COURSE SPECIFICATION

(Bioinformatics)

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	PhD degree of Regenerative Medicine/ RMD
(2) Department offering the programme:	Inter-departmental Faculty of Medicine
(3) Department responsible for teaching the course:	**Medical Biochemistry Department**
(4) Part of the programme:	Second part (Semester V)-Elective
(5) Date of approval by Faculty council	9/8/2016
(6) Date of last approval of programme specification by Faculty council	9/8/2016
(7) Course title:	**Bioinformatics**
(8) Course code:	**RMD604RS3**
(9) Total credit hours:	3 Theoretical + 1.5 Laboratory/Practical

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows:

This course provides the students by knowledge and skills required to understand computational analysis methods of biological sequences. Particular emphasis will be given to sequence alignment problems, search of similarities in databases, identification of functional domains in DNA and proteins, and comparative analysis of genomes.

(2) Intended Learning Outcomes (ILOs):

A- Knowledge and Understanding:

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

A1: Explain the chemistry that underlies molecular reactions in cells and the techniques used to investigate them.

A2: Describe the cell structure, gene structure, replication, expression, inheritance, evolution and relevant experimental methods of analysis;

A3: Illustrate the principles and recent advances in molecular genetics and its applications.

A4: Point out the principles that determine the structure of proteins, its relation to function, activity of enzymes and using relevant experimental methods of analysis.

B- Intellectual skills:

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

B1: Analyze and solve problems related to molecular biology and genetics.

C- Professional/practical skills:

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

C1: Practice appropriate laboratory skills, including safe working practices where relevant.

C2: Practice appropriate computer skills.

D- Communication & Transferable skills:

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

D1: Communicate effectively using a variety of formats.

D2: Use effectively a range of information sources.

(3) Course content:

Subjects	Lectures	Clinical	Laboratory	Field	Total Hours
Bioinformatics / RMD604RS3			15W		
1. Bioinformatics basics-1 2. Bioinformatics basics-2 3. Genomics 4. Proteomics 5. Metabolomics 6. Data Analysis 7. Bioinformatics applications -1 8. Bioinformatics applications-2	3		1.5		4.5 hours

(4) Teaching methods:

4.1: Lectures

4.2: Practical lab work

(5) Assessment methods:

5.1: Exam Description

The final exam is composed of:

Two written exams (100 marks) 2 hours (Short Essay questions 1 hours 80 marks + MCQ 1 hour 20 marks)

Other logbook activities (Practical part of the course and scientific activities) are assessed by supervisor of the activity without marks

5.2: Marks

Course/ code	Marks					
	Written Exam			Practical Exam	Oral Exam	Total
	Short Essay questions	MCQ	total			
Bioinformatics/ RMD604RS3	**80**	**20**	**100**	--	--	**100**

(6) References of the course:

Text books: Essential Bioinformatics

(7) Facilities and resources mandatory for course completion:

Lecture halls and data show and MERC labs

Course coordinator: Dr. Mohamed Salama

Programme Director: Prof.Mohamed Sobh

Date: