COURSE SPECIFICATION

(Cell and Organ Based Research)

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	Postgraduate PhD degree of Regenerative Medicine/ RMD
(2) Department offering the programme:	Inter-departmental (Faculty of Medicine)
(3) Department responsible for teaching the course:	Clinical Pathology Department
(4) Part of the programme:	Second part (Semester IV)-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:	**Cell and Organ Based Research**
(8) Course code:	**RMD630RS2**
(9) Total credit hours:	3 Theoretical + 1.5 Laboratory/Practical + 0.5 field work

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows:

1- This course provides the students with advanced theoretical knowledge in working with cell systems e.g. ES cells, somatic stem cells, and organ systems such as the hematopoietic cells, pancreas, central nervous system, and heart. This instruction includes state-of-the art knowledge on the most recent research results emerging from work on the system.

2- Second, students receive direct instruction on how to design and perform experiments to test hypotheses on cell-based regenerative strategies.

3- Third, they gain extensive practical laboratory experience on experimental protocols in cell and organ work.

(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.

A5: Demonstrate the molecular aspects of cell biology, immunity, differentiation and development, and how they can be investigated experimentally.

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.

B4: Apply theoretical concepts to the study of the molecular biology and genetics and evaluate the relationships between theory and practice.

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.

D3: Organize and present intellectual argument commensurate with the level of award.

D4: Work effectively both alone (e.g. on assignments or during the project) and as part of a team (e.g. in group work, during group discussions and workshops).

D5: Demonstrate key skills in the retrieval, preparation, analysis and interpretation of information from different sources.

D6: Acquire continued self-managed professional development.

D7: Apply the principle of reflective practice.

(3) Course content:

Subjects	Lectures	Clinical	Laboratory	Field	Total Hours
Cell and Organ Based Research / RMD630RS2					15 w
1- Replication and transcription of the genome. 2- regulation of the cell cycle and mitosis. 3- protein biosynthesis and membrane targeting. 4- cell motility and the cytoskeleton. 5- signal transduction. 6- nerve and muscle function 7- organ systems (overview): 8- organ systems (respiratory), 9- organ systems (renal), 10- organ systems (gastrointestinal), 11- organ systems (endocrine) , 12- organ systems (reproductive) 13- organ systems (CNS) 14- organ systems (CVS) 15- organ systems (Locomotor)	3		1.5	0.5	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			
Cell and organ based research/ RMD630RS2	**80**	**20**	**100**	--	--	**100**

(6) References of the course:

Text books: Sourcebook of Models for Biomedical Research

(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: