

Summer Institute of Advanced Epidemiology and Preventive Medicine Summer 2015

Intermediate Observational Epidemiology - Course Syllabus

July 12-16, 2015 / 08:30-13:00

Final Exam July 17, 2015 / 9:00-11:00

Sackler Faculty of Medicine / Room 215

Course No. 0158.1020 / 2 Academic Credits

Course Instructor:	Dr. Moyses Szklo, Johns Hopkins Bloomberg School of Public Health
Teaching Assistant:	Ms. Vered Rosenberg
Date / Time / Room:	July 12-16, 2015 / 08:30-13:00 / Room 215
Final Exam:	July 17, 2015 / 9:00-11:00 / Room 215
Prerequisites:	Basic courses in Epidemiology and Biostatistics

Moyses Szklo, MD, DrPH

Dr. Szklo is the Director of the Graduate Summer Institute of Epidemiology and Biostatistics at Johns Hopkins University and professor at Johns Hopkins Bloomberg School of Public Health. Prof. Szklo is also the Editor-in-Chief of the American Journal of Epidemiology. He has been interested in both the natural history and the etiology of cardiovascular diseases. Dr. Szklo was involved in a total metropolitan Baltimore study of the prognosis of patients with acute myocardial infarction, and was one of the first investigators to clearly demonstrate on a population-wide basis the prognostic importance of non-Q infarction, particularly relevant to the assessment of subclinical cardiovascular disease. Dr. Szklo was principal investigator for the Hopkins field center (based in Washington County, Maryland) and chairman of the Steering Committee of the Atherosclerosis Risk in Communities (ARIC) study from 1986 through 2000, in addition to acting as its editor for internal review of manuscripts. He is currently principal investigator of the Multi-Ethnic Study of Atherosclerosis, and chair of its publications committee.

Course Description

The course is aimed at students who already have an understanding of epidemiology's basic principles and methods. The course will consist of theoretical presentations and small group discussion of exercises. Topics covered include study designs in observational epidemiology, measures of frequency, survival analysis, person-time analysis, measures of association in traditional case-control and cohort studies. Other topics will be biases and confounding effects, principles and logic of statistical adjustment. The concept of interaction and evaluation of interaction in case-control and cohort studies will be covered. Topics in the interface of epidemiology and public health policy will be discussed.

Requirements

To receive academic credit for the course, participants must pass the final exam with a grade of at least 60 (D). Non-credit participants are not required to take the final exam.

Textbook

Szklo M. and Nieto FJ. Epidemiology: Beyond the Basics. Burlington, MA: Jones & Bartlett Learning, 2014.

Course Schedule

Sunday, July 12th

8:30-10:00	Study designs: birth cohort and ecologic studies
10:00-10:30	Break
10:30-12:00	Study designs: cohort and case-control studies, case-cohort, and nested case-control studies
12:00-12:15	Break
12:15-13:00	Exercise on study designs

Monday, July 13th

8:30-10:00	Measures of disease frequency: cumulative incidence (survival analysis) and rates/densities (person-year analysis)
10:00-10:30	Break
10:30-12:00	Measures of association in cohort and case-control studies; The parameter estimated by the odds ratio as a function of the control group's sampling frame
12:00-12:15	Break
12:15-13:00	Exercise on odds ratios and relative risks

Tuesday, July 14th

8:30-10:00	Selection and information bias; Sensitivity and specificity as a framework to understand misclassification
10:00-10:30	Break
10:30-12:00	Interaction: definitions and evaluation strategies
12:00-12:15	Break
12:15-13:00	Exercise on misclassification

Wednesday, July 15th

8:30-10:00	Additive and multiplicative models; Quantitative and qualitative interaction; Public health interaction
10:00-10:30	Break
10:30-12:00	Confounding; Positive and negative confounding; Kaplan-Meyer adjustment technique
12:00-12:15	Break
12:15-13:00	Exercise on interaction

Thursday, July 16th

8:30-10:00	Epidemiologic issues in the interface with public health (Part I)
10:00-10:30	Break
10:30-12:00	Epidemiologic issues in the interface with public health (Part II)
12:00-12:15	Break
12:15-13:00	Questions and Wrap Up

Friday, July 17th

9:00-11:00	Final Exam (Room 215, Sackler Faculty of Medicine)
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