

University: Damanhur
Department: Microbiology

Faculty: Veterinary Medicine

Basic Immunology Course Specifications (2010 - 2011)

Program(s) on which the course is given: BVSc
Department offering the program: ---
Department offering the course: Microbiology
Major or Minor element of programs: Major
Academic year /Level: 3rd Year 1st semester
Date of specification approval:

A. BASIC INFORMATION

Title: Basic Immunology

Code: 3AIM

Hours:

Lectures 1 hrs/week

Practical 2 hrs/week

Total 45 hrs

B. PROFESSIONAL INFORMATION

1. Overall aims of the course:

This course provides the ground knowledge and ability to give the student a broad understanding of the immune system and its functions. Topics include: activation and regulation of innate and adaptive immunity and the principles governing vaccination; the molecular basis of antigen specificity; antibody structure and interaction with antigens; disorders of the immune system; tumor and transplantation immunology; the application of immunological reactions for the diagnosis and monitoring of disease; and the use of immunological techniques as analytical tools in the clinical laboratory.

2. Intended Learning Outcomes (ILOs) of the Course:

a. Knowledge and Understanding:

- a.1 Outline the key components of the innate and adaptive immune responses.
- a.2 Describe which cell types and organs are involved in an immune response.
- a.3 Describe the basis structure of the cellular receptors and discuss their interactions during an immune response.
- a.4 Differentiate between different Hypersensitivity states.
- a.5 Identify the main mechanisms of immune tolerance and autoimmunity.
- a.6 Understand the principles governing vaccination and the mechanisms of protection against disease

b. Intellectual Skills:

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

c. Professional and Practical Skills:

- c.1 Work safely in a medical laboratory.
- c.2 Be able to access relevant literature and review information.
- c.3 Ability to understand different methods of laboratory diagnosis

d. General and Transferable Skills:

- d.1 The ability to use simple word and IT skills (i.e., data processing, software, internet, and multimedia) and the library to find information.
- d.2.** The ability to be self-motivated learners and responsive to feedback.
- d.3.** Working in team (i.e., sharing presentations and discussions and solving problem).
- d.4.** Enhancement of research capability through working in independent projects.
- d.5. Reporting of the facts using printable sheets in the field of animal immunology.
- d.6. Ability to write a full scientific reports in the field of animal mmunology

3. Contents:

3.1.Lecture Contents:

Topics	
1	The innate immune system: cellular mechanisms & receptors
2	Cells and organs of the immune system
3	The innate immune system: humoral mechanisms: cytokines & complement
4	Overview adaptive immune system: antigen processing & presentation
5	Cell co-operation and effector mechanisms: immune evasion
6	Immunisation
7	Inflammation, Allergies & autoimmunity
8	Immune dysfunction
Total hours 15 hrs	

3.2.Laboratory Contents:

Topics	
1.	Safety Orientation
2.	Purification of antibodies from immune serum
3.	Monoclonal Antibody preparation
4.	Polyclonal Antibody preparation
5.	Purification of antibodies from immune serum
6.	Technique for Antibody detection
Total hours 30 hrs	

1. Teaching and Learning Methods:

4.1. Lectures

4.2. Practical (tutor presentation followed by students' small group sessions).

4.3. Independent (Laboratory and home assignments supervised by tutor):

- a) Writing reports/assignments.
- b) Preparation of colored posters and slide presentations.
- c) Group discussion.

4.3. computer courseware for independent study can be accessed at the education center beside recently developed web courseware

Method for disabled students: (no special arrangements are available now, however those student can consult our staff for help)

5. Student Assessment Methods:

Exam		
5.1	Written Mid-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.2	Written Final-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.3	Practical Final-term	To assess professional and practical skills
5.4	Oral Final-term	To assess skills of analysis and discussion

Assessment Schedule:

	Exam	Week
Assessment 1	Written Mid-term	8 th
Assessment 2	Written Final-term	15 th
Assessment 3	Practical Final-term	15 th
Assessment 4	Oral Final-term	15 th

Weighing of assessments

Exam	Per Semester (%)	Total (%)
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Assessment 1	Written Mid-term	20	20
Assessment 2	Written Final-term	50	50
Assessment 3	Practical Final-term	20	20
Assessment 4	Oral Final-term	10	10
Total		100	100

6. List of References:

6.1. Course Notes:

- Lecture and Practical Notes. By staff members

6.2. Essential Books:

- Clinical Veterinary Microbiology (P.G. Quinn).
- Veterinary Microbiology (P.G. Quinn).
- Veterinary Microbiology (Dwight C. Hirsh)
- Veterinary Immunology (Ivan Tizard).
- Clinical immunology (Catherine Sheehan).

6.3. Recommended Books:

- Veterinary Immunology (Ivan Tizard).
- Clinical immunology (Catherine Sheehan).

6.4. Periodicals, websites, etc

On campus learning (LAN) the students are free to access these offline materials

- a. CLIVE materials
- b. HEEPF electronic course materials

7. Facilities Required for Teaching and Learning

- Microscopes, computers (personal & notebook).
- Audio-visual aids.
- Intelligent screen

Course Coordinator: Dr. Madeha Salah Ibrahim

Head of Department: Prof. Dr. Hatem Salah El-Din

Date: