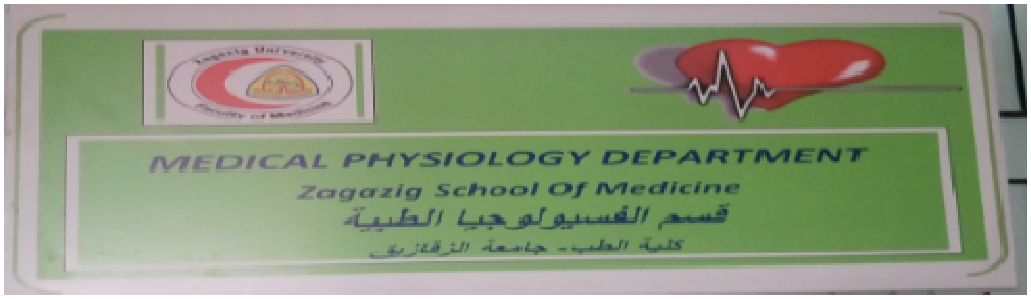
PHYSIOLOGY DEPARTMENT



Contents

Introduction:

Department of medical physiology is one of almost 30 departments in the Faculty of Medicine, Zagazig University. Department of medical physiology shares biochemistry departments in the 2nd floor of academic building of Faculty of Medicine, Zagazig University.

The department provides the educational services for the undergraduate medical students in the subjects of physiology at the first and second years of the undergraduate medical education for Egyptian & Malaysian students. In addition it offers the postgraduate degrees (Master and Doctorate) in medical physiology as well as the physiological basic sciences for Clinical specialties (Diploma, Master and Doctorate) in most of clinical departments.

The department share in research work in the medicine that help in discover the new physiologically active mediators, hormones and understanding the mechanisms of action and functions of many systems of the body.

Our objective is not only to provide the previously mentioned services but also we have specialized well equipped research unit in endocrinology and metabolism that help research work in this hot part of medicine.

MISSION OF PHYSIOLOGY DEPARTMENT

Our goals in the department of Physiology is to build the competencies of the undergraduate medical student & postgraduate physicians specially in the field of medical ethics, communication skills, and to provide basic physiological background to all medical students. Also to promote the scientific researches in the field of physiology and to develop a new model for high quality medical education.

Preface

ان قسم الفسيولوجى بكلية الطب البشرى جامعة الزقازيق يضع من اهم اهدافه ان يلم طلاب الفرقتين الاولى و الثانية بالكلية بكل الوظائف الحيوية للاعضاء المختلفة بالجسم و علاقاها فيما بينها، و ايضا يضع ضمن مقرراته العملية ان يوثق العلاقة بين الطالب و المرضى فى مراحل مبكرة عن طريق زيارة العيادات الخارجية بالمستشفى و ان يقوم الطالب بتطبيق عملى لما درسه عمليا على المرضى تحت اشراف الاطباء.

كما يضع القسم بين اهدافه تزويد طلاب الدراسات العليا من الماجستير و الدكتوراة بالمعلومات التطبيقية التى تخدمهم فى حياتهم العملية.

و يشارك القسم سنويا فى العديد من المؤتمرات الطبية للفسيولوجيا فى كل الجامعات المصرية حرصا منه على التفاعل و الاطلاع على كل ماهو جديد ، كما حرص القسم على تنظيم سيمينار شهرى فى حضور كل اعضاء هيئة التدريس بالقسم لتطوير و تحديث المعلومات باستمرار للكوادر المختلفة بالقسم.

كما ان هناك بعض من اعضاء هيئة التدريس بالقسم لديهم دبلوم و ماجستير و دكتوراة فى بعض التخصصات الاكلينيكة فى الطب كالقلب و التغذية و الروماتيزم مما يثرى كوادر القسم المختلفة.

رئيس القسم

أ.د / شريف وجيه منصور

Staff members

	Name	Birth D	demons	Ass. lec	lec	Ass . prof	Prof.
1	*Sherief Wagih Mansour*	*14/2/1961*	*22/10/1986*	*3/3/1990*	*21/3/1995*	*30/5/2000*	*28/6/2005*
1	*Mohammed S A Zamzam.*	*2/8/1949*	*29/2/76*	*24/9/79*	*7/8/83*	*21/9/88*	*24/1/92*
5	*Maher N. Ibrahim*	*10/4/54*	*26/10/80*	*22/2/84*	*18/1/89*	*28/2/93*	*24/11/98*
6	*Mohammed A. Al-ghanam.*	*5/8/55*	*30/9/80*	*23/1/83*	*13/11/85*	*31/1/90*	*30/5/00*
7	*Mohammed S.T. Ali*	*28/3/55*	*19/10/82*	*31/7/85*	*21/9/88*	*24/11/92*	*30/5/00*
9	*Ahmed B. Abdelallah*	*29/10/57*	*28/3/84*	*19/8/87*	*22/8/90*	*19/9/95*	*26/9/00*
10	*Ali K. Asala.*	*25/1/57*	*25/10/86*	*26/9/89*	*24/8/92*	*30/9/97*	*26/11/00*
12	*Mohammed A.M. Alsaid*	*22/4/59*	*22/10/86*	*3/3/91*	*21/3/95*	*30/5/01*	*15/8/05*
13	*Akmal A. H. Diab.*	*21/3/60*	*22/10/86*	*15/10/90*	*19/9/95*	*26/9/01*	*24/10/05*
14	*Mohammed H.M. Ibrahim*	*15/12/59*	*22/10/86*	*3/3/91*	*12/3/95*	*25/7/01*	*1/1/07*
15	*Mohammed S.Y. Hagag*	*27/6/59*	*18/2/87*	*15/10/91*	*21/3/95*	*25/7/01*	*1/1/07*
16	*Kareman A. S. Bahlol*	*24/3/59*	*22/10/86*	*15/10/90*	*16/7/96*	*28/10/01*	*1/1/07*
17	*Soad A. A. Sliem*	*25/7/59*	*11/11/86*	*15/10/90*	*16/7/96*	*28/8/01*	*2007*
18	*Salah M. I. M. Zaghlol*	*26/11/75*	*25/7/83*	*21/7/87*	*21/10/92*	*31/5/01*	*2008*
19	*Sherien A.Bedier*	*17/2/67*	*19/5/92*	*21/9/96*	*21/2/01*	*5/07*	*2017*
20	*Mustafa H. Abdelsalam.*	*19/11/66*	*19/5/92*	*21/9/96*	*21/2/01*	*9/07*	*2018*

21	Nawal K. Gerges.	30/5/66	19/5/92	29/3/98	25/3/03	9/08	2017
22	Aza A. Yousef.	5/7/66	19/5/97	31/3/99	24/2/04	9/09	2017
23	Kamelia I. Ateya.	/ /71	5/8/97	29/10/01	19/7/05	11/2010	----------
24	Abeer A. Khalifa	9/1/73	23/8/99	22/3/03	5/9/06	20/9/11	2017
25	Dalia I. Abdel-alim	17/5/73	23/8/99	22/3/03	5/9/06	20/9/11	2017
	Mai M. H. Joifel.	1/11/70	10/8/96	4/10/00	4/10/03	11/2011	----------
26	Enas A. Nassar	31/7/72	19/9/98	22/3/03	5/9/06	1/2014	----------
27	Randa S. Gomaa	17/5/72	19/9/98	22/3/03	5/9/06	/2015	----------
28	Hosam M. Edris	21/1/73	19/9/98	22/3/03	5/9/06	11/2015	----------
29	Abeer A. Saeed	5/8/68	5/7/94	25/8/98	24/2/04	----------	----------
31	Abdo M. A. Ibrahim	9/2/64	15/3/93	25/9/99	27/7/04	----------	----------
32	Naglaa A. Ahmed	30/9/73	23/8/99	23/8/04	23/9/08	----------	----------
33	Mohammed Y. Rezk	23/1/73	13/8/00	23/3/08	23/9/08	----------	----------
34	Rania R Madkour	8/1/74	13/8/00	24/7/05	/10	----------	---------
35	Ismail Elsayed.	23/8/74	13/8/00	24/7/05	30/3/10	----------	----------
36	Khalid Aboul-fadl	21/6/1975	18/9/01	4/2006	1/2010		
37	Doaa A. AbdElmoety					----------	----------

38	Nadeine A Raafat						
39	Hany A Katawy						
40	Maha A						
41	Marwa A Mohammad	3/11/1979	7/2004	4/2008	9/2012		
42	Sama S. Khalil						
43	Islam K.	21/8/1977	2003	2007	2013		
44	Ibtesam I						
45	Reham H Ibrahim						
46	Suzan M Mohammad						
	Safya I.Ismaeel	20/6/1981	2006	2010	2014		
47	Eman H Reda						
48	Radwa M						
49	Nanees F Elmalky						
50	Wesam R Ashour	29/9/1983	20/5/2008	5/2012			
51	Hadeel ElSherbeny	10/8/1983	2008	5/2012	30/10/2017		
52	Ahmed El-Sayed Ahmed						
53	Nour El Hoda Abdel Aziz						

Physiology Undergraduate Course

Overall Objective :

The main objective of Physiology Department is to teach physiological medical princ iples and to build some medical skills for the undergraduate (1st & 2nd years) medical students.

Course specifications

(Course title: Human medical physiology)

Course code: HP UG 01

(1st) year of Undergraduate program

Academic year (2017/ 2018)

Allocated marks: 250
Course duration: 36 weeks
Total teaching hours: 210 hrs
Lectures: 150 hrs
Practical/small group sessions: 60 hrs
Course director: Head of Physiology Department Prof. Shreif Wagih Mansour **Course coordinator**: Prof. Dalia I. Abdel Aleem, Ass.Prof. Mai M. H. Joifel.
Course management team:
Prof. Sherief Wageh Mansour Prof. Ahmed Bahaa Eldein Abdallah, Prof. Maher I. Nageeb, prof Mohammed A. AlGannam, Prof. Prof. Akmal A Diab, Prof. Soad A. Sleem, Prof. Azza A. Megahed, Prof. Abeer A,Khalefa, Prof. Dalia I. Abdel Aleem and Prof. Nawal Kh Gerges.

Teaching staff:
Professors: 17 Assistant Prof. : 6
Lecturers : 15 Assistant lecturers : 17 Demonstrators :12

I. GOALS OF THE COURSE:

By the end of this course the candidate will be able to:

1. Explain the function of autonomic nervous system, CVS, Respiratory system, blood, and nerve & muscle functions.
2. Apply principles of physiology to explain deviations from normal.
3. Be trained to follow the medical ethics in the practical laboratory.
4. Develop appropriate communication with colleagues, patients and supervisors
5. Establish satisfactory practical skills that are related to physiology.

6. Realize and enhance the importance of appropriate attitudes and professionalism
7. Be prepared for continuous life long learning strategies and tools
8. Interpret the routine and common chemical laboratory data

II. INTENDED LEARNING OUTCOMES:

By the end of the course the students will be able to:

Knowledge (K) :

C.V.S.

K.01- **Define** and **discuss** properties of cardiac muscle.
K.02- **Discuss** ECG.
K.03- **Discuss** heart sounds.
K.04- **Describe** cardiac cycle.
K.05- **Describe** types of cardiac arrhythmias.
K.06- **Describe** heart block.
K.07- **Describe** heart sound
K.08- **Discuss** cardiac output.
K.09- **Discuss** cardiac work.
K.10- **Discuss** regulation of diameter of arterioles.
K.11- **Discuss** arterial blood pressure.
K.12- **Describe** heart rate.
K.13- **Discuss** hemorrhage and shock.
K.14- **Describe** venous circulation.
K.15- **Identify** capillary haemodynamics.
K.16- **Discuss** edema.
K.17- **Discuss** coronary circulation.
K.18- **Discuss** cerebral circulation.
K.19- **Discuss** fetal circulation.

Nerve and muscle

K.21- **Describe** the neuron.
K.22- **Define** degeneration and regeneration of nerve fibers.
K.23- **Describe** excitability.
K.24- **Discuss** resting membrane potential.
K.25- **Describe** action potential.
K.26- **Discuss** factors affecting excitability of nerves.
K.27- **Describe** effects of sub-threshold stimulus.
K.28- **Discuss** neuromuscular transmission.
K.29- **Describe** Skeletal muscle, structure and mechanism of m. contraction.
K.30- **Discuss** Changes accompany muscle contraction**.**
K.31- **Describe** simple muscle twitch.
K.32- **Discuss** summation of muscle contractions.
K.33- **Discuss** EMG (electromyography).
K.34- **Describe** smooth muscle.

K.35- **Compare** skeletal and smooth muscle contraction

Blood

K.36- **Discuss** Plasma and plasma proteins.
K.37- **Discuss** blood volume.
K.38- **Describe** RBCs: Character, function, metabolism and Erythropiosis.
K.39- **Describe** Hemoglobin.
K.40- **Discuss** function of spleen.
K.41- **Explain** destruction of RBCs..
K.42- **Explain** RBCs laboratory tests..
K.43- **Discuss** Anemia: Classification,
K.44- **Discuss** hemolytic anemia, iron deficiency anemia and B12 deficiency anemia.
K.45- **Discuss** polythyceamia.
K.46- **Discuss** blood groups.
K.47- **Discuss** platelets (structure, count, function, abnormalities).
K.48- **Discuss**. Coagulation.
K.49- **Discuss** disorders of hemostasis
K.50- **Discuss** White blood cells (structure, types, count, function, abnormalities)..
K.51- **Define** immunity.
K.52- **Discuss**. Natural immunity
K.53- **Discuss**. Cell mediated immunity
K.54- **Discuss**. humoral immunity

Respiration

K.55- **Identify** structure of respiratory system.
K.56- **Discuss** non-respiratory function of respiratory system.
K.57- **Describe** respiratory mechanics.
K.58- **Discuss** respiratory pressures.
K.59- **Identify** pneumothorax.
K.60- **Explain** lung surfactant.
K.61- **Discuss** lung compliance.
K.62- **Define** bronchial tone and innervation of bronchi.
K.63- **Discuss** work of breathing.
K.64- **Define** pulmonary circulation.
K.65- **Define** pulmonary volume and capacity.
K.66- **Discuss** pulmonary function tests.
K.67- **Define** dead space.
K.68- **Discuss** diffusion of gases.
K.69- **Discuss** oxygen transport by blood.
K.70- **Discuss** CO2 transport by blood.
K.71- **Discuss** Alkali reserve.
K.72- **Discuss** control of respiration.
K.73- **Discuss** Chemical regulation of respiration.
K.74- **Discuss** Nervous regulation of respiration.
K.75- **Discuss** Effect of muscle exercise on breathing.
K.76- **Discuss** effect of deep sea diving.
K.77- **Discuss** artificial respiration.

