OSTIM TECHNICAL UNIVERSITY
FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES
MANAGEMENT INFORMATION SYSTEMS DEPARTMENT
COURSE SYLLABUS FORM

MIS 215 Statistics I							
Course Name	**Course Code**	**Period**	**Hours**	**Application**	**Laboratory**	**Credit**	**ECTS**
Statistics I	MIS 215	3	2	1	0	3	5

Language of Instruction	English
Course Status	Compulsory
Course Level	Bachelor
Learning and Teaching Techniques of the Course	Lecture, Question-Answer, Problem Solving, Computer Applications

Course Objective
This course intends to teach basic rules of Statistics Science combined with statistical empirical examples related to economy by using R, E Views and Microsoft Office Excel programs. Data analyses, probability and probability distributions and hypothesis test are provided in detail. Additionally, the basic concepts of Ordinary Least Squares are explained both theoretically and empirically with general economic theory-based examples.

Learning Outcomes
Student, who passed the course satisfactorily will be able: 1- to master the basic concepts of statistics 2- to understand the frequency distributions, measures of central tendency and variability 3- to calculate confidence intervals and correlations. 4- to learn about conditional probability, discrete and continuous probability distributions 5- to use discrete and continuous probability distributions. 6- to test correctness of hypothesis 7- to be able to perform statistical data analysis

Course Outline
This course deals with frequency distributions, measures of central tendency and variability, basic theorems of probability, independent and joint events, conditional probability, discrete probability distributions, normal distributions, sampling distributions, Hypothesis Tests and Simple Regression Analysis.

Weekly Topics and Related Preparation Studies		
Weeks	**Topics**	**Preparation Studies**
1	Statistics, Data and Data Visualization (Doane and Seward, Chapters: 1,2,3) (Leekly, Chapters: 1,2)	Importance of Statistics Data types Frequency distributions Relative frequency, Cumulative relative frequency
2	Statistics, Data and Data Visualization (Doane and Seward, Chapters: 1,2,3) (Leekly, Chapters: 1,2)	Sampling methods Surveys Stem and Leaf displays and Dot plots Scatter plots, Bar and Pie charts Tables and graphs
3	Numerical Descriptive Measures (Doane and Seward, Chapter: 4) (Leekly, Chapter: 3)	Measures of central tendency, Measures of central variability, Data standardization
4	Numerical Descriptive Measures (Doane and Seward, Chapter: 4) (Leekly, Chapter: 3)	Percentiles, Quantiles and Box Plots Interquartile ranges, Box plots, Z score, Correlation and covariance Grouped data Skewness and kurtosis
5	Probability and Probability Distributions (Doane and Seward, Chapters: 5,6,7) (Leekly, Chapters: 4,5)	Experiments and events Rules of probability Conditional and marginal probability Independent and mutually exclusive events Bayes' Theorem
6	Probability and Probability Distributions (Doane and Seward, Chapters: 5,6,7) (Leekly, Chapters: 4,5)	Discrete probability distribution Uniform distribution, Binominal distribution, Poisson distribution, Geometric distribution and Hypergeometric distribution
7	Probability and Probability Distributions (Doane and Seward, Chapters: 5,6,7) (Leekly, Chapters: 4,5)	Continuous Probability distribution Uniform Continuous distribution, Normal distribution, Standard Normal distribution, Exponential distribution
8	**MIDTERM EXAM**	

9	Sampling Distribution and Estimation (Doane and Seward, Chapter: 8) (Leekly, Chapter: 7)	Sampling and estimation Central Limit Theorem Confidence interval estimations
10	Hypothesis Tests (Doane and Seward, Chapters: 9,10) (Leekly, Chapter: 8,9)	Type I and Type II Errors One tailed and two tailed tests Decision rule
11	Hypothesis Tests (Doane and Seward, Chapters: 9,10) (Leekly, Chapter: 8,9)	Two population hypothesis tests One tailed and two tailed tests Decision rule
12	Simple Regression Analysis (Doane and Seward, Chapter:12) (Leekly, Chapter: 12)	Visual displays and correlation analysis Calculating intercept and slope Ordinary Least Square formulas
13-14	Simple Regression Analysis Doane and Seward, Chapter:12) (Leekly, Chapter: 12)	Tests for significance Residual tests Making Predictions
15	**FINAL EXAM**	

Textbook(s)/References/Materials:
Textbook: David P. Doane and Lori E. Seward, Applied Statistics in Business and Economics, Publisher: Mc Graw-Hill Education, 7th Edition, 2022.
Supplementary References: Robert M. Leekley, Applied Statistics for Business and Economics, Publisher:Taylor & Francis Group,2020
Other Materials: -

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance		
Lab		
Class participation and performance	**1**	**15**
Field Study		
Course-Specific Internship (if any)		
Quizzes / Studio / Critical		
Homework	**1**	**15**
Presentation		
Projects		
Report		
Seminar		
Midterm Exam/Midterm Jury	**1**	**20**
General Exam / Final Jury	**1**	**50**
Total		**100**
Success Grade Contribution of Semester Studies		**50**
Success Grade Contribution of End of Term		**50**
Total		**100**

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course hours (Including the exam week): 15 x total course hours)	15	3	45
Laboratory			
Application	15	1	15
Course-Specific Internship (if any)			
Field Study			
Study Time Out of Class	15	3	45
Presentation / Seminar Preparation			
Projects			
Reports			
Homework			
Quizzes / Studio Review			
Preparation Time for Midterm Exams / Midterm Jury	1	30	30
Preparation Period for the Final Exam / General Jury	1	30	30
Total Workload	**(165/30 =5,50)**		**165**

Course' Contribution Level to Learning Outcomes							
Nu	**Learning Outcomes**	**Contribution Level**					
		1	**2**	**3**	**4**	**5**
LO1	to master the basic concepts of statistics					X
LO2	to understand the frequency distributions, measures of central tendency and variability					X
LO3	to calculate confidence intervals and correlations					X
LO4	to learn about conditional probability, discrete and continuous probability distributions					X
LO5	to use discrete and continuous probability distributions.					X
LO6	to test correctness of hypothesis					X
LO7	to be able to perform statistical data analysis					X

Relationship Between Course Learning Outcomes and Program Competencies (Department of Management Information Systems)									
Nu	**Program Competencies**	**Learning Outcomes**							**Total Effect (1-5)**
		LO1	**LO2**	**LO3**	**LO4**	**LO5**	**LO6**	**LO7**	
1	Recognize and distinguish the basic concepts such as data, information, and knowledge in the field of Management Information Systems and know the processes to be followed for data acquisition, storage, updating, and security	x	x	x	x	x	x	x	**5**
2	Develop and manage databases suitable for collecting, storing, and updating data								
3	As a result of his/her ability to think algorithmically, easily find solutions to the problems concerning the basic business functions	x	x	x	x	x	x	x	**5**
4	Learn programming logic, have information about current programming languages								
5	Be able to use up-to-date programming languages								
6	Be able to take part in teamwork or lead a team using knowledge of project management processes								
7	Know ethical and legal rules, use professional field knowledge within the scope of ethical and legal rules								
8	Have knowledge in the fundamental areas of business administration namely management and organization, production, finance, marketing, numerical methods, accounting, etc., and have the knowledge and skills to								

	work in-depth in at least one of them							
9	Be able to solve the problems encountered in the field of internet programming by designing web applications							
10	Develop and manage logistics and supply chain management activities.							
11	Adapt his/her theoretical knowledge and the experience he/she will gain through practice at the departments of businesses such as information technologies, R&D, and management to real life.							
12	Be able to develop strategies that will provide a competitive advantage with his/her advanced knowledge of management strategies and management functions							
13	Develop a business idea, commercialize the business idea, and design and manage his/her own venture using entrepreneurial knowledge							
14	By using English effectively, they can follow, read, write, speak and communicate universal information in the field of management information systems in a foreign language with professional competence.							
Total Effect								**10**

Policies and Procedures
Web page: https://www.ostimteknik.edu.tr/management-information-systems-english-1241/915
Exams: The exams aim at assessing various dimensions of learning: knowledge of concepts and theories and the ability to apply this knowledge to real-world phenomena, through analyzing the situation, distinguishing problems, and suggesting solutions. The written exams can be of two types, ie. open-ended questions, which can also be in the form of problems or multiple-choice questions.
Assignments: Homework (Assignments) might be applicable. Scientific Research Ethics Rules are very important while preparing assignments. The students should be careful about citing any material used from outside sources and reference them appropriately.
Missed exams: Any student missing an exam needs to bring an official medical report to be able to take a make-up exam. The medical report must be from a state hospital.
Projects: Not applicable.
Attendance: Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term.
Objections: If the student observes a material error in his/her grade, he/she has the right to place an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome.