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

Course Introduction and Application Information

Course Code:	UNI326
Course Name:	Digital Technologies in Health
Semester:	Spring Fall
Course Credits:	ECTS 5
Language of instruction:	Turkish
Course Condition:	
Does the Course Require Work Experience?:	No
Type of course:	University Elective
Course Level:	Bachelor / TR-NQF-HE:7. Master`s Degree / QF-EHEA:Second Cycle / EQF-LLL:7. Master`s Degree
Mode of Delivery:	E-Learning
Course Coordinator:	Dr. EMEL GÜMÜŞ
Course Lecturer(s):	Dr.Emel Gümüş
Course Assistants:	

Course Objective and Content

Course Objectives:	In this course; Artificial Intelligence and Digital Technologies in Health Sciences to have a basic level of knowledge about technology and to use technology use, cooperation in multidisciplinary work Providing and integrating work with digital technologies

	is intended.
Course Content:	Students who successfully complete this course will;
	1. will be able to work on digital technologies and Artificial Intelligence in health care can express/explain basic knowledge orally/written.
	2. Describe the so-called disruptive technology in healthcare can present the concepts and applications in oral/written form.
	3. will be able to present the digital technology and other related define concepts and make connections between them can explain.
	4. Define and discuss innovative thinking.
	5. Technological solution in health care issues with entrepreneurial spirit. develop and implement recommendations.
	6. There is a relationship between the concepts of technology, innovation and entrepreneurship. compare/contrast the connections/similarities and differences can explain.
	7. Have the necessary equipment for technology-based projects students bring their ideas to life with innovative and entrepreneurial spirit List/group the basic steps to be able to pass the ethical and legal issues.
	8. Have knowledge about Ethical and Legal Issues and to be able to make evaluation,
	9. Communication and Collaboration in Health Services
	10. Assessment of New Trends and Future Perspectives will be able to do it.

Learning Outcomes

The students who have succeeded in this course;

1) 1. will be able to work on digital technologies and Artificial Intelligence in health care can express/explain basic knowledge orally/written.

2) 2. Describe the so-called disruptive technology in healthcare can present the concepts and applications in oral/written form.

3) 3. will be able to present the digital technology and other related define concepts and make connections between them can explain.

4) 4. Define and discuss innovative thinking.

5) 5. Technological solution in health care issues with entrepreneurial spirit. develop and implement recommendations.

6) 6. There is a relationship between the concepts of technology, innovation and entrepreneurship. compare/contrast the connections/similarities and differences can explain.

7) 7. Have the necessary equipment for technology-based projects students bring their ideas to life with innovative and entrepreneurial spirit List/group the basic steps to be able to pass the ethical and legal issues.

8) 8. Have knowledge about Ethical and Legal Issues and to be able to make evaluation,

9) 9. Communication and Collaboration in Health Services

10) 10. Assessment of New Trends and Future Perspectives will be able to do it.

Course Flow Plan

Week	Subject	Related Preparation
1)	Meeting Students • Introduction: Comprehensive explanation of course content, evaluation methods and expectations.	
2)	Introduction to Digital Technologies in Healthcare • Industry 4.0 and Digital Transformation • Development of digital technologies in Healthcare	
3)	Use of technology in Health Services, • Concept of Artificial Intelligence? • Artificial Intelligence learning methods and biases	
4)	Mobile Applications, • Wearable Technologies • Internet of things (IoT)	
5)	Virtual and augmented reality, BloczincirAR, VR, XR Technologies	
6)	Being a healthcare professional in the digital age and digital health literacy	
7)	Improving Quality of Care and changing quality of care The role of artificial intelligence and innovation	
8)	Midterm week	
9)	Digital Story and Gamification in Health • Preparing educational programs for children	
10)	Digital Story and Gamification in Health • Preparing educational programs for children	
11)	Entrepreneurship and Project Design Ability in the Health Ecosystem Artificial Intelligence Project Examples in Health	
12)	Artificial Intelligence Robot Technologies, Robot Nurses, Robot Doctors, Children and Robots	
13)	Telehealth, telemedicine, electronic health records, big data	
14)	Addictions – Technology addiction and things to watch out for points, specifically for parents and children	
15)	Final week	

Sources

Course Notes / Textbooks:	Ders notları kullanılacak * Ders kitabı zorunlu değil
References:	*"Digital Transformation: Build Your Organization's Future for the

Innovation Age" - Lindsay Herbert
* "The Fourth Industrial Revolution" - Klaus Schwab
* "Healthcare Disrupted: Next Generation Business Models and Strategies" - Jeff Elton, Anne O'Riordan

*Sağlık Bilimlerinde Yapay Zekâ. (2019). Melih Bulut, Nevit Dilmen,

Gökhan Bora Esmer, Murat Gezer, Çiğdem Selçukcan Erol, Leyla Türker Şener (Ed.). İstanbul: Çağlayan Kitabevi.
*Tıp Bilişimi. (2021). Nilgün Bozbuğa, Sevinç Gülseçen. (Ed.). İstanbul: İstanbul University Press. Sağlıkta İleri Teknoloji. (2019). Mustafa Said Yıldız (Ed.). Ankara: Nobel Yayınevi.

Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10
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,										

Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10
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. Course Learning Outcomes	1	2	3	4	5	6	7	8	9	10
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
Attendance	14	% 20
Quizzes	3	% 20
Final	1	% 60

total		% 100
PERCENTAGE OF SEMESTER WORK		% 40
PERCENTAGE OF FINAL WORK		% 60
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	14	2	1		42
Midterms	1	30	1		31
Final	1	30	1		31
Total Workload					**104**