كيفية إعداد توصيف المقررات الدراسية للدراسات العليا

توصيف المقررات الدراسية يتضمن توضيح أقل المتطلبات الواجب توافرها في طالب الدراسات العليا للحصول على درجة الماجستير والدكتوراه. يشمل توصيف المقرر الدراسي الاتي:

- الأهداف التعليمية للدرجة العلمية
- المعرفة والمهارات التي يجب أن يحصل عليها الطالب في نهاية فترة الدراسة والتدريب
- طرق التدريس (مثال: محاضرات ، ورش عمل، تدريب معملي)
- محتويات المنهج العلمي (الموضوعات العلمية ومراجعها، عدد ساعات تدريس الجزء النظري والعملي والإكلينيكي)
- طرق تقييم الطالب (مثال: الامتحانات بكافة صورها، الحضور، المقال العلمي، log book)
- نظام الامتحانات وكيفية توزيع الدرجات
- طرق التقييم للمقرر الدراسي
- المراجعة السنوية والمسئولين عنها.

PROGRAMME SPECIFICATION FOR POSTGRADUATE DEGREE

This specification provides a concise summary of the main features of the course and the learning outcomes that a typical candidate might reasonably be expected to achieve and demonstrate if he or she takes full advantage of the learning opportunities provided. More detailed information on the specific learning outcomes, context and the teaching, learning and assessment methods of each module can be found in the Programme Descriptions Handbook.

COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	Master degree in Medical Physiology
(2) Department offering the programme:	Department of Medical Physiology
(3) Department responsible for teaching the course:	Department of Physiology
(4) Part of the programme:	Second Part
(5) Date of approval by the Department`s council	10/7/2016
(6) Date of last approval of programme specification by Faculty council	12/7/2016
(7) Course title:	**Medical Physiology**
(8) Credit hours:	13 hrs lectures + 10 hours practical
(9) Course code:	**PHYS 503 MP**
(10) Total teaching hours:	195 hours lectures + 300 hours practical

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows: (either to be written in items or as a paragraph)

To enable students to master basic facts of medical physiology & pathophysiology of the common medical problems. Also, to develop the skills related to physiological experimental work.

(2) Intended Learning Outcomes (ILOs):

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

A- Knowledge and Understanding

A4 Point out the physiology of exctible tissues including nerves and muslces

A5 Describe functional organization of different organs of different body systems

A6 Point out the mechanisms involved in regulations of different body systems including respiratory system, CVS, digestive, urinary and nervous systems under different conditions of health and disease such as ms exercise, pregnancy, aging and hypoxia

A7 Describe the mechanisms involved in the endocrine regulation of metabolism, growth and reproduction

A8 Describe the mechanisms aiming at maintenance of homeostatic functions as: pH, body water, electrolytes, osmolarity and body temperature

A9 Describe some pathophysiological aspects underlying the development of common diseases as hypertension , heart failure, respiratory failure, endocrinal disorders.

B- Intellectual skills

B2 Categorize the function of different organs subserving the homeostasis

B3 Solve medical problems related to diagnosis & treatment of physiological problems as: pH, osmolarity, anemia

B4 Analyze & interpret some physiological records (ECG & spirogram) and some laboratory tests (blood count, hemoglobin, pregnancy tests)

B7 interpret the pathophysiological mechanisms of different diseases

B8 Compare the function of different chemical compounds inside the body

B10 Perform scientific research/ thesis about a scientific problem

B11 Evaluate risks in the professional practices of Medical Physiology

B12 Plan for development of performance in the field of medical Physiology

C- Professional/practical skills

C1 Work effectively in a group in biological science laboratories.

C2 Deal with experimental animal as: Rats, Frogs, and Rabbits

C4 Record signals from animals such as muscle twitch from frog muscle, ECG from rats, aortic strip from rabbit, small intestinal motility etc……

C5 Use basic medical devices such as sphygmomanometer, stethoscope, and thermometer, medical hammer, tuning fork, compass,

C8 Work biochemical analysis for some parameters in blood and tissues samples and gel electrophoresis

D- Communication & Transferable skills

D1 Relate course information effectively in the field of general medicine practice.

