COURSE SPECIFICATION

(Pathology and Microbiology of the Eye)

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	Master degree of Ophthalmology programme
(2) Department offering the programme:	Ophthalmology department
(3) Department responsible for teaching the course:	OPhthalmology department
(4) Part of the programme:	Master degree of Ophthalmology programme 1st part
(5) Date of approval by the Department`s council	31/7/2016
(6) Date of last approval of programme specification by Faculty council	9–8–2016
(7) Course title:	**Pathology and Microbiology OPHT 505& 507**
(8) Course code:	**OPHT 505& 507**
(9) Credit hours	1/2
(10) Total teaching hours:	7,5 hours

(B) Professional information

(1) Course Aims:

The broad aim of the course is to educate students about Microbiology and pathology of the Eye also to provide the students with updated data and researches concerned the eye,

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(2) Intended Learning Outcomes (ILOs):

On successful completion of the course, the candidate will be able to:

A- Knowledge and Understanding

A1	Describe the disease transmission cycle.
A2	Describe Strategies to combat nosocomial infection.
A3	Recognize necessary vaccines for health care workers
A4	Recognize the steps of post exposure management (exposure to blood and infectious diseases.
A5	Recognize the notifiable infectious disease according to MOHP regulation.
A6	Know elements of standard precaution and transmission based precaution
A7	Show their recognition of : Anatomy of Bacterial cell: morphology &stain. Physiology and metabolism: Pathogenecity- Media- Resistance-Biochemical reaction. Microbial genetics Antimicrobial agents: Antibacterials- Antivirals- Antimycotics
A8	Describe: Gram positive Cocci: staphylococci- Streptococci- Pneumococci Gram negative Cocci: Gonococci Bacilli: Pseudomonas, Proteus, E.coli, Tetanus, Diphtheria, Tuberculosis , Koch Weeks, Marax Axenfeld. Chlamydia Spirochetes
A9	Recognize: • General characters of viruses, stains, media, Pathogenesis and control. • Orthovirus: Influenza • Paramyxovirus: Mumps, Measles • Herpes Virus: Herpes Simplex- Herpes Zoster- Cytomegalovirus- Adenovirus • Pox virus: vaccinia- Molluscum contagiosum • Onchogenic virus: Herpes Simplex 2 –Cyto Megalo virus & Papilloma-Epstein Barr virus. • Monilia, Actinomycosis, Nocardiosis, Mycetoma, Sporotrichosis, Blastomycosis, Cryptocoiccosis, Aspergillosis, Histoplasmosis, coccidiodomycosis.
A10	Explain • Host- Parasite relationship

	• Immune response & Inflammatory cells • Hypersensitivity reactions I, II, III, IV • Transplantation immunity (corneal transplant) • Tumour Immunology.
A11	Identify major mechanisms involved in • **Inflammations:** Cells, Types : (acute, chronic), Causes: (Exogenous, endogenous). Pattern: granulonatous, exudative, suppurative .Organism: Bacteria, Fungi, Viruses, Protozoa Sequelue. • **Trauma.** • **Wound Healing** .

B- Intellectual skills

I1	Select the proper transmission based precaution on dealing with different infectious disease .
I2	Choose in a cost effective way the new and novel modalities used to reduce risk of health care associated infection (urinary cath, central venous catheters, etc…….).
I3	Do risk assessment of different medical interventions and choose the proper level of precautions (clean, aseptic, and surgical techniques)
I4	Choose proper disinfectant / antiseptics in different indications
I5	Identify, calculate and monitor different hospital acquired infections rates using provided tools
I6	Recognize and notify early outbreaks.

C- Professional/practical skills

P1	Recognize basic principle of infection control
P2	Able to apply aseptic technique

(3) Course content:

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
General Microbiology: - Antimicrobial agents & drug resistance: - Topical (ocular) antimicrobial drugs used for treatment of eye infections.	**1**				**7,5**
Immunology: - ***Basic immunology:*** Immune system & Types of immunity. Cells of the immune system and their functions. Antigens , Immunoglobulins and Cytokines. Immtmomodulation. ***Clinical immunology:*** Innate and adaptive immunity of the eye. Eye as an Immunologic privileged site . Hypersensitivity. • Eye allergy. ➢ Autoimmunity & autoimmune diseases affecting eye. ➢ Transplantation immunology: • Corneal immunogenicity and corneal transplantation	**1.5**				
Clinical Microbiology: ○ Normal flora of the eye. ○ Microbiological investigations and treatment of eye infections. ○ Mycobacterial and atypical mycobacterial infection ○ Ocular fugal infection ○ Ocular viral infection Chlamydia eye infection. **Nosocomial Infection and Infection Control** • Types of hospital-acquired infections • Organisms causing hospital-acquired infections • Infection control measures used to prevent nosocomial infection. • Sterilization and disinfection.	1				

General Pathology 1. Inflammation ▪ Definition ▪ Types ▪ For each type: a. pathogenesis b. Morphology c. Classification d. Outcome 2. Repair ▪ Types ▪ Factors affecting repair ▪ Complications ▪ Wound healing 3. Infection ▪ Toxemia ▪ Bacteremia ▪ Tuberculosis a. Pathogenesis b. Reactions c. Types d. T.B. of CNS ▪ Actinomycosis definition ▪ Sarcoidosis 4. Cell injury ▪ Concept of cell injury and adaptation ▪ Reversible cell injury ▪ Irreversible cell injury ▪ Amyloidosis ▪ Gout ▪ Pathological calcification ▪ Pathological pigmentation 5. Circulatory disturbances ▪ Edema ▪ Hemorrhage ▪ Shock ▪ Thrombosis ▪ Embolism	1 1 0.5 0.5 0.5				

▪ Ischemia and infarction 6. Neoplasia ▪ Definition ▪ Classification ▪ Molecular pathogenesis ▪ Carcinogenic agents ▪ Laboratory diagnosis ▪ Clinical effects of tumors	0.5				

(4) Teaching methods:

4.1: Lecture

4.2: Practical class

4.3: Small group discussion with case study and problem solving

4.4: Tutorial

4.5: Seminars

4.6: Workshops

(4) Assessment methods:

5.1:Written Examination for assessment of ILOs number A15, A16

5.2: Oral examination for assessment of ILOs number: A15, A16 , ,T1,T2,T3,T4,T5,T6, I3,I5.

5.3: MCQ for assessment of ILOs number I1,I2,I3,I4,I6.

5.4: Log book for activities for assessment of : mainly for assessment of practical & transferrable skills which are accepted through attending different conferences, thesis discussions, seminars, workshops, attending scientific lectures as well as self learning.

5.5: seminars: the candidate should prepare and present at least one seminar in atopic related to the course and determined by the supervisors in front of the department staff (without marks).

Assessment schedule:

Assessment 1: written after 6 month from master registration

Assessment 2 : Oral exam 6 month from master registration

Assessment 3 : MCQ exam for continuous assessment of knowledge and intellectual skills at the end of the semester after 15 weeks

Assessment 4 Log book required activities to go through 1st part examination .

***Assessment 5*:** the candidate should prepare and present at least one seminar in atopic related to the course and determined by the supervisors in front of the department staff (without marks).

Percentage of each Assessment to the total mark:

Written exam: 180 Marks including 20% MCQ
Oral exam 120 Marks
Other assessment without marks: practical tests and exam, seminars and log book assessment are requirement of the 1st part exam.

(5) References of the course:

6.1: Text books:

- Microbiology text book : by microbiology department ,

6.2: Websites:

- rcoph.org.uk

6.3: Recommended books

Microbiology text book : by microbiology department ,

(6) Facilities and resources mandatory for course completion:

- Lecture rooms: available in the department

Subjects	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
General Microbiology: - Antimicrobial agents & drug resistance: - Topical (ocular) antimicrobial drugs used for treatment of eye infections.							√	√			
Immunology: - ***Basic immunology:*** Immune system & Types of immunity. Cells of the immune system and their functions. Antigens , Immunoglobulins and Cytokines. Immtmomodulation.										√	
Clinical immunology: Innate and adaptive immunity of the eye. Eye as an Immunologic privileged site . Hypersensitivity. • Eye allergy. ➢ Autoimmunity & autoimmune diseases affecting eye. ➢ Transplantation immunology: • Corneal immunogenicity and corneal transplantation										√	
Clinical Microbiology: ○ Normal flora of the eye. ○ Microbiological investigations and treatment of eye infections. ○ Mycobacterial and atypical mycobacterial infection ○ Ocular fugal infection ○ Ocular viral infection Chlamydia eye infection.							√	√			
Nosocomial Infection and Infection Control • Types of hospital-acquired infections • Organisms causing hospital-acquired infections	√		√	√							