ANS

K.78- **Classify** nervous system.
K.79- **Innumerate** functions of Autonomic nervous system.
K.80- **Discuss** Autonomic ganglia.
K.81- **Discuss** sympathetic nervous system.
K.82- **Discuss** parasympathetic nervous system.
K.83- **Discuss** chemical transmission.
K.84- **Discuss** acetyl choline and cholinergic receptors.
K.85- **Discuss** catecholamine and adrenergic receptors.
K.86- **Discuss** denervation hypersensitivity.
K.87- **Discuss** higher control of Autonomic nervous system

Biophysics

K.88- **Discuss** cell membrane structure.
K.89- **Explain** transport across cell membrane
K.90- **Discuss** Blood flow.
K.91- **Discuss** physics of Optics and sound.
K.92- **Discuss** Diffusion of gases.

Practical skills (P.S) :

P.S.01- Effect of autonomic drugs on the eye.
P.S.02- Effect of autonomic drugs on isolated intestine.
P.S.03- Effect of autonomic drugs on isolated rabbit heart.
P.S.04- How to collect blood sample.
P.S.05- Det. Of hematocrite value.
P.S.06- Det. Of hemoglobine content.
P.S.07- Det. Of red blood cell count.
P.S.08- Det. Of hematological indices.
P.S.09- Det. Of white blood cell count.
P.S.10- Det. Of osmotic fragility test.
P.S.11- Det. Of erythrocyte sedimentation rate.
P.S.12- Det. Of coagulation time.
P.S.13- Det. Of bleeding time.
P.S.14- Det. Of blood group.
P.S.15- Det. Of electromyogram.
P.S.16- Det. Of simple muscle twitch.
P.S.17- Examination Of heart sounds.
P.S.18- Interpretation of electrocardiogram.
P.S.19- Calculation and Interpretation of electrical axis of the heart.
P.S.20- Interpretation of arterial pulse curve.
P.S.21- Interpretation of jugular venous pulse curve.
P.S.22- Examination of arterial pulse.
P.S.23- Measurement of arterial blood pressure.
P.S.24- Det. Of respiratory volumes and capacity.

Intellectual skills (I.S) :

I.S.01- C.V.S examination.
I.S.02- Patterns of simple muscle twitch.
I.S.03- Parasympathomimetics and parathypatholytics.
I.S.04- Sympathomimetics and sympatholytics.
I.S.05- Pulmonary lung function tests.
I.S.06- Blood pressure measurements.
I.S.07- ECG.
I.S.08- Heamatological indices.
I.S.09- Blood grouping.

General & transferrable skills (G.S.) :

G.S.01 Self-learning
G.S.02 Research work
G.S.03 Communicate with the staff
G.S.04 Problem solving
G.S. 05: adopt suitable measures for infection control.

Integration with other departments (I):

Horizontal : with anatomy , biochemistry and histology

Vertical with:

1- internal medicine department for Vital signs examination (pulse , blood pressure)
2- pediatric department (hematology unite) for anemia

Attitudes (A) :

A.01 Respect to others.
A.02 Constructive feedback.
A.03 Behave as a physician.

III. COURSE CONTENTS:

TOPIC		No. of hours		Total hours
		Lectures	Practical / small groups	TOTAL
1	Biophysics	12		
2	A.N.S	22	6	
3	N+M	25	4	
4	CVS	55	20	
5	Blood	26	26	
6	Respiration	30	4	
TOTAL		170	60	**230**

IV. TEACHING AND LEARNING FACILITIES:

E.R.	No.	location
Human resources		
Staff members	**19**	Physiology department
Employers	**6**	Physiology department

Workers	**3**	Physiology department
Facilities		
Lecture hall	**1**	Physiology department
Small group class	**2**	Physiology department
Staff room	**7**	Physiology department
Lab	**2**	Physiology department
Library	**1**	Physiology department
Data show	**1**	Physiology department
Computer	**3**	Physiology department
Instrument	65	Physiology department

V.STUDENT ASSESSMENT:

V-A) ATTENDANCE CRITERIA:

- Check lists.
- Marks for activities.

V-B) ASSESSMENT TOOLS:

Tool	*Aim*	*Frequency*
Follow up	K,PS,IS,GS ,A	During course
Work book	K,PS,A	Practical course
Research	IS,GS,A	Two or three
Written Ex.	Knowledge	• Sections • Mid year • Final
Oral Ex.	K,IS,GS,A	Final
Practical Ex.	K,PS,A	Final

V-C) ASSESSMENT SCHEDULE:

	Exam.	Date
1	Mid-term	2/ 2010
2	Final	5-6/2010

V-D) FORMATIVE ASSESSMENTS:

Grading system

Tool	Marks	%
Small group activities	**15**	7.5
Research	**10**	2.5
Mid year Ex.	**25**	10
Final written Ex.	**125**	50
Final oral Ex.	**50**	20
Final practical Ex.	**25**	10
Total	**250**	**100**

V-E) EXAMINATION DESCRIPTION:

Examination	Description	Marks
Mid-year	One 20% Short account exam	50
Final	Written, oral, practical	200
TOTAL		**250**

VI. LEARNING AND REFERENCE MATERIALS:

VI-A) BASIC MATERIALS:

- Physiology book by staff members.
- Work book (practical) by staff members.
- Lecture notes.
- Gyton medical physiology (Text Book).
- Ganong medical physiology (Text Book).
- Renal Physiology.

VI-B) SUGGESTED MATERIALS:

- Self learning in library
- Browsing web sites of physiology.

Physiology Course Specifications for 2nd year

Course specifications

(Course title: Human medical physiology)

Course code: HP UG 02

(2nd) year of Undergraduate program

Academic year (2017/ 2018)

Allocated marks: 250

Course duration: 36 weeks

Total teaching hours: 210 hrs

Lectures: 150 hrs

Practical/small group sessions: 60 hrs

Course director: Head of Physiology Department Prof. Shreif Wagih Mansour

Course coordinator: Prof. Abeer A. Khalefa. , Ass.Prof. Mai M. H. Joifel.

Course management team:

Prof. Sherief Wageh Mansour. Prof. Ahmed Bahaa Eldein Abdallah, Prof. Prof. Ali Kh Asallah, prof Mohammed Abd Elhamed, Prof. Mohammed H Ibrahim, Prof. Salah I Zaglol, Prof. Azza A. Megahed, Prof. Abeer A,Khalefa, and Prof. Dalia I. Abdel Aleem,

Teaching staff:

Professors: **17** Assistant Prof.: 6

Lecturers: **15** Ass lecturers: **17** Demonstrators: **12**

I. GOALS OF THE COURSE:

By the end of this course the candidate will be able to:

1. Explain function of CNS, special sense organs, GIT, endocrinal & reproductive systems, normal metabolism and kidney functions.
2. Recognize applied physiology and deviations from normal.
3. Be trained to follow the medical ethics in the practical laboratory.
4. Develop appropriate communication with colleagues, patients and supervisors
5. Establish satisfactory practical skills that are related to physiology.
6. Realize and enhance the importance of appropriate attitudes and professionalism
7. Be prepared for continuous life long learning strategies and tools
8. Interpret some chemical laboratory data.

II. INTENDED LEARNING OUTCOMES:

By the end of the course the students should have:-

***Knowledge (K)*:**

C.N.S.

K.01- **Define** divisions of CNS

K.02- **Discuss** functional unit of CNS

K.03- **Identify** functions & properties of receptors

K.04- **Classify** receptors

K.05- **Describe** types of sensation

K.06- **Describe** properties of each sense
K.07- **Discuss** pathway of sensations
K.08- **Discuss** synaptic transmission in CNS
K.09- **Classify** reflexes
K.10- **Identify** properties of reflexes
K.11- **Describe** functions of reflexes
K.12- **Discuss** the motor outflow
K.13- **Compare** between descending tracts
K.14- **Identify** functional anatomy of cerebellum
K.15- **Discuss** functions of cerebellum
K.16- **Discuss** functions of Basal Ganglia.
K.17- **Discuss** functions of thalamus & hypothalamus
K.18- **Discuss** functions of limbic system
K.19- **Compare** types of sleep
K.20- **Explain** cortical areas & functions
K.21- **Describe** mechanisms of speech
K.22- **Describe** mechanisms of memory
K.23- **Enumerate** equilibrium reflexes
K.24- **Discuss** medical applications

Endocrine & Reproduction

For each hormone:
K.24- **Identify** site of release
K.25- **Define** chemical nature
K.26- **Describe** mechanism of action
K.27- **Discuss** metabolism
K.28- **Enumerate** functions
K.29- **Explain** regulation
K.30- **Compare** between hyper & hypo function
K.31- **Discuss** medical applications.

Digestive system

K.33- **Discuss** motor activities
K.34- **Discuss** secretory activities
K.35- **Discuss** digestive activities
K.37 **Discuss** absorptive activities
K.38- **Explain** nervous regulation of functions
K.39- **Explain** hormonal regulation of functions
K.40- **Describe** medical applications

Kidney

K.39- **Identify** functional histology
K.40- **Explain** regulation of R.B.F.
K.41- **Explain** regulation of G.F.R.
K.42- **Discuss** homeostasis of sodium
K.43- **Discuss** homeostasis of potassium
K.44- **Discuss** homeostasis of calcium
K.45- **Discuss** homeostasis of organic substances
K.46- **Discuss** homeostasis of water
K.47- **Discuss** homeostasis of hydrogen ions
K.48- **Compare** acidosis & alkalosis
K.49- **Define** micturition reflexes
K.50- **Enumerate** renal function tests
K.51- **Compare** acute and chronic renal failure.

Special senses

For each sense :
K.52- **Discuss** physics
K.53- **Describe** functional histology
K.54- **Enumerate** functions

K.55- **Identify** mechanisms & adjustments
K.56- **Discuss** medical applications
K.57- **Describe** pathway

Metabolism

K.59- **Define** M.R. and B.M.R.
K.60- **Enumerate** factors affecting B.M.R.
K.61- **Define** S.D.A.
K.62- **Enumerate** factors affecting S.D.A.
K.63- **Define** R.Q.
K.64- **Enumerate** factors affecting R.Q.
K.65- **Discuss** regulation of weight
K.66- **Discuss** regulation of temperature
K.66- **Describe** medical applications (obesity)

Practical skills (P.S):

P.S.01- Examination of dermatomes
P.S.02- Examination of pain
P.S.03- Examination of touch
P.S.04- Examination of temperature
P.S.05- Examination of superficial reflexes
P.S.06- Examination of deep reflexes
P.S.07- Examination of gait and tremors.
P.S.08-- Examination of cranial nerves.
P.S.09- Interpretation of renal function tests
P.S. 10- Interpretation of liver function tests
P.S.11 - Examination of corneal reflex
P.S.12- Examination of pupillary reflexes
P.S.13- Examination of visual acuity
P.S.14- Examination of color vision
P.S.15- Examination of hearing
P.S.16- Interpretation of audiogram.
P.S.17- Examination of smell
P.S.18- Examination of taste
P.S.19- Examination of body temperature

Intellectual skills (I.S) :

I.S.01- C.N.S examination
I.S.02- Patterns of sensory loss
I.S.03- UMNL&LMNL
I.S.04- E.E.G.
I.S.05- General examination for nervous system
I.S.06- General examination for endocrine system

General skills (G.S.) :

G.S.01 Self-learning
G.S.02 Research work
G.S.03 Communicate with the staff
G.S.04- Problem solving
G.S. 05- adopt suitable measures for infection control.

Integration with other departments (I):

Horizontal: with anatomy, biochemistry and histology
Vertical with:
1- Internal medicine department for: Endocrinal disorders: (Cushing, Addison, DM……)

2- Neurological disorders
(Parkinsonism, chorea…….)

Attitudes (A) :

A.01 Respect to others.
A.02 Constructive feedback.
A.03 Behave as a physician.

III. COURSE CONTENTS:

	TOPIC	No. of hours		% Total hours
		Lectures	Practical/ small groups	TOTAL
1	CNS	55	24	
2	Special senses	23	20	
3	Endocrine	37	8	
4	Kidney	20	4	
5	Digestive	20	2	
6	Metabolism	10	4	
TOTAL		**165**	60	**225**

IV. TEACHING AND LEARNING FACILITIES:

E.R.	No.	location
Human resources		
Staff members	**19**	Physiology department
Employers	**6**	Physiology department
Workers	**3**	Physiology department
Facilities		
Lecture hall	**1**	Physiology department
Small group class	**2**	Physiology department
Staff room	**7**	Physiology department
Lab	**2**	Physiology department
Library	**1**	Physiology department
Data show	**1**	Physiology department
Computer	**3**	Physiology department
Instrument	65	Physiology department

V. TEACHING & LEARNING METHODS:

TOOL	PURPOSE (I L O)
Lectures	Theoretical knowledge
Practical sections	Practical skills
Researches	Application and enhancement of studied data

V-STUDENT ASSESSMENT:

V-A) ATTENDANCE CRITERIA:

- Check lists.
- Marks for activities.

V-B) ASSESSMENT TOOLS:

Tool	*Aim*	*Frequency*
Follow up	K,PS,IS, GS,A	During course
Work book	K,PS,A	Practical course
Research	IS,GS,A	Two or three
Written Ex.	Knowled ge	• Sections • Mid year • Final
Oral Ex.	K,IS,GS, A	Final
Practical Ex.	K,PS,A	Final

V-C) ASSESSMENT SCHEDULE:

	Exam.	Date
1	Mid-term	2/ 2010
2	Final	5-6/2010

V-D) FORMATIVE ASSESSMENTS:

Grading system

Tool	*Marks*	*%*
Small group activities	**15**	7.5
Research	**10**	2.5
Mid year Ex.	**25**	10
Final written Ex.	**125**	50
Final oral Ex.	**50**	20
Final practical Ex.	**25**	10
Total	**250**	**100**

V-E) EXAMINATION DESCRIPTION:

Examination	Description	Marks
Mid-year	**2 exams activities**	**50**
Final	**Written oral practical**	**200**
Total		**250**

VI. LEARNING AND REFERENCE MATERIALS:

VI-A) BASIC MATERIALS:

- Physiology book by staff members.
- Work book (practical) by staff members.
- Lecture notes.
- Gyton medical physiology (Text Book).
- Ganong medical physiology (Text Book).
- Renal Physiology.

