

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

Course Introduction and Application Information

Course Code:	TIP045		
Course Name:	Cellular Immunotherapy 2		
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:	Face to face		
Course Coordinator:	Dr. Öğr. Üy. AYCA ZEYNEP İLTER		
Course Lecturer(s):	Ayca İlter, Özgür Tataroğlu		
Course Assistants:			

Course Objective and Content

Course Objectives:	To give information about the cellular-based and drug- based treatments developed for immunotherapy as a new generation treatment model for cancer in medicine, and their clinical use
Course	Introduction to immunotherapy, cellular target mechanism of drugs used in immunotherapy, the

Content:	role of genetically modified cells in cellular therapy and cancer treatment, surface markers targeted for cancer cells in cellular immunotherapy, side effects of recently developed cellular therapies, introduction to cell culture, introduction of equipment and materials used in cell culture, gain hands-on experience in cell passaging, counting, and cryopreservation
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Learning Outcomes

The students who have succeeded in this course;

- 1) To learn about the interaction of the immune system and cancer cells and to learn the mechanism of action developed drugs in a cellular manner
- 2) Gain knowledge about cancer cell surface markers targeted in cellular therapies
- 3) Understanding the role of cellular therapies in the treatment of diseases
- 4) To learn about the role of gene therapy in next generation cellular therapies
- 5) Putting the learned theoretical knowledge into practice by performing simple cell culture-based laboratory practices

Course Flow Plan

Week	Subject	Related Preparation
1)	Introduction to immunotherapy	
2)	Drugs used in immunotherapy and their mechanisms at the cellular level	
3)	Treating cancer with engineered immune cells in cancer immunotherapy	
4)	Current methods used in genome modification of immune cells	
5)	Cancer cell surface markers targeted in cellular immunotherapy	
6)	From laboratory bench to clinic bedside (Side effects of current cellular therapies)	
7)	Midterm Exam	
8)	Introduction to cell culture techniques	
9)	Contents of reagents used in cell culture and the aim of using those reagents during cell culturing	
10)	Basic equipment used in cell culture laboratory (hoods, laminar hoods, incubators, autoclave) and their working principles (Practical)	
11)	Cell Passaging (Practical Application)	
12)	Cell counting and seeding (Practical Application)	
13)	Cryopreservation of cell (Practical Application)	

14)	TÜBİTAK 2209A Project Preparation and Writing Training	
15)	Final Exam	

Sources

Course Notes / Textbooks:	Dersin kaynak kitabı bulunmamaktadır. / The course does not have a mandatory resource.
References:	Konu ile ilgili güncel makaleler/ Recent research papers, literature reviews about the topic

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.	1	2	3	4	5
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.					

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.	
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Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Attendance	1	% 10
Midterms	1	% 40
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	Preparation for the Activity	Spent for the Activity Itself	Completing the Activity Requirements	Workload
Course Hours	2	0	2	15	34
Laboratory	2	0	2	8	20
Midterms	1	0	2	2	4
Final	1	0	2	2	4
Total Workload					62