• Infection control measures used to prevent nosocomial infection. • Sterilization and disinfection.											
General Pathology 1. Inflammation ▪ Definition ▪ Types ▪ For each type: e. pathogenesis f. Morphology g. Classification Outcome										√	√
2. Repair ▪ Types ▪ Factors affecting repair ▪ Complications Wound healing.										√	√
3. Infection ▪ Toxemia ▪ Bacteremia ▪ Tuberculosis e. Pathogenesis f. Reactions g. Types h. T.B. of CNS ▪ Actinomycosis definition Sarcoidosis				√	√						
4. Cell injury ▪ Concept of cell injury and adaptation ▪ Reversible cell injury ▪ Irreversible cell injury ▪ Amyloidosis ▪ Gout ▪ Pathological calcification ▪ Pathological pigmentation											√
6. Neoplasia ▪ Definition ▪ Classification										√	√

▪ Molecular pathogenesis ▪ Carcinogenic agents ▪ Laboratory diagnosis ▪ Clinical effects of tumors											

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Clinical immunology: Innate and adaptive immunity of the eye. Eye as an Immunologic privileged site . Hypersensitivity. ● Eye allergy. ➢ Autoimmunity & autoimmune diseases affecting eye. ➢ Transplantation immunology: ● Corneal immunogenicity and corneal transplantation						
Clinical Microbiology: ○ Normal flora of the eye. ○ Microbiological investigations and treatment of eye infections. ○ Mycobacterial and atypical mycobacterial infection ○ Ocular fugal infection ○ Ocular viral infection Chlamydia eye infection.						
Nosocomial Infection and Infection Control • Types of hospital-acquired		√	√	√	√	

infections • Organisms causing hospital-acquired infections • Infection control measures used to prevent nosocomial infection. • Sterilization and disinfection.						
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6. Neoplasia ▪ Definition ▪ Classification ▪ Molecular pathogenesis ▪ Carcinogenic agents ▪ Laboratory diagnosis ▪ Clinical effects of tumors						

Subjects	P1	P2	P3	P4
General Microbiology: - Antimicrobial agents & drug resistance: - Topical (ocular) antimicrobial drugs used for treatment of eye infections.				
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Nosocomial Infection and		√		

Infection Control • Types of hospital-acquired infections • Organisms causing hospital-acquired infections • Infection control measures used to prevent nosocomial infection. • Sterilization and disinfection.	√			
General Pathology 1. Inflammation ▪ Definition ▪ Types ▪ For each type: l. pathogenesis m. Morphology n. Classification o. Outcome 2. Repair ▪ Types ▪ Factors affecting repair ▪ Complications ▪ Wound healing 3. Infection ▪ Toxemia ▪ Bacteremia ▪ Tuberculosis m. Pathogenesis n. Reactions o. Types p. T.B. of CNS ▪ Actinomycosis definition ▪ Sarcoidosis 4. Cell injury ▪ Concept of cell injury and adaptation ▪ Reversible cell injury ▪ Irreversible cell injury ▪ Amyloidosis ▪ Gout ▪ Pathological calcification ▪ Pathological pigmentation				

6. Neoplasia ▪ Definition ▪ Classification ▪ Molecular pathogenesis ▪ Carcinogenic agents ▪ Laboratory diagnosis ▪ Clinical effects of tumors				

Method of assessment	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
Written Examination	√	√	√	√	√	√	√	√	√	√	
Oral Examination	√	√	√	√	√					√	
MCQ	√	√	√	√	√						√
Log book for activities											
seminars:	√	√	√	√	√			√			

Method of assessment	I1	I2	I3	I4	I5	I6
Written Examination	√	√		√		
Oral Examination		√	√	√		
MCQ	√		√	√	√	
Log book for activities						
seminars:	√		√		√	

Method of assessment	P1	P2	P3	P4
Written Examination	√	√		
Oral Examination	√	√		
MCQ	√	√		

Log book for activities				
seminars:			√	√

Course coordinator: : Prof.Dr Rasheed El-Lakkany

Head of the department: Prof.Dr Rasheed El-Lakkany