial - The Natural history of disease • Infectious diseases epidemiology • Clinical epidemiology – assessing the validity of diagnostic and screening tests • Bias in epidemiogical studies
Teaching Methodology	Face-to-face

Bibliography	Gordis L. Epidemiology. Philadelphia: Saunders, 2013. White S. Basic & Clinical Biostatistics. New York: McGraw-Hill Lange, 2020. Additional Recommended Textbooks: Webb P, Bain C, Page A. Essential Epidemiology: An Introduction for Students and Health Professionals. Cambridge: Cambridge University Press, 2020. Burt Gerstman B. Epidemiology Kept Simple: An Introduction to Traditional and Modern Epidemiology. Oxford: Wiley-Blackwell, 2013.
Assessment	

Final Examination	60%
Laboratory / Clinical Work / Oral presentations	30%
Participation and attendance	10%
Total	100%

Language	English