COURSE PROFILE

Course Name	Code	Semester	Term	Theory +PS+Lab. (hour/week)	Local Credits	ECTS
Statistics 1	MATH 231	Fall	3	(3+0+0)	3	5

Prerequisites	None

Course Language	English
Course Type	Elective
Course Lecturer	• Assit.Prof.Melike Aydoğan
Course Assistant	• None
Course Objectives	The course aims to provide basic concepts of probability and statistics for business and economics
Course Learning Outcomes	By the end of this course, students will be able to: 1. recognize and articulate basic terms and concepts related to probability and statistics 2. distinguish between statistical and inferential statistics 3. distinguish between a discrete and a continuous probability distribution 4. demonstrate how to portray data graphically using a histogram 5. demonstrate how the Central Limit Theorem applies in inference 6. prepare a frequency distribution from raw data 7. interpret the meaning of a confidence interval 8. interpret the results of a one sample tests of hypothesis 9. combine probability and statistics for the purpose of making better predictions
Course Content	Introduction to statistics; describing data, frequency distributions, graphic presentation, numerical measures; probability concepts; discrete probability distributions; normal probability distribution; sampling methods; estimation and confidence intervals; one-sample hypotheses testing.

COURSE CONTENT

Week	Subjects	Related Preparation

1	Introduction, types of statistics, types of variables, levels of measurement constructing a frequency distribution, relative frequency distribution, histogram	1, 2
2	Frequency polygon, cumulative frequency distributions, stem and leaf displays, line graphs, bar charts, and pie charts	2
3	Measures of central tendency: mean, median, mode, midrange, measures of variation: range, mean deviation, variance and standard deviation, Chebyshev's theorem, symmetry and skewness, quartiles, deciles, and percentiles	3
4	Numerical measures: categorical variables, contingency table and scatter diagram, further properties of mean and variance	3
5	Probability concepts: definitions, approaches to probability, rules of addition and multiplication, contingency tables, simple probability vs. conditional probability, Bayes's rule and tree diagrams, principles of counting, permutations and combinations	4
6	Discrete probability distributions,The mean,variance,and standard deviation of a Prob.Distriution the binomial probability distribution,	5
7	Cumulative binomial probability distribution,Hypergeometric Prob.Distribution, poisson prob. Distribution, problem solving	5
8	Continuous probability distributions: the family of normal probability distributions, standard normal distribution, applications, z-scores and the normal distribution.	6
9	Normal approximation to the binomial, continuity correction Sampling methods and the central limit theorem: sampling methods, sampling distribution of the sample mean,the central limit theorem.	6, 7
10	Using the sampling distribution of the sample mean; Estimation and confidence intervals, point estimates and confidence intervals, student's t distribution confidence interval for a proportion	7, 8
11	Student's t distribution confidence interval for a proportion,finite-population correction factor,choosing an appropriate sample size.	8
12	Chapter 6,7,8 overview	-
13	One-sample tests of a hypothesis,five-step procedure for testing a hypothesis,one-tailed and two-tailed tests of significance,testing for a population mean with a known population standard deviation	9
14	p-value in hypotheses testing, small sample, unknown population standard deviation	9

Course Textbooks	DA Lind, WG Marchal, SA Wathen, *Statistics for Business and Economics,* 7th ed. McGraw-Hill KELLER , G., STATISTICS FOR MANAGEMENT AND ECONOMICS, 8th ed., South-Western College Pub (January 8, 2008).
Recommended References	**1.** MCCLAVE-SINCICH., STATISTICS, Eleventh Edition.,Pearson Prentice Hall (2009) **2.** **2** KELLER , G., STATISTICS FOR MANAGEMENT AND ECONOMICS, 8th ed., South-Western College Pub (January 8, 2008). **and** Other Statistics books

Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	14	5
Laboratory	-	-
Application	-	-
Special Course Internship (Work Placement)	-	-
Quizzes/Studio Critics	-	-
Homework Assignments	13	-
Presentation	-	-
Project	-	-
Seminar/Workshop	-	-
Midterms/Oral Exams	2	60
Final/Resit Exam	1	35
Total	30	100

PERCENTAGE OF SEMESTER WORK	29	65
PERCENTAGE OF FINAL WORK	1	35
Total	30	100

Course Category	Core Courses	
	Major Area Courses	X

	Supportive Courses	
	Media and Managment Skills Courses	
	Transferable Skill Courses	

COURSE'S CONTRIBUTION TO PROGRAM

#	**Program Qualifications / Outcomes**	*** Level of Contribution**				
		1	2	3	4	5
1	To have a grasp of basic mathematics, applied mathematics and theories and applications of statistics.					X
2	To be able to use theoretical and applied knowledge acquired in the advanced fields of mathematics and statistics,					X
3	To be able to define and analyze problems and to find solutions based on scientific methods,					X
4	To be able to apply mathematics and statistics in real life with interdisciplinary approach and to discover their potentials,				X	
5	To be able to acquire necessary information and to make modeling in any field that mathematics is used and to improve herself/himself,				X	
6	To be able to criticize and renew her/his own models and solutions,					X
7	To be able to tell theoretical and technical information easily to both experts in detail and nonexperts in basic and comprehensible way,				X	
8	To be able to use international resources in English and in a second foreign language from the European Language Portfolio (at the level of B1) effectively and to keep knowledge up-to-date, to communicate comfortably with colleagues from Turkey and other countries, to follow periodic literature,				X	
9	To be familiar with computer programs used in the fields of mathematics and statistics and to be able to use at least one of them effectively at the European Computer Driving Licence Advanced Level,					X
10	To be able to behave in accordance with social, scientific and ethical values in each step of the projects involved and to be able to introduce and apply projects in terms of civic engagement,				X	
11	To be able to evaluate all processes effectively and to have enough awareness about quality management by being conscious and having intellectual background in the universal sense,				X	

12	By having a way of abstract thinking, to be able to connect concrete events and to transfer solutions, to be able to design experiments, collect data, and analyze results by scientific methods and to interfere,					X
13	To be able to continue lifelong learning by renewing the knowledge, the abilities and the compentencies which have been developed during the program, and being conscious about lifelong learning,			X		
14	To be able to adapt and transfer the knowledge gained in the areas of mathematics and statistics to the level of secondary school,				X	
15	To be able to conduct a research either as an individual or as a team member, and to be effective in each related step of the project, to take role in the decision process, to plan and manage the project by using time effectively.					X

*1 Lowest, 2 Low, 3 Average, 4 High, 5 Highest

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION

Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course Hours (Including Exams)	14	3	48
Tutorials	-	-	-
Laboratory	-	-	-
Application	-	-	-
Special Course Internship (Work Placement)	-	-	-
Field Work	-	-	-
Study Hours Out of Class	14	2	28
Presentations / Seminar	-	-	-
Project	-	-	-
Preparatory reading	13	1	13
Homework Assignments	13	1	13
Quizzes	-	-	-
Midterm Exams	2	6	12

Final / Resit Exam	1	11	11
		Total Workload	**125**

COURSE CATEGORY

ISCED GENERAL AREA CODES	**GENERAL AREAS**	**ISCED BASİC AREA CODES**	**BASIC EDUCATIONAL AREAS**	
1	Education	14	Teacher Training and Educational Sciences	0
2	Humanities and Art	21	Art	0
2	Humanities and Art	22	Humanities	0
3	Social Sciences, Management and Law	31	Social and Behavioral Sciences	0
3	Social Sciences, Management and Law	32	Journalism and Informatics	0
3	Social Sciences, Management and Law	38	Law	0
4	Science	42	Life Sciences	0
4	Science	44	Natural Sciences	0
4	Science	46	Mathematics and Statistics	100
4	Science	48	Computer	0
5	Engineering, Manufacturing and Civil	52	Engineering	0
5	Engineering, Manufacturing and Civil	54	Manufacturing and Processing	0
5	Engineering, Manufacturing and Civil	58	Architecture and Structure	0
6	Agriculture	62	Agriculture, Forestry, Livestock, Fishery	0
6	Agriculture	64	Veterinary	0
7	Medicine and Welfare	72	Medical	0
7	Medicine and Welfare	76	Social Services	0
8	Service	81	Personal Services	0
8	Service	84	Transport Services	0

8	Service	85	Environment Protection	0
8	Service	86	Security Services	0