D2 Retrieve, manage, and manipulate course information by all means, including electronic means.

D3 Discuss freely about any medical problem.

D4 Present course information clearly in written, electronic and oral forms.

D5 Communicate ideas and arguments effectively.

D6 Analyze and use numerical data including the use of simple statistical methods

(3) Course content:

a) Lectures

Subjects	Lectures / Seminars
A- Physiology of autonomic NS 1) Functions of sympathetic and parasympathetic NS 2) Autonomic ganglia 3) Functions of ANS under different conditions. 4) Pharmacology of ANS	12
B- Physiology of Excitable Tissues (Nerve & Muscle) 1) Properties of nerve fibers 2) R.M.P, A.P and Graded potential 3) Factors affecting excitability of Types nerve fibers 4) Nerve muscular transmission	14

5) Mechanism of skeletal ms. Contraction 6) Changes occurring in the muscle during and after muscle contraction 7) Types and Factors affecting skeletal ms Contraction 8) Physiology of Smooth muscles	
C- CVS Physiology 1) Cardiac properties 2) Cardiac cycle, JVP, AP, ECG, HS 3) Heart rate 4) C .O .P and cardiac reserve 5) Arterial blood pressure 6) Capillary, Venous, Lymphatic, Coronary, Pulmonary, Cerebral, splanchanic and Cutaneous circulations 7) Hemorrhage and Shock	20
D- Respiratory physiology 1) Pulmonary ventilation. 2) Gas transport. 3) Regulation of respiration. 4) Respiratory adjustments in health & disease.	14
D- Blood physiology 1) Plasma proteins 2) Blood volume , total body water 3) Haemostasis and disorders of haemostasis 4) RBCS 5) Blood groups and Blood transfusion 6) WBC and Immunity	12
E- Digestive system 1) Digestive & absorptive function of GIT. 2) Reflexes controlling function of GIT. 3) Hormones controlling function of GIT. 4) Functional abnormalities in GIT	16
F- Endocrine and reproductive physiology 1) Chemical nature, release and transport of hormones and mechanism of hormone action. 2) Pituitary gland (adeno and neurohypophysis) and Physiology of growth. 3) Thyroid gland. 4) Parathyroid gland and Endocrine regulation of calcium & phosphate metabolism. 5) Endocrine regulation of blood glucose and endocrine function of pancreas 6) Suprarenal gland: cortex and medulla.	14

7) Physiology of male and female reproductive system	
G- Renal Physiology 1) Nephron and juxtaglomerular apparatus. 2) Renal blood flow RBF. 3) Glomerular filtration and Glomerular filtration rate. 4) Methods of studying renal physiology and concept of clearance methods. 5) Tubular function 6) Renal handing of water. 7) Control of body fluid osmolarity (water balance). 8) Regulation of sodium excretion & extracellular fluid volume. 9) Diuresis and diuretics. 10) Renal handling of K+, Ca+2, mg+2, and phosphate. 11) Role of the kidney in acid - base balance. 12) Physiology of Micturition	30
H- Central nervous system 1) Physiology of autonomic N. system 2) Physiology of somatic sensations 3) Neurotransmitters and neuromodulators 4) Reflex Actions. 5) Control of posture and Movement. 6) Motor neuron lesions and spinal cord lesions 7) Learning, Memory, languages speech. 8) Electrical activity of the brain, sleep- wake stoles & circadian rhythms 9) Hypothalamic role in endocrine & control, stress and emotions 10) Cerebrospinal fluid formation –composition and function	45
I- Physiology of special senses 1) Physiology of vision (image formation and phototransduction) 2) Functions of intraocular fluids and accessory extroocular structures 3) Physiology of hearing 4) Taste sensation 5) Olfactory sensation	8
J- Physiology of metabolism 1) Energy metabolism 2) Metabolic Rate and thermogenesis 3) Control of Food Intake and Regulation of Energy Stores 4) Regulation of Body Temperature 5) Physiology of Exercise	10