VI-B) SUGGESTED MATERIALS:

- Self learning in library
- Browsing web sites of physiology

Physiology for Postgraduate studies
DEGREE: Master in Medical Physiology (MSc)
Programme Specification
2017/2018

A-Basic Information

1- Programme Title: Master in Medical Physiology (MSc).

2- Final Award: □ Master degree (MSc) in Medical Physiology.

3- Programme type: Single [√] Double [ ] Multiple [ ]

4-Responsible Department: Medical Physiology Department.

5- Programme duration: 2 academic years

6- Number of Programme Courses: 3courses (Phys 1, Phys 2 and Phys 3).

7-Coordinator: Prof/ Abeer A Khalefa

8-External evaluators: **Prof .Dr/** Yasir Elwasir

9-Last date of programme specifications approval: 21/11/2011

10- Programme management team:

Prof. Sherief Wageh Mansour
Prof/ Ahmed Baha Aldin Abdalla
Prof/ Ali Kh Assalah
Prof/ Abeer A. Khalefa
Prof/ Dalia I AbdAlaleem.

B-Professional Information:

1-Programme aims:

The aim of this programme is to build the competencies of the candidate to undertake comprehensive up-to-date practices of medical physiology in a professional manner to apply basics and strategies of scientific research and to gain the aquired awareness with recent advances in Physiology and its applications .

2- Intended Learning Outcomes (ILOs):

By the end of the Master programme in Medical Physiology the candidate will be able to:

A- Knowledge and Understanding

KU1. Describe functional organization& structure of various body systems and its relation to function.

KU2. Point out general & specific functions of the body systems.

KU3. Discuss mechanisms aiming at maintenance of homeostatic functions, which are pH, osmolarity, body temperature, blood glucose levels, calcium levels, blood gases, body weight and growth.

KU4. Describe the pathophysiological aspects underlying the development of common diseases.

KU5. Discuss mechanisms of molecular physiology.

KU 6. Discuss advances in medical physiology.

KU 7. Explain ethics and legal implication for the professional practices in physiology.

KU 8. Describe the principles and basis of quality in the professional practices of physiology.

KU 9. Explain the basics and ethics of scientific research.

B: Intellectual Skills

IS1. Integrate facts about function of different organs subserving the homeostasis.

IS2. Integrate facts about function of different chemical compounds inside the body .

IS 3. Analyze and evaluate the knowledge in Medical Physiology to solve medical problems.

IS 4. Solve special problems in medical physiology with unavailability of some inputs.

IS 5. Join different types of knowledge to solve the professional problems.

IS 6. Perform scientific research/ thesis about a scientific problem.

IS 7. Evaluate risks in the professional practices of Medical Physiology.

IS 8. Plan for development of performance in the field of medical Physiology.

IS 9. Take professional decisions in different situations.

C: Professional/practical skills

PS1 Work effectively in a group in biological science laboratories.

PS2 Deal with exprimental animal as: rats, mice, frogs, guinea pig and rabbits.

PS3 Use medical devices as spirometer and isolated organ bath.

PS4 Write & evaluate of professional reports (ECG & spirogram) and some laboratory tests (blood count, hemoglobin, pregnancy tests).

D- General &Transferable skills

GS1. Develop & make database search in the library & internet.

GS2. Discuss freely about most of medical problem.

GS3. Use information and communication technology effectively.

GS4. Solve problems related to work management and among colleagues.

GS5. Practise the different types of effective communication.

GS6. Evaluate him/herself and assess the personal educational needs.

GS7. Use different resources to gain knowledge and information.

GS8. Develop rules and indicators to evaluate the performance of others.

GS9. Work in a team and lead teams in different professional situation.

GS10. Manage the time effectively.

GS11. Learn by self and in a continuous manner.

3. Academic standards:

3a. Generic academic Standards of Postgraduate Programmes prepared by National Authority of Quality Assurance and Accreditation of Education (NAQAAE).

المعايير القياسية العامة لبرامج الدراسات العليا التي أعدتها الهيئة القومية لضمان جودة التعليم والاعتماد (2009) فبراير

3b. External reference (Benchmarks) (attached): Master degree in Medical Physiology Programme of Michigan State University

3c. Matrices:

i- Comparison between the ILOs of the Faculty of Medicine Zagazig university Master (MSc) in Medical Physiology programme and that of the Generic Academic standards of postgraduate programmes prepared by National Authority of Quality Assurance and Accreditation of Education.

Generic academic standards of master programme المعايير الأكاديمية العامة لبرامج الدراسات العليا (برامج الماجستير)	ILOs of the MSc in medical physiology programme Faculty of medicine Zagazig University	Remarks
1- المعرفة و الفهم أ- النظريات و الأساسيات المتعلقة بمجال التعلم و كذا في المجالات ذات العلاقة ب- التأثير المتبادل بين الممارسات المهنية و انعكاسها ت- التطورات العلمية في مجال التخصص. ث- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص. ج- مبادئ و أساسيات الجودة في	KU1, KU2 KU3, KU4 KU5, KU6 KU7 KU8 KU9	100 % is fulfilled

		الممارسات المهنية في مجال التخصص. ح- أساسيات و أخلاقيات البحث العلمي
100% is fulfilled	IS1, IS2 IS3, IS4 IS5 IS6 IS6 IS8 IS9	**المهارات الذهنية** أ- تحليل و تقييم المعلومات في مجال التخصص و القياس عليها لحل المشاكل. ب- حل المشاكل المتخصصة مع عدم توافر بعض المعطيات ت- الربط بين المعارف المختلفة لحل المشاكل المهنية. ث- اجراء دراسة بحثية\ أو كتابة دراسة علمية منهجية لحل مشكلة بحثية. ج- تقييم المخاطر في الممارسات المهنية في مجال التخصص. ح- التخطيط لتطوير الأداء في مجال التخصص. خ- أتخاذ القرارات المهنية في سياقات

		خ -إدارة الوقت بكفاءة. د -التعلم الذاتي و المستمر.

ii- Comparison between the ILOs of the Master (MSc) Programme in Medical Physiology Faculty of medicine, Zagazig University and Master of Medical Physiology Programme of Michigan State University.

