COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Program offering the course:	**Doctorate degree of Medical Parasitology**
(2) Department offering the program:	**Department of Medical Parasitology**
(3) Department responsible for teaching the course:	**Department of Medical Parasitology**
(4) Part of the program:	First part
(5) Date of approval by the Department`s council	9/5/2016
(6) Date of last approval of program specification by Faculty council	9-8-2016
(7) Course title:	Molecular Parasitology
(8) Course code:	**PAR 608 MP**
(9) Total teaching hours:	30hours / 15weeks
(10) Credit hours	2 hours

(B) Professional information

(1) Course Aims:

-To provide the students with information about the available molecular diagnostic tests used in diagnosis of parasitic diseases

-To teach the students the basics of molecular diagnostic techniques.

-To educate the students the application of certain molecular techniques to changes in gene structure and function

- To teach the students how to obtain a gene sequence from database

(2) Intended Learning Outcomes (ILOs):

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

A- Knowledge and Understanding

A1	List the principles of some molecular diagnostic techniques (PCR& RNAi) and recognize their Application in Parasitology.
A2	Identify recent molecular based assays (PCR-ELISA)used in diagnosis of parasitic diseases
A3	**Name DNA vaccines developed against parasitic diseases**
A4	Define principles of genetics and gene therapy

B- Intellectual skills

B1	Predict the proper DNA quantification method
B2	Select proper molecular diagnostic tools and justify their use, advantage and indications.
B3	Predict the role of stem cell in parasitic diseases

(3) Course content:

Subject	NO. of teaching Ws	Total teaching hours	
		Lecture/ week	Total
Nucleic acids structure and function	2	2	4
Basics of DNA and RNA extraction from worms e.g. schistosomes and protozoa e.g. Giardia DNA quantification methods	2	2	4
Basics of polymerase chain reaction	2	2	4
Methods of PCR product analysis	1	2	2
Restriction Endonucleases	1	2	2
Bioinformatics (general concepts & search database for specific sequence)	1	2	2
Modulation of gene expression by RNA interference	2	1	2
Transgenics and Gene therapy	2	1	2
Special topics in molecular parasitology: -Recent advances in DNA vaccine development against certain parasites -Stem cell and its role in parasitic diseases -Recent diagnostic techniques in parasitology e.g. PCR-ELISA and oligochromatography PCR	 4 2 2	 1 1 1	 4 2 2
Total	15		30

(4) Teaching methods:

4.1: Lectures

4.2: Student Power point presentation

4.3: Small group discussion and quizzes

(5) Assessment methods and schedule:

5.1: multiple choice question exam: after completing the course, 20 min (at the end of first semester).

5.2: Written exam: after completing the course, 3 hours (at the end of first semester).

Percentage of each assessment to the total mark:

Tools	Marks	Percentage of the total mark
Continuous assessment (MCQ)		20
Written exam		80
Total	100	

Other assessment without marks: seminars as described above included in the log book.

(6) References of the course:

A) Text books (available at the library):

1- Molecular Biology: Principles of Genome Function, 2014.
2- Molecular Biology techniques: A Classroom Laboratory Manual, 2012.
3- Modern Clinical Molecular Techniques, 2012.

B) Web sites:

1- University of Glasgow/Institute of Molecular, Cell and Systems Biology (http://www.gla.ac.uk/researchinstitutes/biology/)
2- Kenyon College, program in Biochemistry and Molecular Biology (http://biology.kenyon.edu/BMB/websites.htm)

C) Useful links:
1- PubMed: http://www.ncbi.nlm.nih.gov/pubmed/
2- Entrez: http://www.ncbi.nlm.nih.gov/gquery/
3- REBASE Homepage: http://rebase.neb.com/rebase/rebase.html
4- BLAST: http://blast.ncbi.nlm.nih.gov/Blast.cgi
5- https://www.neb.com/
6- http://www.yourgenome.org/

(7) Facilities and resources mandatory for course completion:

Lecture halls and data show.

Research laboratories: the department has two research laboratories equipped with instruments needed for the course including:

- PCR machine
- Electrophoresis set
- Ultracentrifuge
- Computer for Data analysis.

Course coordinator: Dr. Amira Taman

Head of the department: Prof. Hala EL-Nahas