



Basic Clinical Microbiology 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: CCP822BCM

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: 10 weeks

Teaching hours: Theoretical 80% and Practical 20%

Program Coordinators:

- Prof. Dr. Afaf El Banna
- Prof. Dr. Nada Nawar

I. AIM OF COURSE

To develop qualified clinical pathologist, having knowledge needed for optimum and safe microbiological processing of clinical samples with satisfactory interpretation and correlation of test results with the clinical situation of the patient following laboratory infection control guideline.



II. INTENDED LEARNING OUTCOMES

A. Knowledge and understanding:

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

1. list microbial causes of diseases in order of frequency
2. Classify microorganism to species level
3. Recognize urgent infectious conditions
4. Identify the appropriate specimen for different tests needed
5. list the criteria for acceptance and rejection of each specimen
6. Describe the basics of antimicrobial uses and resistance
7. Define community acquired infections, hospital acquired infections

B. Intellectual skills:

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

1. Relate isolated pathogen to the present clinical situation
2. Differentiate between diseases having the same presentations
3. Criticize healthcare practices from the infection control point of view
4. Recommend laboratory tests (microbiological and others) to reach diagnosis of infections
5. Analyze microbiological laboratory results
6. Interpret microbiological laboratory results

C. Professional and practical skills:

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

1. Operate the light microscope used in microbiology lab.
2. Practice aseptic techniques and other laboratory safety measures

D. General and transferable skills:

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

1. Adopt teamwork and interpersonal cooperation skills
2. Integrate information
3. Acquire problem solving skills.
4. Enhance their knowledge and skills through adoption of life-long learning practices.



III. COURSE CONTENT

- i. **Compulsory Course Basic Clinical Microbiology**
- ii. **Main topics: Students will receive presentations, group discussions, seminars, and assignments about the following subjects:**

Topics:

1. **General Microbiology:**
 - (i) Infection control in microbiology lab.
 - (ii) Quality control in microbiology lab.
 - (iii) Application of molecular biology techniques in clinical microbiology
2. **Aerobic and facultative anaerobic bacteriology** (Pathogenesis and Lab Diagnosis):
 - (i) *Spirochetes* and related organisms (*Treponema*, *Borrelia*, *Spirellum*)
 - (ii) *Mycoplasma* and *Ureaplasma*
 - (iii) *Rickettsia* and *Erlichiae*
 - (iv) *Chlamydiae*
3. **Anaerobic bacteriology** (Pathogenesis and Lab Diagnosis):
 - (i) General
 - (ii) Gram –ve non-spore forming (*Bacteroides*, *Prevotella*, *porphyromonas*, *Fusobacteria*)
 - (iii) Gram +ve forming bacilli (*Clostridia*)
 - (iv) *Other anaerobes of medical importance:* Gram –ve (*Veillonella*) and Gram +ve (*Peptostreptococcus*) and other anaerobic cocci and Gram +ve non-spore forming bacilli (*Actinomyces*, *Lactobacillus*, *porpionobacteria*, *Eubacteria*, *Eggerthella*, *Bifidobacteria*, *Arachnia*)
4. **Fungal infections:**
 - (i) General
 - (ii) Fungal infections (superficial, subcutaneous, and deep mycosis)
5. **Diagnosis of parasitic infections:**
 - (i) Intestinal parasites



6. Virology:

- (i) General
- (ii) DNA viruses
- (iii) RNA viruses
- (iv) HIV
- (v) Hepatitis viruses
- (vi) *Influenza virus* and emerging viral infections

7. Case discussions:

- (i) Case of sexually transmitted disease
- (ii) Case of anaerobic infection
- (iii) Case of fungal infection

8. Practical classes:

- (i) Smear preparation and staining (Gram, Z.N.)
- (ii) Culture on different media
- (iii) Spotting (Media, Bacterial Smears, Bacterial Growth, Anaerobic jar,..)

**iii. Course contents:** Distribution of course contents

SUBJECTS	Lectures (hrs)	Tutorials (hrs)	Practical (hrs)	Total (hrs)	% of Total
1. General Microbiology.	4	2	5	11	24.4
2. Aerobic and facultative anaerobic bacteriology (Pathogenesis and Lab Diagnosis)	4	2	4	10	22.4
3. Anaerobic bacteriology (Pathogenesis and Lab Diagnosis)	4	2		6	13.4
4. Fungal infections	2	2		4	8.8
5. Diagnosis of parasitic infections		2		2	4.4
6. Virology	10	2		12	26.6
Total	24	12	9	45	100



IV. TEACHING METHODS

The course will be managed through the following teaching methods:

7. **Lectures and Clinical case presentations and discussions:** given 4 hours/week. for 9 weeks
8. **Practical classes:** 4 hour/week for 2 weeks at the end of the course
9. **Essay home works** which are corrected by faculty member and feedback is given to students
10. **Students grouping and Lab, training and monitoring:** One faculty member is assigned to every 5 students for on job training and achievement follow up

Lecture Tutorial and Lab Timetable

Wednesday	Teaching session 1 Teaching session 2	11:30am - 12:30pm 12:30pm – 1:30pm
Thursday	Teaching session 1 Teaching session 2	11:30am - 12:30pm 12:30pm – 1:30pm



V. LIST OF REFERENCES

- **Course notes**
- **Recommended text books**
 1. Medical Microbiology. Jawetz, MenInick & Adelberg, s
 2. District Laboratory Practice in Tropical Countries. Part 2. Monica Cheesbrough
 3. Key Points In Clinical Microbiology Practice. M.A. Wassef, and A.M.S. El-Banna

VI. TEACHING AND LEARNING FACILITIES

- Lecture hall available provided with a white board.
- Audio-visual aids: available (data-show)
- Postgraduate 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 formative assessment is carried throughout the course and registered in the logbook
- Final summative examination will be carried out 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: one hour exam short essay, problem based cases & MCQ.
- **Practical:** one day two hours practical exam
- **Oral:** One session of oral exam by two examiners.

Weighing of assessment:

Exams	Marks	weight	Intended Learning Outcomes
Written	40	53.3%	To assess ILOs A(1-7), B(1-6), D(2,3)
Oral	20	26.7%	To assess ILOs A(1-7), B(1-6), D(2,4)
Practical	15	20%	To assess ILOs B(1-6), C(1,2), D(1,2,3)
Total	75	100%	

Head of Department

Prof. Dr.Fatma El Mougy