



KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI
UNIVERSITAS BRAWIJAYA
FAKULTAS KEDOKTERAN
PROGRAM MAGISTER ILMU BIOMEDIK

Jalan Veteran, Malang 65145, Jawa Timur – Indonesia
 Telp. (62)(341) 569117; 567192 Pes. 134, 135 – Fax. (62)(341) 564755
 E-mail: sekr.fk@ub.ac.id Website: <http://biomedical.fk.ub.ac.id>

Teaching Plan

Course Title : Basic Immunology
Course Code : DKF6104
Credits : 2
Course Coordinator : Prof. DR. Dr. Kusworini, M.Kes., Sp.PK.
 (Phone: 08125296555, email: dr.kusworini@gmail.com)

Course Description

The overall goal of this course is to introduce students to physiological mechanisms of the immune system about the defense against infectious diseases and other abnormalities. The key objective is to understand the concepts, apply literature review and scientific writing, as well as critically appraise journal article. Subject areas covered include: tissues, organs and cells involved in the immune system, the basics of innate and adaptive defense mechanisms, cellular and humoral immune responses, cytokines, complement system, regulation of the immune system, immune tolerance and the mechanism of inflammation in relation to the defense against infections and various deformities due to the immunological interactions with the surrounding cells.

Course Learning Outcomes (CLOs)

On successful completion of this course, students will (be):		Bloom's Taxonomy
CLO1	Demonstrate a comprehensive understanding of cells and tissues involved in the immune system; innate and adaptive immunity; antigen capture and presentation to lymphocytes; MHC and antigen processing and presentation; cell-mediated immune response; cytokines; humoral immune response; complement system; immunologic tolerance; regulation of immune responses; and also leucocyte migration and inflammations	Level 2. Understanding
CLO2	Able to apply literature review and scientific writing	Level 3. Applying
CLO3	Able to critically appraise the immunology journal article relevant to student's interest and communicate it through oral presentation	Level 5. Evaluating
CLO4	Demonstrate self-directed learning and ethical standards for the intellectual activities	Level 3. Applying

Links between CLOs and PLOs

	PLO1.1	PLO1.2	PLO2.1	PLO2.2	PLO2.3	PLO3.1	PLO3.2	PLO3.3	PLO3.4	PLO4.1
CLO1	√	√								
CLO2	√	√	√			√	√			√
CLO3	√	√	√			√	√			√
CLO4							√			√

Topics and Schedule

Week	Topics	Competencies	Lecturer
1	Introduction to the Immune System	Able to explain the cells and tissues involved in the immune system	Team
2	Innate and Adaptive Immunity	Able to explain the components of innate and adaptive immunity, recognition of microbes by the innate and adaptive IS, and evasion of innate and adaptive immunity by microbes	Team
3	Antigen Capture and Presentation to Lymphocytes	Able to explain the antigen recognized by T lymphocytes, and capture of protein antigen by APC	Team
4	MHC and Antigen Processing and Presentation	Able to explain the structure and function of MHC molecule, and processing of protein antigen	Team
5	Cell Mediated IR	Able to explain the phases of T cell responses, types of CMI, effector function of CD4 T lymphocytes, and effector function of CD8 cytolytic T lymphocytes	Team
6	Cytokines	Able to explain the general properties of cytokines, cytokines that	Team



**KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI
UNIVERSITAS BRAWIJAYA
FAKULTAS KEDOKTERAN**

PROGRAM MAGISTER ILMU BIOMEDIK

Jalan Veteran, Malang 65145, Jawa Timur – Indonesia
Telp. (62)(341) 569117; 567192 Pes. 134, 135 – Fax. (62)(341) 564755
E-mail: sekr.fk@ub.ac.id Website: <http://biomedical.fk.ub.ac.id>

