



GRADUATE PROGRAM "THE MOLECULAR BASIS OF HUMAN DISEASE"

COURSE: BIOSTATISTICS, EPIDEMIOLOGY & CLINICAL METHODOLOGY

Academic Year 2014-2015

Course code: MBNA 108
Coordinator: J. Moschandreas
Co-coordinators: G Bertias, P. Sidiropoulos

Course objectives:

The **Biostatistics** component of course MBD105 introduces statistical concepts and methods that are commonly applied in medical research. It aims to provide students with the necessary skills to a) interpret and critically appraise the results of data analyses published in the biomedical literature and b) perform basic statistical analyses. The focus is on communicating the knowledge necessary to decide on the appropriateness of particular statistical tests under different circumstances e.g. with non-normality, small samples, paired data. The **Epidemiology** component aims to introduce students to basic epidemiologic methods and their use. Students will learn basic principles of epidemiologic research. They will learn about measures of disease frequency and measures of association between risk factors and disease. They will be taught the different epidemiologic study design and biases potentially identified in epidemiologic studies and will also become familiar with interpreting epidemiologic data. The **Clinical Methodology** component of the course teaches the students principles of clinical research including the different types of clinical trials.

For all three components of the course, notes & publications will be provided by the lecturers.

Reading material for Epidemiology:

A Short Introduction to Epidemiology. Second Edition, N. Pearce. In electronic Pdf format. Will be provided to the students by the epidemiology instructor.

Epidemiology for the uninitiated. D. Coggon, G. Rose, DB Barker, In electronic MS word format. Will be provided to the students by the epidemiology instructor.

Recommended Biostatistics textbooks:

Medical Statistics At a Glance 3rd edition A. Petrie & C Sabin. Oxford: Blackwell Publishing, 2009 (and accompanying exercises on <http://www.medstatsaag.com>). ISBN: 978-1-4051-8051-1

Medical Statistics A Textbook for the Health Sciences 4th ed D Machin, MJ Campbell & Walters Wiley, 2007 ISBN-13: 978-0470025192

Further reading: Statistical Methods in Medical Research (4th edition). Armitage P, Berry G, Matthews JNS. Oxford: Blackwell Science 2002 (more advanced textbook)

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MBNA108-COURSE "BIOSTATISTICS, CLINICAL METHODOLOGY & EPIDEMIOLOGY"**

Date	Topic	Time/Room	Lecturer
Wednesday 26/11/14	Introduction to MM105	11:00-12:30 7A-0.2	J. Moschandreas
	EPIDEMIOLOGY Types of epidemiologic studies	12.30-15.30 7A-1.1	G. Bertias
Thursday 27/11/14	EPIDEMIOLOGY Measures of disease frequency (incidence, prevalence etc)	9:00-12:00 7A-0.1	G. Bertias
Friday 28/11/14	BIOSTATISTICS Descriptive Statistics	9:30-12:30 7A-0.1	J. Moschandreas
Monday 1/12/14	BIOSTATISTICS Descriptive Statistics (cont) /SPSS	9:30-12:30 7A-0.2 13:00-14:00 Computer Rm	J. Moschandreas
Tuesday 2/12/14	BIOSTATISTICS An introduction to statistical inference: Estimation, hypothesis testing, errors & sample size estimation	9:30-12:30 7A-0.1	J. Moschandreas
Wednesday 3/12/14	BIOSTATISTICS Statistical inference: Comparing groups with quantitative outcomes /SPSS	9:30-12:30 7A-0.1 13:00-14:00 Computer Rm	J. Moschandreas
Thursday 4/12/14	BIOSTATISTICS Statistical inference: Comparing groups with quantitative outcomes (cont) /SPSS	9:30-12:30 7A-0.4 13:00-14:00 Computer Rm	J. Moschandreas
Friday 5/12/14	EPIDEMIOLOGY Diagnostic tests (sensitivity, specificity, PPV, etc.)	14:00-17:00	G. Bertias
Monday 8/12/14	BIOSTATISTICS Statistical inference: Comparing groups with qualitative outcomes /SPSS	9:30-12:30 7A-1.1 13:00-14:00 Computer Rm	J. Moschandreas
Tuesday 9/12/14	BIOSTATISTICS Statistical inference: Comparing groups with qualitative outcomes (cont) / SPSS	9:30-12:30 7A-0.1 13:00-14:00 Computer Rm	J. Moschandreas
Wednesday 10/12/14	BIOSTATISTICS Statistical inference: Correlation	9:30-12:30 7A-0.1	J. Moschandreas
Thursday 11/12/14	BIOSTATISTICS Statistical inference: Regression / SPSS	9:30-12:00 7A-0.1 13:00-14:00 Computer Rm	J. Moschandreas
Friday 12/12/14	BIOSTATISTICS Statistical inference: Survival analysis / SPSS	9:30-12:30 7A-0.2 13:00-14:00 Computer Rm	J. Moschandreas
Monday 15/12/13	Introduction to Systematic Reviews and Meta-analysis / RevMan	9:00-11:30 7A-0.2 12:00-14:00 Computer Rm	E. Ntzani
Tuesday 16/12/13	Critical appraisal of the medical literature	9:00-11:00 7A-0.1	E. Ntzani
	Seminar "Validation and interpretation of large scale molecular data: The case of bone diseases"	12:00-13:00	E. Ntzani

	EPIDEMIOLOGY Confounding	13:00-15:00 7A-0.4	G. Bertσίας
Wednesday 17/12/13	CLINICAL METHODOLOGY Types of clinical trials (RCTs, etc.)	14:00-16:00 7A-0.1	N. Nikas
Thursday 18/12/13	BIOSTATISTICS & EPIDEMIOLOGY Presentations & Discussion	13:00-16:00 7A-0.1	J. Moschandreas/ G. Bertσίας
Monday 22/12/14	EXAM	10:00-12:00 7A-0.1	

Biostatistics modules. Sessions consist of lectures, pen & paper exercises, class discussion and computer practicals using the statistical package SPSS.

Epidemiology modules. Each session consists of a lecture followed by hands on practical exercises (pen & paper exercises) and discussion, which will illustrate and explain the theoretical section of the session.

Examination: Written exam consisting of multiple choice questions (in MCQ format) and questions requiring short answers and calculations.

Contact Information

	Position	E-mail
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