

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

## Course Introduction and Application Information

Course Code:	TIP012		
Course Name:	Medical Systems and Innovation		
Semester:	Fall Spring		
Course Credits:	<div>ECTS</div> <div>1</div>		
Language of instruction:			
Course Condition:			
Does the Course Require Work Experience?:	Yes		
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:	Prof. Dr. HİKMET KOÇAK		
Course Lecturer(s):	HASAN ONUR KELEŞ		
Course Assistants:			

## Course Objective and Content

Course Objectives:	<p>To provide the student with a clear and logical presentation of the basic concepts and principles of engineering problem solving and interdisciplinary research</p> <p>To strengthen an understanding of the concepts and principles through a broad range of interesting real-world applications</p>

Course	To develop strong problem-solving skills through an effectively organized approach, To learn how
Content:	to work with engineers

## Learning Outcomes

The students who have succeeded in this course;

- 1) Having knowledge on engineering and interdisciplinary research
- 2) Learning how to solve problems using engineering approach
- 3) Having knowledge on interdisciplinary Real World applications
- 4) Having knowledge on working with engineers

## Course Flow Plan

Week	Subject	Related Preparation
1)	Introduction, Engineering Problem Solving	
2)	Interdisciplinary research and Inovation	
3)	How to work with Engineers	
4)	Brain Research -1	
5)	Brain Research -2	
6)	Brain Research - 3	
7)	Nano-Micro Technologies	
8)	Nano-Micro Technologies	
9)	Biomedical Instrumentation	
10)	Tissue Engineering and its applications	
11)	Bioinformatics	
12)	Success Stories	
13)	Presenation 1	
14)	Presentation 2	

## Sources

Course Notes / Textbooks:	Ders notları / Lecture notes
References:	DÜNYADA VE TÜRKİYE'DE TIBBİ CİHAZ SEKTÖRÜ VE STRATEJİ ÖNERİSİ, Kavramlar,

Dünyada Durum ve Ülke Örnekleri, Türkiye’de Durum,

Analizler ve Strateji Önerisi, Aralık 2018

Innovation Management: Effective Strategy and Implementation (İnovasyon Yönetimi: Etkili Strateji ve Uygulama) Keith Goffin ve Rick Mitchell,

Innovation and Entrepreneurship (İnovasyon ve Girişimcilik), Peter F. Drucker

## 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.				
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.				
<b>Course Learning Outcomes</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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.				

### 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	1	% 30
Project	1	% 20
Final	1	% 50
<b>total</b>		<b>% 100</b>
PERCENTAGE OF SEMESTER WORK		% 50
PERCENTAGE OF FINAL WORK		% 50
<b>total</b>		<b>% 100</b>

### 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	0	1	15	32
Study Hours Out of Class	1	0	1	1	2
Project	1	1	2	5	8
Homework Assignments	1	1	2	5	8
Final	1	2	2	1	5
<b>Total Workload</b>					<b>55</b>