

Name of the module: Multivariate biostatistics and SPSS

Number of module: 471-8-4081

BGU Credits: 1.5

ECTS credits:

Academic year: 4th

Semester: 15 days during fall semester

Hours of instruction: 8:00-17:00

Location of instruction: Lecture rooms and computer laboratories

Language of instruction: Hebrew

Cycle: Master degree level

Position: Equivalent to two required courses in the Master degree program in Public Health (MPH): Biostatistics 1 and Biostatistics 2

Field of Education: Biostatistics, Epidemiology, Clinical Studies, and Data Analysis

Responsible department: Public Health department (epidemiology)

General prerequisites: Biostatistics 1 or an equivalent basic biostatistics course

Grading scale: percentage

Course Description:

Aims of the module: An introduction to advanced methods for statistical analysis (univariable and multivariable) and the application of statistical methods using SPSS software.

Objectives of the module:

The course is designed for MD students who are already familiar with basic statistical concepts, including descriptive statistics, the components of statistical inference (p values, hypothesis tests, confidence intervals, etc.). Specific topics will include linear regression models, logistic regression models, and Cox proportional hazards regression models for censored data.

The main objective of the module is to study and practice data analysis methods in epidemiological and clinical studies using SPSS software. Students will study the theoretical issues and will practice by working on different files of research data.

Learning outcomes of the module: On successful completion of the course, the student should be able to:

1. Understand the theoretical background of statistical univariable and multivariable analyses.
2. Identify the appropriate statistical analyses for different research questions.
3. Perform independent data analysis on research data using SPSS software.
4. Identify and interpret the parameters of interest in statistical analysis including linear, logistic, and proportional hazards regression models.
5. Write a clear and concise scientific report based on an analysis and its results.

Attendance regulation: Attendance in computer laboratories is required.

Teaching arrangement and method of instruction: Lectures and practice sessions in the computer laboratories.

Lecturer: Professor Amalia Levy

Contact details:

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Office hours: Sunday to Thursday
09:00- 17:00, by appointment only

Module evaluation: Final exam

Confirmation: the syllabus was
confirmed by the faculty academic
advisory committee to be valid on
2012 (academic year)

Last update: 11.2015

Assessment:

How the students will be assessed in the module

1. Final exam	100%
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100%

Work and assignments: Students are required to submit homework using the online e-learning system. At least 80% of the homework needs to be submitted in order to be able to take the final exam.

Time required for individual work: in addition to attendance in class, the students are expected to do their assignment and individual work:

The students are expected to spend approximately 35 hours throughout the module.

Module Content\ schedule and outlines:

Course topics: Chi-Square test, Student t test, Analysis of Variance (one-way, two-way, repeated measurements); Non-parametrical tests; Correlation and regression (Pearson and Spearman correlations, univariate and multiple regressions); Stratified analysis, Mantel-Haenszel analysis for computing weighted OR; Univariable and multivariable logistic regression analysis, Life tables, Log Rank test, survival analysis by KM procedure; Cox proportional hazards regression, and Sample Size and Power Calculations.

Required reading: Levy A, Perry Z. Advanced Data Analysis Using SPSS Software. Publisher: Ben-Gurion University of the Negev, 2003 (64 pages).

Additional literature:

1. Motulsky, H.: Intuitive Biostatistics. Oxford University Press, New York, 1995.
2. Glantz, S.A.: Primer of Biostatistics. McGraw-Hill (2nd ed.), 1989.
3. Dunn, Olive J.: Basic Statistics: A Primer for the Biomedical Sciences, John Wiley and Sons (2nd ed.) 1977.
4. Rosner, B.: Fundamentals of Biostatistics. Duxbury (5th ed.), 2000.

*** All learning material will be available to the students on the module's website (high-learn)/ library/ electronic documents available to BGU students.**

