



**SEAMEO-TROPED Regional Centre for  
Microbiology, Parasitology & Entomology  
and  
Institute for Medical Research, Kuala Lumpur  
Malaysia**



**Course:**

**DIPLOMA IN MEDICAL MICROBIOLOGY**

**13 Feb – 13 July 2012  
(5 months)**

**Rationale**

As the world proceeds to modernization and globalisation, we are increasingly challenged by emerging and re-emerging diseases. There is a very apparent change in the geographical distribution of disease. Globalisation is certainly impacting on the epidemiology of infectious disease, and on the capacity to effectively prevent, control and treat these diseases. Today, infectious diseases still account for a large proportion of death and disability worldwide and in certain regions remain the most important cause of ill health.

The medical laboratory plays a critical role in recognizing, emerging and re-emerging infectious diseases by establishing a specific etiology for disease syndromes seen by clinicians, and by reporting new or unusual pathogens that such laboratories may encounter. The laboratory may also serve as a key surveillance point for information gathering and dissemination, as is the case with antimicrobial resistance. For the laboratory to have maximum impact, it must be able to perform competently a series of essential steps.

**Objective**

The course aims to provide knowledge and practical training on pathogens of major significance to public health and to enable participants to apply scientific approach and critical thinking to diagnose, prevent and control infectious diseases. The course will facilitate and strengthen institutional and national capabilities in medical diagnostic laboratory services, research and human resource development. It is also hoped that this course will encourage networking between the various participants' institutions and ours to foster exchange in expertise and collaboration in research projects.

### **Entrance Requirement**

Applicants must have a sufficiently good command of English to follow this post graduate Course. They must possess at least a basic degree in biological sciences, health or medical field. Candidates should be certified medically fit.

### **Course Venue:**

The course will be held at the SEAMEO-TROPMED Regional Centre for Microbiology, Parasitology & Entomology, Institute for Medical Research (IMR), Kuala Lumpur, Malaysia.

### **Course Methodology**

Course methodology consist of Lectures, Demonstration, Hands-on laboratory practical and study visit, Preparation of dissertation, and Final examination – consist of theory and practical assessment.

### **Course Content**

- **Bacteriology**  
An introduction to medical bacteriology including general properties, nomenclature, classification of bacteria and

pathogenesis of infection. Systematic study of medically important bacteria. Laboratory diagnosis of bacterial infections. Antimicrobial agent and susceptibility testing. Disinfection and sterilization. Public Health Bacteriology. Mycobacteriology. Clinical Bacteriology. Hospital Acquired Infections.

- **Virology**

An introduction to medical virology including general properties and nomenclature of viruses, biology of virus replication, viral immunology and pathogenesis, systemic study of medically important viruses with special emphasis on viral infections endemic in Asia, emerging viral diseases antiviral agents and viral vaccines. This module also covers diagnostic virology including collection, transportation and processing of specimens from clinical as well as field settings, biosafety and standard laboratory techniques in virology.

- **Immunology**

An introduction to molecular, cellular and clinical immunology. The lymphoid system, antigens, cell interaction, cellular basis of antibody and cell-mediated immune responses, the diversities in the immune system, immunoglobulins, complements, antigen-antibody reactions, cellular assays, autoimmunity, immune complex diseases, allergy, clinical transplantation and immunodeficiency states.

- **Mycology**

Role of the mycology laboratory in the diagnosis and management of fungal diseases. Histopathological diagnosis of mycosis. A systematic study of yeast and fungi of medical importance and the diseases they cause. Antifungal agents. Pathogenicity and immunity to fungal infections. Serodiagnosis of fungal diseases.

- **Epidemiology**

Definition, scope and uses of epidemiology. Measurement of disease occurrence and sources of data. Epidemiological factors and sequence of disease transmission. Epidemiologic methods. Principles of disease control.

- **Biostatistics**

Introduction to biostatistics. Types and sources of data. Measurement of microbiological data. Descriptive statistics for microbiologist. Inferential statistics. Methods for determining association and correlation.

- **Molecular Biology**

Introduction and principles of molecular biology. Applications of molecular biology in diagnosis and research. Hybridoma technology and applications in diagnosis and research.

### **Teaching Faculty:**

The teaching faculty are from IMR, Ministry of Health (MOH), Veterinary Research Institute and the universities (e.g. UKM, UM, IMU, and UPM)

### **Attendance and Certificate:**

As an essential part of the course, participants are required to carry out a literature review assignment including oral presentation. The written dissertation would contribute to 10% of final examination marks while the oral presentation would contribute 5%.

There will be a final examination at the end of the course. The examination would consist of the following: Theory (40%), Practical (40%) and Viva voce (5%). The decision of the Board of Studies regarding the examination result is final.

Successful candidates will be awarded the Diploma in Medical Microbiology, while participant who fail to obtain the passing mark but

had satisfactorily completed the course is awarded with a Certificate of Attendance.

### Course Fee:

#### i) **Diploma Medical Microbiology (DMM)**

Every participant is required to pay a course fee of RM 15,000.00 per person, that should be paid in advance. Course fee should be paid directly to the “Director Institute for Medical Research”. However participant may join individual module and the fees are listed follows.

#### ii) **Modular Courses**

Modular Courses offered during the DMM course. Number of candidates accepted is subject to the availability of seats. The fees and dates are subject to change.

<b>Bil.</b>	<b>Module</b>	<b>Aprox. Duration</b>	<b>Tentative Date</b>	<b>Fee (RM)</b>
1.	Biostatistics & epidemiology	2 weeks	5 – 15 Mac	1,500.00
2.	Principles of molecular biology	1 week	9 – 13 April	1,000.00
3.	Immunology in infectious diseases	3 week	16 Mac – 5 April	2,000.00
4.	Bacteriology	6½ weeks	16 April – 31 May	4,500.00
5.	Mycology	2 weeks	1 – 14 Jun	2,000.00
6.	Virology	3 week	15 Jun – 5 July	2,500.00

### **Accommodation**

The Institute provides a limited number of hostel rooms on a twin-sharing basis and on first come first serve basis at a minimal cost (RM100.00 per month, subject to change). Priority will be given to SEAMEO candidates.

The room rate around Kuala Lumpur is about RM200.00 per month. Apartment rental is about RM450.00-800.00 per month depending on the location and facilities available.

### **Deadline of Submission**

All application forms must reach the The Dean, Diploma in Medical Microbiology Course, SEAMEO-TROPMED Regional Centre for Microbiology, Parasitology & Entomology , c/o Institute for Medical Research, Kuala Lumpur, 50588, Malaysia not later than 21 days before the commencement of the Course (21 January 2012).

### **Further Enquiries**

For further enquiries, prospective applicants can approach the SEAMEO-TROPMED Regional Centre for Microbiology, Parasitology & Entomology (Institute for Medical Research, Kuala Lumpur Malaysia) at the following:

The Director  
Institute for Medical Research,  
Jalan Pahang,  
50588 Kuala Lumpur  
MALAYSIA.

Tel. No: 603 – 2616 2666  
Fax No: 603 – 2693 8306  
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