

## **SEMESTER I & II**

### **LSM4226 INFECTION AND IMMUNITY**

**Prerequisite:** LSM3223 **AND** either LSM3232 or LSM3225

**Workload:** 38 lecture hours + 12 tutorial hours

**Course description:**

This module aims at providing an in-depth knowledge in the field of host-pathogen interactions, i.e. how the immune system deals with pathogens, and how the pathogens deal with the host's immune system. An introductory lecture series covers the basics in microbiology (bacteriology, virology, parasitology), immunology, vaccinology, and general principles of host-pathogen interactions. Selected diseases illustrate host-pathogens interactions along with the consequences for vaccine and drug design. In addition, a set of lectures covered by clinicians and professionals will focus on patient management, diagnostic laboratory, and clinical trials. Tutorials are broken into "journal club", and "problem-based study" and are directly related to the topics developed during the lectures.

<b>S/N</b>	<b>Topics</b>	<b>Lecture hours</b>
1	Introduction- Presentation of the module and the lecturers.	2h
2	Bacteriology and bacterial pathogenesis (basic principles)	2h
3	Virology and viral pathogenesis (basic principles)	2h
4	Parasitology and parasite pathogenesis (basic principles)	2h
5	Immunology basics (innate and adaptive immunity; mucosal immunity)	4h
6	Host-pathogen interactions	2h
6	Vaccinology (History; types of vaccines; adjuvants; neonatal vaccinology)	2h
7	Animal models of infection	2h
8	M. tuberculosis: TB pathogenesis	4h
9	M. tuberculosis: Drug development against TB	2h
10	TB clinical perspectives	2h
11	Dengue virus: DEN disease and virulence strategies	2h
12	Dengue virus: Vaccine and drug development against DEN	2h
13	DENV escape strategies	2h
14	Bacteria in practice	2h
15	Clinical diagnostic of bacterial infections	2h
16	Clinical trials in infectious diseases	2h
	Total lectures :	38 h
	Journal Club presentations	8h
	Problem based tutorial	4h
	Total hours:	50h

**TEXT BOOK** (Reference books):

- “Microbiology- A systems Approach” 2<sup>nd</sup> edition (Cowan-Talaro) McGraw-Hill international edition
- “Janeway’s Immunobiology” 7<sup>th</sup> edition (Murphy-Travers-Walport)
- “Foundations in Microbiology” 7<sup>th</sup> edition (Kathleen Park Talaro) McGraw-Hill edition
- “Immunology” 7<sup>th</sup> edition (David Male/ J. Brostoff/ D. Roth/ I. Roitt)

**MODE OF ASSESSMENT:** Continuous assessment (40%) and final examination (60%)

**MODULE CO-ORDINATORS:** A/P ALONSO Sylvie & A/P ANGELI Veronique

**LECTURERS:**

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