Master of Medical Physiology Programme, Michigan State University.	ILOs in master of Master Medical Physiology programme Faculty of medicine, Zagazig University	Approximate achievable ILOs
1- Physiology/ Pharmacology of Excitable	KU1, KU2 KU5	80 %

مهنية متنوعة.		
المهارات المهنية أ -اتقان المهارات المهنية الأساسية و الحديثة في مجال التخصص. ب -كتابة و تقييم التقارير المهنية. ت -تقييم الطرق و الأدوات القائمة في مجال التخصص	PS1 PS4 PS3	100% is fulfilled
المهارات العامة و المتنقلة أ -التواصل الفعال بأنواعه المختلفة ب -استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية. ت -التقييم الذاتي و تحديد احتياجاته التعليمية الشخصية. ث -استخدام المصادر المختلفة للحصول علي احتياجاته التعليمية الشخصية. ج -و ضع قواعد و مؤشرات تقييم أداء الأخرين. ح -العمل في فريق و قيادة فرق في سياقات مهنية مختلفة.	GS5 GS3 GS6 GS7 GS8 GS9 GS10 GS1, GS11	100% is fulfilled

Cells (nerve and muscle) (PSL) 827		
2-Molecular Biology and Protein Structure (BMB) 801	KU2, KU5	50%
3-Metabolic Regulation and Molecular Endocrinology (BMB) 802	KU1, KU3,KU4,KU5, IS2, PS4	100%
4- Cellular/Integrative Physiology (PSL) 828	KU5,KU6, IS2, GS2	75%
5-Cell and Molecular Physiology (PSL) 910	KU5, Ku6	100%
6-Topics in physiology (PSL) 950	KU1, KU2, KU3, K U4 PS2, PS3, IS1, IS2	100%
7- Master's Thesis Research (PSL) 899 in which there is simple methods of searching within simple item in physiology to catch the ability of preparing a scientific paper.	KU6, KU7,KU8, KU9 IS3, IS4, IS5, IS6, IS7 PS1,Ps2, PS3 GS1, GS3, GS4, GS5, GS10, GS11.	100% Thesis in a new area of Medical Physiology within the scientific research plan of the Department and Faculty

* NB: **Michigan State University Programme of Master degree in Medical Physiology is coded in topics not ILOs.**

4- Programme structure:

Course	units	Teaching hours	weeks	Academic year
Phys 1	1-6	135	38	1st academic year
Phys 2	7-12	143	18	2nd academic year
Phys 3	13	108	18	2nd academic year
Total		**386**	**74**	

5. Programme courses

Code No.	Units	Title	No of hours			No of weeks
			T & s	P	T	
Ph	1	Cell	6		6	1 weeks
	2	Nerve and muscle.	10	10	20	4 weeks
	3	cardiovascular system.	**30**	25	55	10 weeks
	4	Blood	15	15	30	6 weeks
	5	Autonomic nervous system	**8**	**15**	23	4 weeks
	Summer activity				8	
Ph	6	Respiratory system	**15**		15	4 weeks
	7	Body fluids and renal physiology	**11**	**5**	16	2 weeks
	8	Central nervous system	**26**	**10**	36	5 weeks
	9	special senses	**11**		11	2 weeks
	10	Gastrointestinal tract	**12**	**20**	32	5 weeks
	11	Endocrinology and Reproduction	**21**	**10**	31	4 weeks
	12	Metabolism	**6**		6	1 weeks
Ph	13	Research in Medical Physiology			108	18 weeks
To					**74**	**386**

6- Comparison between the ILOS of the Master (MSc) programme in

Medical Physiology and its courses (Phys 1, 2 and 3).

Items	Program e of MSc in Medical Physiolo gy	Physi ology 1	Physi ology 2	Physiol ogy 3
Knowl edge and Under standi ng	KU1 to KU3	KU4, 10 to14, 18,19	KU1, 3,10-12,16-19	--
	KU4,KU 5	KU2, 3,6,1 5,27	KU11 ,18,2 3	--
	KU6,KU 7	KU2, 7, 20	KU2, 5, 13,14	KU1, KU2
	KU8, KU9	---	KU24	KU3
Intelle ctual Skills	IS1-IS3	IS1, IS2	IS1, IS2, IS3	IS1, IS2
	IS4,IS5, IS7,IS 8	IS3-IS5	IS4-IS6	IS3-IS5
	IS6, IS 9	--	--	IS5, IS6
Profes sional/ practi cal skills	PS1, PS2	PS1, PS2 PS3	PS1, PS2	PS1, PS2
	PS3, PS4	PS4, PS5	PS3	PS3, PS4
Gener al &Tra nsfera ble skills	GS1,GS2 , GS3	GS1, GS2	--	GS1, GS2
	GS4, GS5, GS6	GS4 GS5	--	GS3
	GS7, GS8	GS5, GS6	--	GS4, GS5
	GS9, GS10,	GS3, GS4,	--	GS6, GS7,
		Gs11	GS6		GS8

7- Programme admission requirements

Obtain Bachelor Degree in Medicine and Surgery. (M.B.B.Ch)

8- Regulations for progression and programme completion

At the end of 1st Academic Year (Phys 1)

* Fulfillment of the of log book (Attendance, effective discussion in seminars, performance in practical lab and summer activity).
* Pass Examination of the course Phys 1

2nd Academic Year (Phys2 & Phys 3):

Prerequistite: - Summer activity is a prerequisite for registration for Physiology 3 (Phys 3).
- Pass Examination of the course Phys 1

* Registration of the thesis protocol.
* Perform the master thesis in new area of Medical Physiology (phys 3): fulfillment of the supervisors report every 3 months.
* perform a seminar about the thesis results.

* Acceptance of the Master thesis from judgment committee nominated by department council after public discussion.
* Pass examination of course phys 2.

9- Evaluation of programme intended learning outcomes

Evaluator		Tool	Sample
1- Exams results		Results analysis Report	All the students
2- Students		Question naires	All the students
3-Graduates after achieving MSc degree		Question naires – group discussio n	10 at least
4-Stakeholders	*- teaching staff. *- Technici ans. *- Regional medical institutes *- Internatio nal medical institutes. *- other Govern mental facultie s *- Non governm ental faculties	Intervie ws Internet contact Phone calls Question naires	10 at least
5-External		Question naires	
6-Others(If Present)			

10- References:

2- Essential Books:

-Fox SI (2003): Human physiology , McGraw-Hill, USA.

-Gyton AC and Hall JE (2009) : medical physiology . Saunders, Philadelphia, USA.

-Barrett K E., Barman S M., Boitano S, Brooks H L. (2010): Review of medical physiology. 23rd edition , McGraw-Hill Companies, USA.

- Refinetti, R. (2006): Circadian Physiology ***2nd Edition*** Taylor & Francis, London New York

VII-B) SUGGESTED MATERIALS:

-Browsing web sites of physiology: **www.Zu.edu.eg**, Entrez pubmed

-Medical journals.: Am J physiology, Br J physiology, Experimental pharmacology

11- Supports for Candidates and their Learning:

Candidates and their learning are supported in a number of ways:

- ✓ Printed copies of the programme and Physiology courses (Candidates aware of the ILOs and requirement of the Master degree in Medical Physiology.
- ✓ Availability of University central liberary.
- ✓ Availability of the Faculty postgraduate library
- ✓ Availability of the Department Postgraduate library.
- ✓ Availability of the faculty digital liberary.
- ✓ Availability of the other educational resources included in every course.
- ✓ Supervisors of the Master thesis (three Staff members according to the research specialty for each candidate)
- ✓ Websites available in the department.

12- Methods used for improving the programme:

- ✓ Peer teaching observations and feedback to the programme management team and the coordinator (written reports at the end of the courses).
- ✓ Faculty appointed external examiners.
- ✓ Candidates evaluation of teaching (Questionnaires).
- ✓ Contact with **Michigan State University asking for their support.**

13- Committee with responsibility for monitoring and evaluating quality:

- ✓ Internal Evaluators:
  1- Prof. Dr. Ahmed B A Abdallah (Head of Medical Physiology Department).
  2- Member from Quality unit in the faculty.

- ✓ External Evaluator :
  Prof. Dr. Yasser Elwasir : Faculty of Medicine – Suez canal University

14- Regulations of assessment by-laws of the master (MSc) degree postgraduate of the faculty of medicine:

Phys 1

1- Attendance of at least 75% of the teaching courses.
2- Log book fulfilled and approved by the head of the department.

Tools		**Mark**	**Percentage of the total mark**
	Written exam	100	40%
	Oral exam	75	30%
	Practical exam	75	30%
	Total marks	250	

Phys 2

1- Pass the exam of course Physiology 1 (at least 60% of total Mark).
2- Attendance of at least 75% of the teaching courses.
3- Log book fulfilled and approved by the head of the department.

Tools		Mark	Percentage of the total mark
	Written exam	300	40%
	Oral exam	200	30%
	Practical exam	250	30%
	Total marks	750	

NB: Examinations are conducted twice yearly.

Phys 3

*- Preregistration seminar
*- Registration of the thesis title.
*- Perform the thesis within at least 6 months of registration.
*- After finishing the Master thesis Candidate perform a seminar about the thesis results.
*- Three progression reports are introduced by each supervisor (one every 3 months).
*- Master thesis acceptance by the supervisors.
*- Master thesis acceptance by the judgment committee in an advertised public session by three professors including one of the supervisors, one from the faculty and third from other faculty.
*- Four copies of the thesis must be given to the postgraduate library.

14- Rules for awarding the Master Degree in Medical Physiology:

* Candidates must pass the final exam of course Phys 1 as a prerequest to registrate the master thesis and course Phys 2.
* Master thesis must be accepted by the judgment committee before attend the final exam of Phys 2.
* Candidates must pass the final exam of course Phys 2 (at least 60%).

2- M.D. :

DEGREE: Doctorate (MD) in Medical Physiology

Programme Specification

2017/2018

A-Basic Information

1- Programme Title:

Doctorate (MD) in Medical Physiology.

2- Final Award: □ MD degree in Medical Physiology.

3- Programme type: Single ☐

Double ☑ Multiple ☐

4-Responsible Departments:

1-Medical physiology department.

2-Public health department.

5- programme duration: 3 academic years

6- Number Programme courses**:**

4courses

{Pre-requisite courses in:1-statistics & methodology for MD students (Statistics), 2-Computer and internet application in medicine (Computer), Physiology 4 (Phys 4), and Physiology 5 (Phys 5)}

7-Coordinator: Prof/ Dalia I. AbdAlAleem. , Ass.Prof. Mai M. H. Joifel.

8-**External evaluators**: Prof .Dr/ Yasir Elwasir

9-**Last date of programme specifications approval**: 21/11/2011

10- **Programme management team**:

Prof. Sherief Wageh Mansour

Prof/ Ahmed Baha Aldin Abdalla

Prof/ Mohammed A Elghanam

Prof/ Akmal Ahmed Diab

Prof/ Abeer A. Khalefa

Prof/ Dalia I AbdAlaleem.

B-Professional Information:

1-Programme aims:

The aim of this programme is to build the competencies of the candidate to point out specific and detailed functions of the body systems, disscuss mechanisms responsible for homeostatic functions and the pathophysiological aspects underlying the development of some medical syndroms. In addition, the candidate will have a wide vision about development of new methods and tools to analyze and criticize any research scientifically , and to use different technological methods which add to his/her Professional applications.

2- Intended Learning Outcomes (ILOs):

By the end of the MD programme in Medical Physiology the candidate will be able to:

A- Knowledge and Understanding

KU1. Describe new concepts in functional organization of various body systems .

KU2. Explain detailed and specific functions of the body systems.

KU3. Associate mechanisms aiming at maintenance of homeostatic functions .

KU4. Clarify the recent trends in pathophysiological aspects underlying the development of common diseases.

KU5. Discuss mechanisms of molecular physiology.

KU 6. Apply ethics and legal implication for the professional practices in physiology.

KU 7. Demonstrate the principles and basis of quality in the professional practices of physiology.

KU 8. Apply the basics and ethics of scientific research.

KU 9. Realize the effects of his professional practices on the environment and ways of the development and maintenance of the environment

B: Intellectual Skills

IS 1. Analyze and evaluate the knowledge in Medical Physiology to solve medical problems.

IS 4. Solve special problems in medical physiology according to available inputs.

IS 5. Join different types of knowledge to solve the professional problems.

IS 6. Perform scientific research/ thesis about a scientific problem.

IS 7. Write scientific papers.

IS 8. Evaluate risks in the professional practices of Medical Physiology.

IS 9. Plan for development of performance in the field of medical Physiology.

IS 10. Take professional decisions in different situations.

IS 11. Innovate and create.

IS 12. Perform evidence based conversation and disscussion.

C- Professional/practical skills

PS1 Work effectively in a group in biological science laboratories.

PS2 Deal with exprimental animal as: Rats, mice, Frogs, guinea pig and Rabbits.

PS4 Write & evaluate professional reports (electroencephalogram(EEG) & spirogram) and some laboratory tests (hormonal assay, pregnancy test).

PS5 Use technology to serve the professional practices.

PS6 Plan for development of the professional practices and performance of others.

Ps7 Evaluate and improve tools in his/her specialty**.**

D- General &Transferable skills

GS1. Develop & make database search in the library & internet.

GS2. Discuss freely about some medical problem.

GS3. Learn and evaluate others.

GS4 . Use information and communication technology effectively.

GS5. Solve problems related to work management and among colleagues.

GS6. Practice the different types of effective communication.

GS7. Evaluate him/herself and assess the personal educational needs.

GS8. Use different resources to gain knowledge and information.

GS9. Develop rules and indicators to evaluate the performance of others.

GS10. Work in a team and lead teams in different professional situation.

GS11. Manage seminars in addition to the effective time management.

GS 12. Learn by self and in a continuous manner.

3. Academic standards:

3a. Generic standards of postgraduate programmes prepared by National Authority of Quality Assurance and Accreditation of Education (NAQAAE).

المعاييرالقياسية العامة لبرامج الدراسات العليا التي أعدتها الهيئة القومية لضمان جودة التعليم والاعتماد (2009) فبراير

3b. External reference (Benchmark)

(attached): Doctoate (MD) degree

in Medical Physiology Programme of Michigan State University

3c. Matrices:

1- Comparison between the intended learning outcomes (ILOs) of the Faculty of Medicine Zagazig university MD in Medical Physiology programme and that of the Generic Academic standards of postgraduate programme prepared by National Authority of Quality Assurance and Accreditation of Education.

