

Modul designation	Immunology System
Semester in which the module is taught	4th Semester of Academic/Bachelor Stage
Person responsible for the module	<ol style="list-style-type: none"> 1. Dr. Maya Tejasari, dr., M.Kes. 2. Julia Hartati, dr., M.Kes. 3. Prof. Dr. Nuzirwan Acang, SpPD-KHOM, Finasim 4. Meike Rachmawati, dr., M.Kes., SpPA. 5. Eka Hendryanny, dr., M.Kes.
Language	Bilingual (Indonesia & English)
Relation to curriculum	Compulsory
Teaching methods	<ul style="list-style-type: none"> - Lecture - Tutorial - Laboratory activity
Workload	<p>Total workload : 3 weeks</p> <p>Contact hours : Lecture 2 hours/week</p> <p style="padding-left: 40px;">Tutorial 3 hours/meeting (3 meeting/week)</p> <p style="padding-left: 40px;">Laboratory activity 3 hours/meeting</p>
Credit points	4 ECTS (3 SKS)
Required & recommended prerequisites for joining the module	Learning course at 1 st -3 rd semester
Module Objective	<p>At the end of course, students will be able to:</p> <ol style="list-style-type: none"> 1. Explain the natural and adaptive immune response. (C2) 2. Explain cellular and humoral immune responses. (C2) 3. Linking the immune response to hypersensitivity, autoimmune, and immunodeficiency disorders. (C3) 4. Describe the microstructure of the primary and secondary lymphoid organs according to the rules of histology. (C4, A2) 5. Explain the microstructure and microcirculation of lymph vessels according to the rules of histology. (C2, A2) 6. Analyze the development process and maturation of lymphoid and macrophage derived cells related to immune disorders. (C4) 7. Analyze the activation and differentiation of lymphoid and myeloid derived cells in immune disorders. (C4)

	<ol style="list-style-type: none"> 8. Analyze the production process and structure of cellular elements according to the rules of immunology. (C4) 9. Analyze the production process and structure of humoral elements according to the rules of immunology. (C4) 10. Analyze the biological activity of cellular and humoral elements in immune disorders. (C4) 11. Explain immune disorders such as hypersensitivity, autoimmune disease, and immunodeficiency. (C2) 12. Explain the definition, etiology, and classification of immune disorders of the skin, internal medicine, ear, nose, throat (ENT), and neurological diseases. (C2) 13. Analyze the pathogenesis, pathophysiology, clinical manifestations, and diagnosis of immune disorders according to the rules of skin health science, internal medicine, ear, nose, and throat (ENT) disease, and neurological disease (C4) 14. Determine the differential diagnosis and prognosis of immune disorders according to the rules of skin health science, internal medicine, ear, nose, and throat (ENT) disease, and neurological disease. (C3) 15. Apply the principles of pharmacological and non-pharmacological management of immune disorders according to the principles of skin health science, internal medicine, ear, nose, and throat (ENT) disease, and neurological disease. (C3) 16. Analyze supporting examinations for immune disorders according to the rules of skin health science, Internal Medicine, Ear Nose Throat (ENT) disease, and Neurological Disease (C4) 17. Behave politely, ethically, and professionally in communicating in accordance with the principles of bioethics, humanities, and Islamic values. (A4)
Content	<p>Immunology System module discusses basic science, including physiology, histology, anatomical pathology, clinical pathology, microbiology, parasitology, pharmacology, pediatric health, internal medicine, ear nose throat disease, genital skin health science, and neurology. In this module, we will also discuss several immune disorders that are most frequently encountered and that general practitioners must know about. The discussion of these disorders includes definition, etiology, epidemiology, disease risk factors, clinical manifestations, immunopathogenesis and pathophysiology, supporting examinations, differential diagnosis, diagnosis, principles of therapy, complications, and prognosis of each disorder.</p>
Examination forms	Multidisciplinary Examination (MDE), SOOCA, Lab exam

Study and examination requirements	<p>System Pass Criteria :</p> <p>Minimum MDE, SOOCA and Lab exam score 55.5 (C)</p>
Reading list	<ol style="list-style-type: none"> 1. Janeway's Immunobiology, Murphy K et all editors, 9th edition, Garland Science, Taylor & Francis Group 2. Basic Immunology, Abbas et all, 5th ed. 3. Cellular and Molecular Immunology, Abbas et all, 9ed. 4. Clinical Immunology;Principles and Practice, Rich et all, 5th ed, 5. Immunology, Male et all, 8th ed. 6. Guyton &Hall, Textbook of Medical Physiology,11th Edition 7. Seeley's Physiology& Anatomy,11th Edition 8. Junqueira, Basic Histology 9. Wallen K. Lippincott Illustrated Review : Pharmacology. Wolters Kluwer. sixth edition. 10. Wolff K, Goldsmith LA, Katz SI, et all. Fitzpatrick's Dermatology in General Medicine. 7th edition. McGraw-Hill Companies, Inc. 11. Odom RB, James WD, Berger TG. Andrews` diseases of the skin. 9th ed. 12. Harrison's Internal Medicine