

**H.U. INSTITUTE OF HEALTH SCIENCES
COURSE SYLLABUS**

PROGRAM NAME			BIOSTATISTICS		
CODE	BIS 605	TITLE	BIOSTATISTICS		
LECTURER (S)			PROF. REHA ALPAR, PhD PROF. ERGUN KARAAĞAOĞLU, PhD		
TYPE	<input checked="" type="checkbox"/> COMPULSORY <input type="checkbox"/> SELECTIVE	LANGUAGE	<input checked="" type="checkbox"/> TURKISH <input type="checkbox"/> ENGLISH	LEVEL	<input checked="" type="checkbox"/> MASTER OF SCI. <input type="checkbox"/> DOCTORATE <input type="checkbox"/> PREREQ. PREP.

THEORETICAL (HRS/WK)	3	PRACTICAL (HRS/WK)	0	H.U. CREDIT	3	ECTS CREDIT	7
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WHAT IS THE IMPORTANCE OF THIS COURSE IN THE PROGRAM'S LEARNING OBJECTIVES	
PRE-REQUISITE(S)	NONE
COURSE OBJECTIVES	Basic statistical concepts and methods are taught to students by examples and applications in health sciences. The course is conducted in a student orientated manner. Students are told to be prepared for the following week's topics. Students are asked to give and interpret examples related to their disciplines. Students' theoretical knowledge on specific topics is improved by exercises given as assignments. After the evaluation of these assignments, feedbacks are given to the students.
LEARNING OUTCOMES AND ACQUIRED COMPETENCES	Students of this course will be able to solve basic statistical problems and interpret the findings individually, understand and criticize statistical analysis used in the literature for their own study fields. After the completion of this course, students will have sufficient theoretical and practical basis required in advanced statistical courses.
COURSE CONTENT	Basic statistical definitions, descriptive measures of distributions, theoretical distributions, sampling distributions, basic research designs, basic sampling methods, hypothesis tests, linear regression, correlation and measures of risk.
COURSE SCHEDULE	Week 1 Definition of statistics and biostatistics, basic statistical definitions such as: population, sample, statistic, parameter, data, variable, types of data, and etc.
	Week 2 Descriptive statistics: classification of data, mean, location parameters, histogram, bar graph, stem & leaf graph and etc.

	Week 3	Descriptive statistics: measures of dispersion, box-plot graph, error bar, and etc.
	Week 4	Examination of association with the help of tables and graphics: Cross tables, tables regarding mean, multivariate applications of basic graphics, scatter plots, and etc.
	Week 5	Theoretical distributions: Normal distribution, binomial distribution, Poisson distribution. Tests and graphs of normality.
	Week 6	Sampling distributions and confidence intervals: sampling distribution of mean and ratio, confidence intervals, interpretation of confidence intervals.
	Week 7	Methods of research and sampling: types of researches, methods of sampling and their application fields.
	Week 8	Introduction to hypothesis tests: Definition and stages of hypothesis tests, possible types of errors, p and alpha values, decision making process, parametric and nonparametric hypothesis tests.
	Week 9	Hypothesis tests (Single sample tests)
	Week 10	Hypothesis tests (Independent two-sample tests)
	Week 11	Hypothesis tests (Dependent two-sample tests)
	Week 12	Hypothesis tests (Independent and dependent k sample tests)
	Week 13	Correlation and types of coefficient of correlation: Pearson, Spearman, phi, Cramer V, Eta, etc.
	Week 14	Simple and Multivariate Linear Regression Analysis
	Week 15	Measures of Risk
SUGGESTED COURSE MATERIAL		<p>1. Sümbüloğlu K ve Sümbüloğlu V. Biyoistatistik. Somgür Yayıncılık, Ankara, 2003.</p> <p>2. Özdamar K. SPSS ile Biyoistatistik. Kaan Kitabevi, Eskişehir, 1999.</p> <p>3. Alpar R. Spor Bilimlerinde Uygulamalı İstatistik. Nobel Yayın-Dağıtım, Ankara, 2001.</p>
TEACHING METHODS		Student orientated education: students are told to be prepared for the following week's topics. The students are encouraged to discuss the relevant topics with their classmates. Theoretical knowledge is supported by reviewing and criticizing articles with intensive statistical methods. Assignments are given to the students at the end of each lecture. By this way, theoretical knowledge of the student on the topic is supported by practical study.
ASSESSMENT METHODS		Final grade is given according to the performance on assignments (30%), mid-term exams (20%) and final exam (50%).