Total teaching hours	195

3.1 Practical labs

Experimental and Practical Training	Hours
1. Preparation of **physiological solutions** (Tyrode–Ringer–frog' saline)	10
2. Recording of **Aerobic exercise physiology** by biopac system	10
3.Measurement of some serum parameters such as blood glucose and serum creatinine by UV spectrophotometer	20
4. Induction of **ONE** of the followings experimental animal model (DM,renal ischemia,liver cirrhosis,obesity in rats ,parkinsons,hypo or hyperthyroidism)	30
5.**Studying of the effect of ions** and **drugs** on **NMJ** in frogs and rats by biopac	15
6.Workshop in **real time PCR**	15
7- Recoding of the factors affecting simple muscle twitch by biopac	10
8. Measurement of pulmonary functions, Galvanic skin resistance (G S R) by and reaction time by biopac system	10
9.Measurement of **glucose uptake in skeletal muscle** (Diaphragm & gastrocnemius) (at rest & in response to exercise)	20
10. Effects of the drugs and hormones and ions on **smooth muscle motility of isolated segment rabbit small intestine**	10
11. Effects of the drugs and hormones and ions on **smooth muscle motility of isolated uterus and Fallopian tube**	10
12. Recording of urodyanmics by pressure transducer by Powerlab system	20
13. Determination of **pain threshold in animal** by hot plate or paw-pressure test	15
14.**Effect of different types of stress** on some physiological parameters by Biopac system	15
15. Workshop in detection of **gene polymorphism or gene mutation** study	30
16. Effects of the drugs and hormones and ions on **tracheal smooth muscles motility**	10
17. Assessment of Compliance of Rabbit's lung	10
18. **Recording ABP in rats by rat tail indirect system** and studying the effect of exercise & autonomic drugs	10
18. Effects of the drugs and hormones and ions **on contractility of isolated perfused whole heart and isolated atria**	10
19. Effects of the drugs and hormones and ions on **Aortic strip smooth muscle contraction**	10

20. Assessment of platelet aggregation	10
Total practical hours	300

(4) Course matrix ILOs

content	ILOs																
	Knowledge and understanding																
	A 1	A 2	A 3	A 4	A 5	A 6	A 7	A 8	A 9	A 10	A 11	A 12	A 13	A 14	A 15	A 16	A 17
ANS						√		√									
Nerve &Ms				√	√												
CVS					√	√			√								
Respiration					√	√			√								
Blood					√	√			√								
Digestive system					√	√			√								
endocrine					√		√		√								
Renal phys.					√	√		√	√								
CNS					√	√			√								
Special senses					√												
metabolism					√		√	√									

content	ILOs																									
	Intellectual skills												Content	Practical Skills								Transferrable skills					
	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12		c 1	c 2	c 3	c 4	c 5	C 6	c 7	C 8	D 1	D 2	D 3	D 4	D 5	D 6
ANS		√					√	√		√	√	√	1. Preparation of physiological solutions (Tyrode–Ringer-frog' saline)	√				√				√	√	√	√	√	√
Nerve &Ms		√					√	√		√	√	√	2. Recording of Aerobic exercise physiology by biopac system	√	√		√				√	√	√	√	√	√	√
CVS		√		√			√	√		√	√	√	3.Measurement of some serum parameters such as blood glucose and serum creatinine by	√	√		√	√			√	√	√	√	√	√	√

