

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

Course Introduction and Application Information

Course Code:	TIP059		
Course Name:	Principles and Applications of Analytical Research Methods		
Semester:	Fall Spring		
Course Credits:	<div>ECTS</div> <div>2</div>		
Language of instruction:	Turkish		
Course Condition:			
Does the Course Require Work Experience?:	No		
Type of course:	Departmental Elective		
Course Level:	<div> <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> </div>		
Mode of Delivery:	E-Learning		
Course Coordinator:	Dr. Öğr. Üy. ESMA NUR OKATAN		
Course Lecturer(s):	Esma Nur Okatan		
Course Assistants:			

Course Objective and Content

Course Objectives:	The main purpose of the course is to enable students to adapt more easily to evidence-based medicine practices and to better understand the current scientific data published in their fields. In addition, encouraging students to participate in scientific research projects is one of the aims of this course.

Course	Introduction to research methodology
Content:	Immunological techniques Microscopy and application areas Bioluminescence and application areas Electrophysiological recording methods Radioactive isotopes and applications Spectroscopy and application areas In vivo experimental disease models In vitro experimental disease models Cellular Signaling

Learning Outcomes

The students who have succeeded in this course;

- 1) To have basic knowledge of basic medical science research methods
- 2) To be able to understand the main ideas of scientific research articles
- 3) Reinforcement of basic knowledge learned in committee lectures with clinical and research examples
- 4) Familiarity with preparing scientific reports with the assignments they have prepared

Course Flow Plan

Week	Subject	Related Preparation
1)	Introduction to research methodology	
2)	Immunological techniques-I	
3)	Immunological techniques-II	
4)	Microscopy and its applications-I	
5)	Microscopy and its applications-II	
6)	Bioluminescence and its applications	
7)	Electrophysiological Recording Techniques-I	
8)	Electrophysiological Recording Techniques-II	
9)	Discussion of assignments	
10)	Radioactive isotopes and its applications	
11)	Spectroscopy and its applications-I	
12)	Spectroscopy and its applications-II	

13)	In vivo experimental disease models	
14)	In vitro experimental disease models	
15)	Cell Signaling-I	
16)	Cell Signaling-II	
17)		

Sources

Course Notes / Textbooks:	<p>Helmut Giinzler and Alex Williams Handbook of Analytical Techniques 2002 Wiley,</p> <p>Roitt's Essential Immunology, Thirteenth Edition. Peter J. Delves, Seamus J. Martin,Dennis R. Burton, and Ivan M. Roitt.</p> <p>© 2017 John Wiley & Sons Ltd. Published 2017 by John Wiley & Sons Ltd.Companion</p> <p>https://pubmed.ncbi.nlm.nih.gov/</p>
References:	<p>Helmut Giinzler and Alex Williams Handbook of Analytical Techniques 2002 Wiley,</p> <p>Roitt's Essential Immunology, Thirteenth Edition. Peter J. Delves, Seamus J. Martin,Dennis R. Burton, and Ivan M. Roitt.</p> <p>© 2017 John Wiley & Sons Ltd. Published 2017 by John Wiley & Sons Ltd.Companion</p> <p>https://pubmed.ncbi.nlm.nih.gov/</p>

Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4
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.				
Course Learning Outcomes	1	2	3	4
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.	1	2	3	4
Course Learning Outcomes				

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.	
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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
Homework Assignments	2	% 100
total		% 100
PERCENTAGE OF SEMESTER WORK		% 100
PERCENTAGE OF FINAL WORK		%
total		% 100

Workload and ECTS Credit Calculation

Activities	Number of Activities	Preparation for the Activity	Spent for the Activity Itself	Completing the Activity Requirements	Workload
Course Hours	2	2	2	16	40

Homework Assignments	2	2	2	2	12
Total Workload					52