		mediate and regulate innate immunity, cytokines that mediate and regulate adaptive immunity, and cytokines that stimulate hematopoiesis	
7	Humoral IR	Able to explain the phases and type of humoral IR, stimulation of B lymphocytes by antigen, the function of helper T lymphocytes in humoral IR to protein antigen, properties of antibodies that determine their effector function, neutralization of microbes and toxin, and opsonization and phagocytosis ADCC	Team
8	Complement System	Able to explain the activation of the complement system, and function of complement at special anatomic site	Team
9	Immunologic Tolerance	Able to explain the immunologic tolerance, central T lymphocyte tolerance, peripheral T lymphocytes tolerance, and B lymphocytes tolerance	Team
10	Regulation of Immune Responses	Able to explain the mechanisms that inhibit immune response, immunologic tolerance to foreign antigens, suppressor T lymphocyte (T regulator), idiotypic regulation and antibody feedback, and regulatory effect of cytokines	Team
11	Leucocyte migration and Inflammations	Able to explain the lymphocyte recirculation, cell adhesion molecules, neutrophil and lymphocyte extravasation, mediators of inflammation, and the inflammatory process	Team
12	Journal Reading, Critical Appraisal, and Oral Presentation	Able to critically appraise the immunology journal article relevant to student's interest and communicate it through oral presentation	Team
13	Journal Reading, Critical Appraisal, and Oral Presentation	Able to critically appraise the immunology journal article relevant to student's interest and communicate it through oral presentation	Team
14	Journal Reading, Critical Appraisal, and Oral Presentation	Able to critically appraise the immunology journal article relevant to student's interest and communicate it through oral presentation	Team
15	Scientific Paper	Able to apply literature review and scientific writing, as well as gain a comprehensive understanding of the discussed topic	Team
16	Final Examination		Team

Team of Lecturer

Prof. DR. Dr. Kusworini Handono, M.Kes., Sp.PK*
Prof. DR. Dr. Edi Wijayanto, MS., Sp.PK.(K)
Prof. DR. Dr. Sumarno, Sp.MK.(K)
Prof. DR. Dr. Sanarto Santoso, Sp.MK.(K)
DR. Dr. Sri Poeranto, M.Kes., Sp.Park

Teaching and Learning Strategy

Core material will be delivered through lectures, structure assignments, completed with an oral presentation of journal critical appraisal.

Assessment Methods

Type	Weighting	CLO Assessed	Description
Journal Reading, Critical Appraisal, and Oral Presentation	30%	1, 3, 4	Assessment is based on the technique of presentation, presentation materials, comprehensive knowledge of the material presented, the preparation of the presentation, and critics of the journal presented. The presentation lasts approximately 20 minutes followed by 20 minutes of discussion.
Structured Assignment	30%	1, 2, 4	The assignment will be given one week before class begin and submitted at the time of the lecture. Assessment is based on the rubric of a scientific paper, including content, reference, organization, and also language, presentation, and technical accuracy.



KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI
UNIVERSITAS BRAWIJAYA
FAKULTAS KEDOKTERAN
PROGRAM MAGISTER ILMU BIOMEDIK

Jalan Veteran, Malang 65145, Jawa Timur – Indonesia
Telp. (62)(341) 569117; 567192 Pes. 134, 135 – Fax. (62)(341) 564755
E-mail: sekr.fk@ub.ac.id Website: <http://biomedical.fk.ub.ac.id>

Final Exam	40%	1, 4	60 multiple choice questions that must be completed within 60 minutes.
------------	-----	------	--

Learning Sources

Essential reading/resources	<ol style="list-style-type: none">1. Abbas AK, Lichtman AH. Cellular and Molecular Immunology, 20152. Abbas AK, Lichtman AH and Pillai S. Basic Immunology, Functions and Disorders of the Immune System. 5th ed. Philadelphia, Saunders; 20163. Male D, Brostoff J, Roth DB, Roitt I. Immunology, 7th ed. Philadelphia, Elsevier Ltd; 20064. Murphy K, Travers P, Walport M. Janeway's Immunobiology, 7th ed. New York, Garland, and Science; 2008
Further reading/resources	Journal articles regarding immunology

Course Coordinator,

Prof. DR. Dr. Kusworini, M.Kes., Sp.PK.