												UV spectrophotometer													
Respiration		√	√				√	√		√	√	√	4. Induction of ONE of the followings experimental animal model (DM,renal ischemia,liver cirrhosis,obesity in rats ,parkinsons,hypo or hyperthyroidism)	√	√			√			√	√	√	√	√	√	√
Blood		√	√	√			√	√		√	√	√	5.Studying of the effect of ions and drugs on NMJ in frogs and rats by biopac	√	√		√	√			√	√	√	√	√	√	√
Digestive system		√					√	√		√	√	√	6.Workshop in real time PCR	√	√		√	√			√	√	√	√	√	√	√
endocrine		√		√			√	√		√	√	√	7- Recoding of the factors affecting simple muscle twitch by biopac	√	√		√	√			√	√	√	√	√	√	√
Renal phys.		√	√				√	√		√	√	√	8. Measurement of pulmonary functions, Galvanic skin resistance (G S R) by and reaction time by biopac system	√			√	√			√	√	√	√	√	√	√
CNS		√					√	√		√	√	√	9.Measurement of glucose uptake in skeletal muscle (Diaphragm & gastrocnemius) (at rest & in response to exercise)	√	√		√	√			√	√	√	√	√	√	√
Special senses		√					√	√		√	√	√	10. Effects of the drugs and hormones and ions on smooth muscle motility of isolated segment rabbit small intestine	√	√		√	√			√	√	√	√	√	√	√
metabolism		√					√	√		√	√	√	11. Effects of the drugs and hormones and ions on smooth muscle motility of isolated uterus and Fallopian tube	√	√		√	√				√	√	√	√	√	√
													12. Recording of urodyanmics by pressure transducer by Powerlab system	√	√		√										
													13. Determination of pain threshold in animal by hot plate or paw-pressure test	√	√												
													14.Effect of different types of stress on some physiological parameters by Biopac system	√	√		√	√									
													15. Workshop in detection of gene polymorphism or gene mutation study	√	√						√						
													16. Effects of the drugs and hormones and ions on tracheal smooth muscles motility	√	√		√				√						
													17. Assessment of Compliance of Rabbit's lung	√	√						√						

												18. Recording ABP in rats by rat tail indirect system and studying the effect of exercise & autonomic drugs	√	√		√	√			√						
												18. Effects of the drugs and hormones and ions on contractility of isolated perfused whole heart and isolated atria	√	√						√						
												19. Effects of the drugs and hormones and ions on Aortic strip smooth muscle contraction	√	√		√				√						
												20. Assessment of platelet aggregation	√							√						

(5) Teaching methods:

Method	ILOS assessed by the exam.
5.1: Lectures	A4-A9, B2-B4,B7,B8,B10-b12
5.2: practical sections	C1,c2,c4,c5,c7,c8
5.3: Seminars	A4-A9, B2-B4,B7,B8,B10-b12,D1-D6

(6) Assessment methods:

Tools	Mark	Percentage of the total mark	ILOS assessed by the exam.	Schedule
6.1 MCQ exam	60	10%	A4-A9, B2-B4,B7,B8,B10-b12	Feb/Sept
6.2 Written exam	240	40%	A4-A9, B2-B4,B7,B8,B10-b12	May/Nov
6.3 Oral exam	150	25 %	A4-A9, B2-B4,B7,B8,B10-b12, C1,c2,c4,c5,c7,c8	May/Nov
6.4 Practical exam	150	25%	C1,c2,c4,c5,c7,c8	May/Nov
Total marks	600			

(7) References of the course:

6.1: Hand books: Staff member books & lecture notes

6.2: Text books:

a) Textbook of Medical Physiology (Guyton & Hall).

b) Review of Medical Physiology (William F. Ganong).

6.3: **Web sites:** *http:// Advan. Physiology.org*

(8) Facilities Required for Teaching And Learning:

The facilities include: appropriate teaching accommodation, teaching aids, laboratories, laboratory equipment, computer, etc, facilities for field work, site visits, etc, which are necessary for teaching the course.

(9) Facilities and resources mandatory for course completion:

1- Attendance Criteria:

Minimum acceptance attendance in each course is 75%

2- Assessment tool:

Minimum percentage accepted is 60% of total marks

Course coordinator: Dr. Abdelaziz M. Hussein

Head of the department: Prof. Sabry Mohamed Awad Gad

Date: