

SEMESTER I & II
LSM3223 IMMUNOLOGY

Prerequisite: LSM2103

Workload: 24 lecture hours + 24 laboratory hours/workstations + 2 tutorial hours

This course provides the central concepts of immunology and the foundation for understanding how immunity functions. The subjects of innate immunity and haematopoiesis introduce the origin and role of different cell types in immunity. The mechanics of how the body protects itself from disease are explored in relation to T and B cell biology, antibody-antigen interaction, major histocompatibility complex and antigen presentation. Other topics include allergy, immunodeficiencies, autoimmunity, tumor immunology, resistance and immunization to infectious diseases.

S/N	Topics	Lecture hours Semester I	Lecture hours Semester II
1.	Introduction to immunology <ul style="list-style-type: none"> - Overview of the immune system - Cells and structures of the immune system - Innate immunity I&II 	4 (LJH/GYH)	4 (ZYL)
2.	Humoral immunity and effector mechanisms <ul style="list-style-type: none"> - Immunoglobulin structure and function - Complement - Cytokines and chemokines 	4 LJH	4 LJH
3.	Antigen recognition and immune interactions <ul style="list-style-type: none"> - Generation of antigen receptor diversity - Major Histocompatibility Complex - Antigen processing and presentation 	3 LHY	3 LHY
4.	Cellular immunology and immune regulation <ul style="list-style-type: none"> - T cell development - B cell development - T Cell function - T-B cell interaction (Germinal center reaction) 	4 LHY	4 NG/ZYL
5.	Infection immunity <ul style="list-style-type: none"> - Viruses - parasites - Bacteria and fungi 	3 GYH	3 ZYL
6.	Immunity in disease <ul style="list-style-type: none"> - Allergy - Autoimmunity - Immunodeficiency - Tumour immunology 	4 ZYL	4 LHY
7.	Research applications <ul style="list-style-type: none"> - Vaccines and immunization - Module summary/discussion 	2 LJH	2 ZYL

TEXTBOOKS:

1. Cellular and Molecular Immunology (Elsevier). Abbas
2. Janeway's Immunobiology 8th edition (Garland). Kenneth Murphy

MODE OF ASSESSMENT:

- 30% - Continuous Assessment (MCQ)
70% - Final Written Examination

MODULE CO-ORDINATORS:

A/Prof Lu Jinhua (Semester I) (Tel: 6516-3277, E-mail: miclujh@nus.edu.sg)
A/Prof ZHANG Yongliang (Semester II) (Tel: 6516-6407, E-mail: miczy@nus.edu.sg)

LECTURERS:**Semester I**

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Semester II

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