

Medicine			
Bachelor	TR-NQF-HE: Level 7	QF-EHEA: Second Cycle	EQF-LLL: Level 7

Course Introduction and Application Information

Course Code:	UNI327		
Course Name:	Data Analysis with R		
Semester:	Spring Fall		
Course Credits:	<div>ECTS</div> <div>5</div>		
Language of instruction:	Turkish		
Course Condition:			
Does the Course Require Work Experience?:	No		
Type of course:	University Elective		
Course Level:	<div>Bachelor</div> <div>TR-NQF-HE:7. Master`s Degree</div> <div>QF- EHEA:Second Cycle</div> <div>EQF-LLL:7. Master`s Degree</div>		
Mode of Delivery:	E-Learning		
Course Coordinator:	Öğr. Gör. AYŞEGÜL ÇALIŞKAN İŞCAN		
Course Lecturer(s):	Dr. Ayşegül Çalışkan İşcan		
Course Assistants:			

Course Objective and Content

Course Objectives:	This course aims to teach the R programming language at a basic level.
Course Content:	This course includes basic elements of R programming languages.

Learning Outcomes

The students who have succeeded in this course;

- 1) Have knowledge about R programming language
- 2) Learns R programming language at a basic level.
- 3) Can analyze any data by using R language.
- 4) Can understand and manipulate any R code.
- 5) Can make statistical analysis by using R language.

Course Flow Plan

Week	Subject	Related Preparation
1)	Course overview	
2)	R Arithmetic, Atomic Data Types	
3)	Variables, Vectors	
4)	Matrices	
5)	Lists, Data Frames	
6)	Factors, Reading and Writing Data	
7)	Exercises, Lesson Repetition	
8)	Mid-term Week	
9)	Control flow, functions	
10)	Exploring and Preparing Data	
11)	Working with text data	
12)	Preparing Numeric Data, Dealing with Dates	
13)	Merging data, Frequency tables	
14)	Plotting in Base R, plotting with ggplot2	

Sources

Course Notes / Textbooks:	1. Mark Gardener - Beginning R_ The Statistical Programming Language-Wrox 2. Tony Fischetti - Data Analysis with R_ Load, wrangle, and analyze your data using the world's most powerful statistical programming language-Packt Publishing (2015)
References:	1. Mark Gardener - Beginning R_ The Statistical Programming Language-Wrox 2. Tony Fischetti - Data Analysis with R_ Load, wrangle, and analyze your data using the world's most powerful statistical programming language-Packt Publishing (2015)

Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4	5
Program Outcomes					
1) When Istinye University Faculty of Medicine student is graduated who knows the historical development of medicine, medical practices, and the medical profession and their importance for society.					
2) knows the normal structure and function of the human body at the level of molecules, cells, tissues, organs and systems.					
3) is capable of systematically taking an accurate and effective social and medical history from their patients and make a comprehensive physical examination.					
4) knows the laboratory procedures related to diseases; In primary care, the necessary material (blood, urine, etc.) can be obtained from the patient with appropriate methods and can perform the necessary laboratory procedures for diagnosis and follow-up or request laboratory tests.					
5) can distinguish pathological changes in structure and functions during diseases from physiological changes and can Interpret the patient's history, physical examination, laboratory and imaging findings, and arrive at a pre-diagnosis and diagnosis of the patient's problem.					
6) knows, plans and applies primary care and emergency medical treatment practices, rehabilitation stages.					
7) can keep patient records accurately and efficiently, know the importance of confidentiality of patient information and records, and protects this privacy.					
8) knows the clinical decision-making process, evidence-based medicine practices and current approaches.					
9) knows and applies the basic principles of preventive health measures and the protection of individuals from diseases and improving health, and recognizes the individual and/or society at risk, undertakes the responsibility of the physician in public health problems such as epidemics and pandemics.					
10) knows the biopsychosocial approach, evaluates the causes of diseases by considering the individual and his / her environment.					
11) is capable of having effective oral and/or written communication with patients and their relatives, society and colleagues.					
12) knows the techniques, methods and rules of researching. It contributes to the creation, sharing, implementation and development of new professional knowledge					

and practices by using science and scientific method within the framework of ethical rules. Course Learning Outcomes	1	2	3	4	5
13) can collect health data, analyze them, present them in summary, and prepare forensic reports.					
14) knows the place of physicians as an educator, administrator and researcher in delivery of health care. It takes responsibility for the professional and personal development of own and colleagues in all interdisciplinary teams established to increase the health level of the society.					
15) knows employee health, environment and occupational safety issues and takes responsibility when necessary.					
16) knows health policies and is able to evaluate their effects in the field of application.					
17) keeps medical knowledge up-to-date within the framework of lifelong learning responsibility.					
18) applies own profession by knowing about ethical obligations and legal responsibilities, prioritizing human values and with self-sacrifice throughout own medical life.					

Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	When Istinye University Faculty of Medicine student is graduated who knows the historical development of medicine, medical practices, and the medical profession and their importance for society.	
2)	knows the normal structure and function of the human body at the level of molecules, cells, tissues, organs and systems.	
3)	is capable of systematically taking an accurate and effective social and medical history from their patients and make a comprehensive physical examination.	
4)	knows the laboratory procedures related to diseases; In primary care, the necessary material (blood, urine, etc.) can be obtained from the patient with appropriate methods and can perform the necessary laboratory procedures for diagnosis and follow-up or request laboratory tests.	

5)	can distinguish pathological changes in structure and functions during diseases from physiological changes and can Interpret the patient's history, physical examination, laboratory and imaging findings, and arrive at a pre-diagnosis and diagnosis of the patient's problem.	
6)	knows, plans and applies primary care and emergency medical treatment practices, rehabilitation stages.	
7)	can keep patient records accurately and efficiently, know the importance of confidentiality of patient information and records, and protects this privacy.	
8)	knows the clinical decision-making process, evidence-based medicine practices and current approaches.	
9)	knows and applies the basic principles of preventive health measures and the protection of individuals from diseases and improving health, and recognizes the individual and/or society at risk, undertakes the responsibility of the physician in public health problems such as epidemics and pandemics.	
10)	knows the biopsychosocial approach, evaluates the causes of diseases by considering the individual and his / her environment.	
11)	is capable of having effective oral and/or written communication with patients and their relatives, society and colleagues.	
12)	knows the techniques, methods and rules of researching. It contributes to the creation, sharing, implementation and development of new professional knowledge and practices by using science and scientific method within the framework of ethical rules.	
13)	can collect health data, analyze them, present them in summary, and prepare forensic reports.	
14)	knows the place of physicians as an educator, administrator and researcher in delivery of health care. It takes responsibility for the professional and personal development of own and colleagues in all interdisciplinary teams established to increase the health level of the society.	
15)	knows employee health, environment and occupational safety issues and takes responsibility when necessary.	
16)	knows health policies and is able to evaluate their effects in the field of application.	
17)	keeps medical knowledge up-to-date within the framework of lifelong learning responsibility.	
18)	applies own profession by knowing about ethical obligations and legal responsibilities, prioritizing human values and with self-sacrifice throughout own medical life.	

Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Application	13	% 20
Midterms	1	% 30
Final	1	% 50
total		% 100
PERCENTAGE OF SEMESTER WORK		% 50
PERCENTAGE OF FINAL WORK		% 50
total		% 100

Workload and ECTS Credit Calculation

Activities	Number of Activities	Workload
Course Hours	15	45
Study Hours Out of Class	16	16
Project	1	8
Midterms	1	1
Total Workload		70