COURSE SPECIFICATION

(Microscopy)

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:	Histology Department
(4) Part of the programme:	Second part (Semester III)
(5) Date of Course approval by Faculty council	9/8/2016
(6) Date of last approval of programme specification by Faculty council	9/8/2016
(7) Course title:	**Microscopy**
(8) Course code:	**RMD602BS2**
(9) Total credit hours:	4 Theoretical + 1.5 Laboratory/Practical

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows:

This course provide students with an overview over basic and high-end microscopy. Topics that will be covered include basic ray optics, basic wave optics, fluorescence microscopy, digital imaging, electron optics, electron microscopy in the life sciences, preparation of biological samples for TEM and SEM, semi- and ultrathin sectioning, immunogold labeling, microscopy (TEM/SEM). The students will know the basic principles of light and electron optics and will be able to analyze biological samples with wide field, fluorescence, and confocal microscopes, as well as with TEM and SEM. In addition, they will know basic methods for preparing tissues for light and electron microscopic analysis.

(2) Intended Learning Outcomes (ILOs):

B- Intellectual skills:

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

B3: Execute and report a research project in order to develop skills necessary for independent research.

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.

C3: Isolate, characterize, culture and transdifferentiate stem cells.

D- Communication & Transferable skills:

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

D2: Use effectively a range of information sources.

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
Microscopy/RMD602BS2	**15 weeks**				
1. Basics of physics-1 2. Basics of physics -2 3. Light microscopy 4. Fluorescent microscopy 5. Confocal Laser Microscopy (CLM) 6. Electron Microscopy 7. Lab Safety 1 8. Lab safety 2 9. Lab Safety 3 10. Lab Safety 4	4		1.5		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 (200 marks) 3 hours (Short Essay questions 2 hours 160 marks + MCQ 1 hour 40 marks)

Final Practical exam (OSPE) (100 marks): five stations exam.

Final oral exam (OSCE) (100 marks): five stations exam.

Percentage of each Assessment to the total mark:

Written exam: 50% Practical exam: 25% Oral exam: 25%

Other assessment without marks: seminars and log book activities.

5.2: Marks

Course/ code	Marks					
	Written Exam			Practical Exam	Oral Exam	Total
	Short Essay questions	MCQ	total			
Microscopy/ RMD602BS2	**160**	**40**	**200**	**100**	**100**	**400**

(6) References of the course:

Text books:

Handbook of Biological Confocal Microscopy

Scanning Electron Microscopy.

(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: