



Basic Immunology Course Specification

Master Degree in clinical and chemical pathology

Program on which the course is given: Master in Clinical and Chemical pathology

Department offering the program: Clinical and Chemical Pathology
Department

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Course code: CCP 822 BCI

Element of the program (Compulsory/Elective): Compulsory course

Academic year: 2015-2016

Date of approval: July 2015

Credit points: 1.5 Credit points

Course duration: 8.5 weeks

Teaching hours: Theoretical 75% and Practical 25%

Program Coordinators:

- Prof. Dr. Nancy El Guindy
- Prof. Dr. Engy El Khateeb

I. AIM OF COURSE

The aim of the course is to develop a good postgraduate clinical pathologist

- capable of dealing with patients, communicating with colleagues and coworkers in team work, having the ground knowledge of a broad understanding of the immune system and its functions,
- outstanding skills and knowledge needed for optimum and safe processing of clinical samples and applying the standard rules for research and continuous learning processes.



II. INTENDED LEARNING OUTCOMES

A. Knowledge and Understanding:

By the end of the course the candidate should be able to:

1. Outline the key components of the innate and adaptive immune responses.
2. Describe cell types involved in an immune response.
3. Describe organs involved in an immune response.
4. Describe the basic structure of the cellular receptors
5. Discuss cellular interactions during an immune response.
6. Identify the main mechanisms of immune tolerance and autoimmunity.
7. Understand the principles governing vaccination
8. Identify the importance of immune regulation.
9. Explain the general principles of controlling the immune response.

B. Intellectual Skills:

By the end of the course the candidate should be able to:

1. Critically assess laboratory results.
2. Correlate the principle and operation of relevant laboratory equipment.
3. Analyse how the immune system recognizes foreign antigen and the significance of self/non-self discrimination.

C. Professional and Practical Skills:

By the end of the course the candidate should be able to:

1. Operate different methods used in the immunology lab
2. Process different clinical samples correctly
3. Prepare separation and differentiation of different types of lymphocytes
4. Measure indicators of quantity and function of different humoral factors involved in defense mechanisms as immunoglobulins and complement.
5. Measure values of cells and humoral factors involved in the immune system to offer advice on the interpretation of laboratory results.

D. General and Transferable Skills:

By the end of the course the candidate should be able to:

- 1 The ability to use simple word and IT skills (i.e., data processing, software, internet, and multimedia) and the library to find information.
2. The ability to be self-motivated learners and responsive to feedback.
3. Working in team (i.e., sharing presentations and discussions and solving



problem).

4. Enhancement of research capability through working in independent projects.

III. COURSE CONTENT

i. **Compulsory Course Basic Immunology**

ii. **Main topics: Students will receive presentations or group discussions about recent advances in the following subjects:**

Cells and Tissues of Immune System
Introduction to the immune system
Innate Immunity
Cells of Immune System (Innate and Adaptive)
Organs and traffic of immune System

Molecules of the immune system (innate and adaptive)
Molecules of the immune system (innate and adaptive)
MHC structure and function
Complement
Cytokines: IL-1/TNF, IL-2, IFN



Overview on Cytokines

Immune Response

Ag presentation & Ag presenting cells
 Ig & humoral immune response
 cell mediated immunity
 Effector mech. Of humoral& cell mediated immunity
 Inflammation & inflammatory mediators
 Regulation of the immune system
 Mucosal immunity
 Immune mechanisms of tissue damage

Immune Receptors

T cell ontogeny and TCR rearrangement
 B cell ontogeny & Ig gene rearrangement

Immunity to different pathogens

Immunity to viral infections
 Immunity to parasitic and bacterial infections

Basic knowledge

Introduction to cell cycle and Apoptosis

iii. Course contents: Distribution of course contents

Subject	Lectures (hrs)	Tutorial / case discussion (hrs)	Practical (hrs)	Total (hrs)	% of Total
1. Cells and Tissues of Immune System	4	1	1	6	20



2. Molecules of the immune system (innate and adaptive)	5	1	1	7	23.3
3. Immune Response	8	1	1	10	33.3
4. Immune Receptors	2			2	6.7
5. Immunity to different pathogens	2	1	1	4	13.3
6. Basic knowledge	1			1	3.3
Total	22	4	4	30	100

IV. TEACHING METHODS

The course will be managed through the following teaching methods:

1. Lectures with interactive discussions in lecture halls aided by Audio-visual aids (data-show, slide projection).
2. Tutorials
3. Slides / data show
4. Discussion
5. Presentations: Independent assignments:
6. Practical sessions



Lecture Tutorial and Lab Timetable

Item	Time schedule
1- Lectures	<u>2</u> days/week; Two hours each between 9: 30 am to 11 :30 am for 5.5 weeks
2- case discussions / tutorials	<u>1 day</u> / week for 4 weeks
3- Practical	<u>1 day</u> / week for 4 weeks

V. LIST OF REFERENCES

Basic materials:

- Hand outs of lectures and practical lessons

Essential books (text books):

- Essential reading (text books: Basic Immunology, Updated Edition 2014-2015: with STUDENT CONSULT Access (Paperback). By AbulK. Abbas, Andrew H. Lichtman.)



VI. TEACHING AND LEARNING FACILITIES

- Lecture halls
- Audio-visual aids: Data show, Blackboard, Computers, CDs, overhead projection and videos.
- Rooms for small groups
- Post graduate Laboratory

VII. ASSESSMENT

Assessment criteria:

The prerequisite for sitting to the final exam is 75% attendance of the lectures and fulfilling all the credit points specified for the scientific activities, the training program and the elective course which should be registered in the log book.

Assessment tools:

- Continuous assessment is carried throughout the course and registered in the logbook
- Final summative examination will be carried at the end of the course.

Assessment schedule: The final exam is held twice per year in April and October.

Examination description:

- Written exam: Duration: 1.5 hours exam with type of questions: Long essay, short essay, & MCQ.
- Practical: spotting exam on slides, data show, and laboratory results.



- Oral: Number of examiners: 2

Weighing of assessment:

Exams	Marks	Intended Learning Outcomes
Written	40	a (1-9), c (1), e (1-3)
Oral	15	a (1-9), c (1), d (1), e (1-3), f (1-4)
Practical	20	b (1-5)
Total	75	

Head of Department

Prof. Dr.Fatma El Mougny