Ivane Javakhishvili Tbilisi State University, Faculty of Medicine

Course Syllabus

Course name	Epidemiology and Biostatistics II
Author (Authors)	Paata Imnadze, MD, PhD, Professor, Tbilisi State University, Faculty of Medicine, Department of Public Health; Ekaterine Ruadze, MD, MSc, PMP, Lecturer.
Lecture (Lecturers)	Paata Imnadze, MD, PhD, Professor, Tbilisi State University, Faculty of Medicine, Department of Public Health; Tel: 599 90 68 53 e-mail: pimnadze@ncdc.ge Ekaterine Ruadze, MD, MSc, PMP, Lecturer in Epidemiology and Biostatistics. Tel: 595 62 32 75, e-mail: e.ruadze@ncdc.ge Giorgi Chakhunashvili, MD, PhD, Lecturer in Epidemiology and Biostatistics, Tel: 591 40 10 86 e-mail: gio.ncdc@gmail.com
Code of the course	The code is awarded by the faculty in accordance with the general rules.
Status of the Course 	Faculty of Medicine. Georgian-Norwegian Collaborative Master Program "Public Health". Teaching languages is English. Teaching course is Mandatory.
Aims of the course	The aim of the course is to equip students with the knowledge to understand, conduct and evaluate the epidemiological research and to appreciate the role of scientific evidence in public health.
ECTS (Number of contact hours and independent working hours)	10 Credits (250 hours). Contact time – 60 h. (lecture - 30 h. practical/seminar/group work - 30); Mid – term exam - 2 h; Final exam - 3 h.; Independent work - 185 h.
Prerequisites	Epidemiology and Biostatistics I
Learning outcomes	Knowledge and understanding At the end of the course the student: Knows: (i) the difference between the study designs, (ii) bias, confounding, causality; (iii) basic analysis of data; (iv) interpretation and assessment of scientific evidence. Applying of knowledge and skills At the end of the course the student: Is able to (i) conduct analysis using statistical package; (ii) write research report; (iii) critically appraise systematic reviews. Ability Making Judgment At the end of the course the student:

	Is able to make decisions about the most approprite epidemiological research methods, selection of sample for investigation to draw valid results and choose the appropriate statistical data analysis approach. The student is also able to draw the correct conclusions based on the obtained results. Communication skills At the end of the course student can communicate the study finding to the audience, policy makers and public health providers. Learning Skills Student will be able to: Be active during study process, take part in it. Has ability to manage independently; To understand the specificities of the learning process; To distribute time on study plan correctly, to follow deadlines. Values After considering a variety of issues in the process of course students will have understood the ethical and moral values connected to providing evidence in public health, through epidemioloical studies. Generally, epidemiologists' work in public health sector needs to follow humane principles, providing true evidence based on the best judgments.
Course Contents	See Appendix 1
Learning-Teaching Methods	The course is taught through a variety of teaching methods including: lectures, small group seminars, computing practical, and group work with peers.
Assessment forms/components/methods/criteria	Reading and discussing of scientific literature – 20 points; Quiz 10 – each 2 points (total 20 points); Mid-term exam - 20 point; Final exam - multiple-choice 40 tests – 40 point (correct answer-1 point). For the detailed description of assessment criteria please refer to the students Guide. The evaluation system has: A) five positive grades: (A) Excellent – 91-100; (B) is very good - 81-90; (C) good - 71-80; (D) satisfactory - 61-70; (E) enough - 51-60; B) Two types of negative evaluation (FX) Fail - 41-50, which means that the student will need to work more and to retake an additional exam; Additional exam will be held no less than 5 days after the announcement of the results of the final exam. (F) Fail - 40 or less, which means that the student's work is not enough and the subject should be learned again.
Basic Literature	Epidemiology – Leon Gordis (5th edition) 2014. Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014. Books are available at University library.
Additional Literature	Essential medical statistics – Betty R. Kirkwood and Jonathan A.C. Sterne, second addiction, May, 2003, online book. https://www.ufpe.br/ppgero/images/documentos/stata.pdf Essential Epidemiology – Penny Webb and Chris Bain, second edition, 2010, online

	book. http://medfac.tbzmed.ac.ir/Uploads/3/cms/user/File/10/workshops/9/Penny%20Webb.pdf Principles of Epidemiology, second edition, CDC, originally published, 2006, updated 2010. https://www.cdc.gov/ophss/csels/dsepd/ss1978/

Appendix 1

Course content

Week		Lecture/group work/practical work	Number of hours
I	Lecture	Introduction to study design Epidemiology – Leon Gordis (5th edition) 2014 Epidemiology, Biostatistics, Preventive Medicine and Public Health D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Practical	Discussion of different study designs based on published studies	2
II	Lecture	Case-control studies and cohort studies Epidemiology – Leon Gordis (5th edition) 2014 Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Different measures used in difference studies	2
III	Lecture	Hypothesis testing Epidemiology – Leon Gordis (5th edition) 2014 Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Practical	Hypothesis testing Quiz 1.	2
IV	Lecture	Basic analysis of data Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Introduction to statistical package - SPSS/ conduct analysis of numeric data using statistical package SPSS Quiz 2.	2

V	Lecture	Confounding and interaction Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Analysis of numeric data in SPSS. Quiz 3.	2
VI	Lecture	Bias Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Basic analysis of data – (categorical data) SPSS. Quiz 4.	2
VII	Lecture	Bias (continue) Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Basic analysis of data – (categorical data) SPSS	2
		Mid Term Exam (Multiple choice test).	
VIII	Lecture	Basic analysis of data - (correlation) SPSS Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Basic analysis of data - (correlation) SPSS. Quiz 5.	2
IX	Lecture	Causality Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Causality. Quiz 6.	2
X	Lecture	Reading scientific articles. Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Reading scientific articles.	2
XI	Lecture	Measure of impact. Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Practical	Calculate and interpret measurs of impact. Quiz 7.	2
XII	Lecture	Epidemiology and Public Policy Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Understanding and interpreting meta-analysis. Quiz 8.	2
XIII	Lecture	Global trends in Public health. Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Global trends in Public health. Quiz 9.	2

XIV	Lecture	Systematic review. Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Discuss the published systematic reviews. Quiz 10.	2
XV	Lecture	Summary lecture – The role of evidence in publich health Epidemiology – Leon Gordis (5th edition) 2014 Epidemiology, Biostatistics, Preventive Medicine and Public Health – D. L. Katz, Joann G. Elmore, D.MG. Wild and S. C .Lucan 2014	2
	Seminar	Study report writing	2
		Final Exam	