



COURSE SPECIFICATION

(Elective course: Molecular basis of diseases)

Faculty of Medicine– Mansoura University

(A) Administrative information

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| (1) Programme offering the course: | Postgraduate Master degree of Pathology |
| (2) Department offering the programme: | Pathology department |
| (3) Department responsible for teaching the course: | Pathology department |
| (4) Part of the programme: | First part |
| (5) Date of approval by the Department's council | 26/7/2016 |
| (6) Date of last approval of programme specification by Faculty council | 9/8/2016 |
| (7) Course title: | Elective course |
| (8) Course code: | PATH 505 MD |
| (9) Total hours: | 2 credit hours lectures 1 credit practical |
| (10) Total teaching hours: | 30 hours(lectures) 30 hours(practical) |

(B): Professional information

Course Aims

- 1- To build basic knowledge about normal variations in human genome, genes mutations
- 2- To provide detailed informations about cell cycle and related molecules
- 3- To help identification of principles and applications of different molecular diagnostic techniques

Intended Learning Outcomes (ILOs):

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills.

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

A- Knowledge and Understanding

- A1:**Recognize normal variations in human genome, genes and their products, cell cycle ,its signaling pathways and related molecules
- A2:**Identification of Adhesion molecules, Mutation concept, types and consequences
- A3:**Recognize classification of genetic disorders
- A4:**Recognize Principles of karyotyping
- A5:**Recognize the principles of molecular diagnostic techniques such as FISH, PCR, and flow cytometry

B- Intellectual skills

- B1.** Differentiate molecular techniques relevant to diagnosis as FISH, PCR, and flow cytometry
- B2.** Analyze indications of molecular diagnosis.

C- Professional/practical skills

- C1: Interpret the results of common diagnostic techniques as FISH and flow cytometry
- C2: Integrate the results of these techniques with the other morphological findings for approaching a diagnosis

D- Communication & Transferable skills

- D1: Present adequately themselves by improving descriptive capabilities and communication skills and respond positively to feedback.
- D2: Respect ethical relationship with staff and ethics in research.
- D3: Present attitudes that will maximize their educational experiences via continuous search in data base and life long learning.
- D4: Work in inter-professional teams to enhance patient safety and improve patient care quality.

Course content

| Content | lectures | practical |
|---|----------|-----------|
| 1-Normal variations in human genome 2-Genes and their products 3-Cell cycle ,its signaling pathways and related molecules 4-Adhesion molecules | 5 | |
| 5-Mutation, concept, types and consequences 6-Classification of genetic disorders 7-Principles of karyotyping | 5 | |
| 8-Types and principles of hybridization techniques 9-Principles of flow cytometry | 10 | 15 |
| 10-Principle and technique of PCR 11-Basics of molecular diagnosis | 10 | 15 |

Teaching methods:

- 1: Lectures & Seminars
- 2: Conferences
- 3: Training on examination of pathologic slides
- 4: Essay preparation & discussion.
- 5: Teaching of the students on pathology lab. In Mansoura university medical centers.

Assessment Schedule:

- Written exam: 48 marks
- MCQ 12 Marks
- OSPE exam: 20 marks
- Structured Oral exam: 20 marks

Other assessment without marks:

- 1-Attendance Criteria: Minimum acceptance attendance in each course is 75%
- 2- Log book should be fulfilled and signed by Head of the department

References of the course:

- 6.1: Hand books: Course notes: Book authorized by department
- 6.2: Text books: Rubbin's text book of pathology & Ackerman's surgical pathology
- 6.3: Websites:
 - <http://www.pathmax.com>
 - United States and Canadian Academy of Pathology (USCAP): <http://www.uscap.org/>
 - The Royal Collage of pathologists: <http://www.rcpath.org/>

Facilities and resources mandatory for course completion:

- Lecture halls and data show

- Pathology labs. in various Mansoura university medical centers□
- Pathology Archives of slides and tissue for problematic cases
- Extensive library and other learning resources
- Computer laboratories with a wide range of software
- Internet with a wide range of learning support material

Course coordinator: **Dr. Reham Nagib**

Head of the department: **Prof. Dr. Khaled Zalata**