

COURSE RECORD

Code	BENG551
Name	Immunology
Hour per week	3 (3 + 0)
Credit	3
ECTS	7.5
Level/Year	Graduate
Semester	-
Type	Elective
Location	-
Prerequisites	-
Special Conditions	-
Coordinator(s)	Altan Ercan, PhD
Webpage	
Content	This course covers basic knowledge of immunology. Topics, which will be covered in this course, are development of different hematopoietic cells, innate immunity, adaptive immunity, structure and function of lymphoid organs, synthesis, function of antibody and immunologically important proteins such as Fc-receptors, cytokines, cytokine receptors, major histocompatibility complex molecules. In addition, special attention will be given on the basic immunological mechanisms of allergy and autoimmunity.
Objectives	<ul style="list-style-type: none"> -To teach basic concepts in immunology -To make students appreciate and apply the concepts in immunology in daily life -To make students to understand the complexity of immunology -To underline the importance of thinking in molecular level in science
Learning Outcomes	L01 To understand basic concepts in immunology L02 To be familiar with arms of immune system L03 To know the mechanistic differences between adaptive and innate immune system L04 To appreciate how innate and adaptive immune synchronize their efforts L05 To understand how immune system contributes to pathology of autoimmune disease
Requirements	Students are expected to read the related chapters before coming to the class and present application of fundamental immunology in daily life.
Reading List	Lauren, S. (2019) How the Immune System Works, sixth edition. New Jersey, USA: John Wiley & Sons Ltd. Additional Materials: Actor, J.K. (2019) Introductory Immunology, Basic Concepts for Interdisciplinary Applications, second edition. Massachusetts, USA: Elsevier Inc. Abbas, A.K., Lichtman A.H.H., Shiv Pillai S. (2015) Basic Immunology: Functions and Disorders of the Immune System, fifth edition. Massachusetts, USA: Elsevier Inc. Murphy, K.M. and Weaver C. (2017) Janeway's Immunobiology, ninth edition. New York, USA: Garland Science, Taylor & Francis Group, LLC Scientific articles published in peer-viewed journals
Ethical Rules and Course Policy	Ethics policy of Abdullah Gul University is applied.

LEARNING ACTIVITIES *Please, use this one as a reference for your course*

Activities	Number	Weight (%)
Lecture	3	70%
Group Works		

Presentations	3	30%
Site Visits		
		Total 100

ASSESSMENT

Evaluation Criteria	Weight (%)
Quizzes	10%
Assignments	10%
Group Project Assignments & Presentations	15%
Attendance/Participation	05%
Midterm	25%
Final Exam/Submission	35%
Total 100%	

For a detailed description of grading policy and scale, please refer to the website <https://goo.gl/HbPM2y> section 28.

COURSE LOAD *Please, use this one as a reference for your course*

Activity	Duration (hour)	Quantity	Work Load (hour)
In class activities	3	14	42
Research (web, library)	2	12	20
Required Readings	2	10	20
Pre-work for Presentation	2	7	20
Term paper preparation	1	7	30
Midterm preparation	30	1	30
Final preparation	40	1	40
General Sum			202

ECTS: 7,5 (Work Load/25-30)

CONTRIBUTION TO PROGRAMME OUTCOMES*

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	P013	P014
L01	5													
L02	5													
L03	5													
L04	5													

* Contribution Level: 0: None, 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

WEEKLY SCHEDULE

W	Topic	Outcomes
1	An Overview of immune system Lab/Activity: Presentation	L01
2	The Innate Immune System Lab/Activity: Presentation	L01, L02
3	B Cells and Antibodies Activity: Presentation	L01, L02, L03, L04, L05
4	The Magic of Antigen Presentation Activity: Presentation	L01, L02, L03, L04
5	T Cell Activation Activity: Presentation	L01, L02, L05
6	T Cells at Work Activity: Presentation	L01, L02, L03, L04
7	Secondary Lymphoid Organs and Lymphocyte Trafficking Activity: Presentation	L01, L02
8	Restraining the Immune System Activity: Presentation	L01, L03, L04, L05
9	Self Tolerance and MHC Restriction Activity: Presentation	L01, L02, L03, L04, L05
10	Immunological Memory Activity: Presentation	L01, L02
11	The Intestinal Immune System Activity: Presentation	L01, L02, L03, L04
12	The Immune System Gone Wrong Activity: Presentation	L01, L02, L03, L04, L05
13	Immunodeficiency Activity: Presentation	L01, L02, L04
14	Vaccines Activity: Presentation	L01, L02, L04