Generic Academic standards of MD programme المعايير العامة لبرامج الدراسات العليا(برامج الدكتوراة)	Comparable ILOs in the MD in Medical Physiology programme	Remarks
1- المعرفة و الفهم أ- النظريات و الأساسيات والحديث من المعارف فى مجال التخصص وكذا في المجالات ذات العلاقة ب- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص. ت- مبادئ و أساسيات الجودة في الممارسات المهنية في مجال التخصص. ث- أساسيات و أخلاقيات البحث العلمي وأدواته المختلفة ج- المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها	KU1 to KU10	100 % is fulfilled
المهارات الذهنية أ- تحليل و تقييم المعلومات في مجال التخصص والقياس عليها والإسباط منها. ب- حل المشاكل المتخصصة استنادا على المعطيات المتاحة ت- الربط بين المعارف المختلفة لحل	IS1- IS12	100% is fulfilled

		آداء الآخرين.
100% is fulfilled	GS1 to GS12	**المهارات العامة و المتنقلة** أ -التواصل الفعال بأنواعه المختلفة ب -استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية. ت -التقييم الذاتي والمستمر ث -استخدام المصادر المختلفة للحصول علي المعلومات والمعارف. ج -تعلييم الآخرين وتقييم آداءهم. ح -العمل في فريق و قيادة فرق في سياقات مهنية مختلفة. خ -إدارة اللقاءات العلمية والوقت بكفاءة. د -التعلم الذاتي و المستمر.

		المشاكل المهنية. ث- اجراء دراسة بحثية تضف إلى المعارف. ج- تقييم المخاطر في الممارسات المهنية في مجال التخصص. ح- التخطيط لتطوير الأداء في مجال التخصص. خ- أتخاذ القرارات المهنية في سياقات مهنية متنوعة. د- صياغة أوراق علمية ذ- الإبتكار والإبداع. ر- الحوار والنقاش المبنى على البراهين والأدلة.
100% is fulfilled	PS1 to PS6	**المهارات المهنية** أ -اتقان المهارات المهنية الأساسية و الحديثة في مجال التخصص. ب -كتابة و تقييم التقارير المهنية. ت -تقييم وتطوير الطرق والأدوات القائمة في مجال التخصص ج-إستخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية. ح- التخطيط لتطور الممارسة المهنية وتنمية

2- Comparison between the ILOs of the MD programme in Medical Physiology, Faculty of medicine-Zagazig university and Medical Physiology MD Programme of Michigan State University.

MD of Medical Physiology Programme of Michigan State University.	ILOs in MD of Medical Physiology programme Faculty of medicine, Zagazig University	Approximate achievable ILOs
1- Physiology/Pharmacology of Excitable Cells (nerve and muscle) (PSL) 827	KU1, KU2, KU5, PS1, PS2.	90 % is fulfilled
2-Molecular Biology and Protein Structure (BMB) 801	KU4, KU5, KU6	70% is fulfilled
3-Metabolic Regulation and Molecular Endocrinology (BMB) 802	KU1, KU3,KU4,KU5, IS2, IS3,IS4,PS1,PS2,PS5	100% is fulfilled
4- Cellular/Integrative Physiology (PSL) 828	KU1, KU2,KU3,KU4, IS2, IS3, GS8	100% is fulfilled
5-Cell and Molecular Physiology (PSL) 910	KU5, Ku6	90% is fulfilled
6-Topics in physiology (PSL) 950	From KU1 to KU6, PS1, PS4,PS5	100% is fulfilled
7- MD Thesis Research (PSL) 899	From KU4 to KU9, From IS3 to IS12, From PS1 to PS7, GS2 to GS4, from GS5 to GS8, GS11,GS12.	100% is fulfilled Thesis in new area in Medical Physiology in line with the department

		and faculty scientific research plan

NB: **Michigan State University Programme of MD degree in Medical Physiology is coded in topics not ILOs.**

3- Comparison between the ILOs of the MD programme in Medical Physiology and that of the 4 courses (Computer, Statistics, Phys 4, and Phys 5).

Programme of MD in Medical Physiology	**Phys 4**	**Phys 5**	**Computer**	**Statistics**
KU1			KU 1	
KU2				KU3
From KU 1 to KU 2	KU1, from KU3 to KU7,KU 10, KU13-KU16,KU20-KU37,KU39-KU45.			
KU3	KU11,KU12,KU 17,KU18 ,KU37.			
KU4	KU8,KU 9,KU13, KU23,KU36,KU 38,KU43 .			
KU5	KU2,5,14,26,27			
KU6	KU11,23 ,38.			
From KU 4 to KU 9	---	From KU1 to KU6		
IS1 toIS 3			IS3	IS1,IS3 IS2
IS1 to IS3	IS1-IS7			
IS3 to12	--	IS1to IS10		
PS1, PS2			PS2	PS1
PS1 to PS3	PS1 to PS11, PS13,15			

PS1 to PS7		PS1 to PS9		
PS4	PS12, 13,14			PS3
GS1, GS2	GS5,6		GS 1	
GS2,3, 4, GS5,8, 11,1 2		GS1 to GS6		
GS4, GS5	GS4 GS5,6			
GS 6	GS1,2,6			
GS7, GS8	GS4		GS 2	
GS9	GS8			
GS10, Gs11 GS12	GS7 GS5 GS3			GS1

4- Programme structure:

Course	units	Teaching hours	weeks	Academic year
Computer	11	48	24	1st academic year
Statistics	9	24	12	1st academic year
Phys 4	16	180	36	2nd academic year
Phys 5	Thesis	216 (supervision)	36	3rd academic year
Total		**468**	**108**	

5- programme courses

Code No.	Units	Title	No of hours T & s	P	T	No of weeks
Ph	1	How to locate the proper source for health and medical information	3	1	4	2
	2	How to decode URLs and identify file types	2	1	3	2
	3	How to formulate an effective search statements	3	2	5	2
	4	How to evaluate the internet information	3	2	5	2
	5	Citing internet documents and avoiding plagiarism	3	2	5	2
	Web 2.0 and social / collaborative internet tools		3	2	5	2
Ph	7	Using of Internet tools in Evidence-Based Medicine	3	2	5	4
	8	Health on the net code of ethics	2		2	2

	9	Using of Free online Journal Databases	2	2	4	2
	10	Scope , uses, application of Pub-Med Medline database	3	2	5	2
	11	Medical Wiki, Blogs, groups, multimedia , and Health 2.0 tools	3	2	5	2
	1	Introduction to medical statistics	2	1	1	2
	2	Types of research methodology	4	2	2	2
Ph	3	Population sampling	2	1	1	1
To	4	Types of data, presentation	4	2	2	1

6- Programme admission requirements

Master degree in physiology
(Candidates must pass the final exam of course Phys 2 with at least 65%)

7- Regulations for progression and programme completion

At the end of 1st Academic Year

***-** fulfillment of the of log book.

*- Pass examinations in the computer and statistics courses.

2nd Academic Year

*- Perform the MD thesis in new area of Medical Physiology (phys 5): fulfillment of the supervisors report every 3 months.

*- perform a seminar about the thesis results.

*- Acceptance of the MD thesis from judgment committee nominated by department council.

3rd Academic Year

***-** fulfillment of the of log book.

*- Pass examination in the course phys 4.

8- Evaluation of programme intended learning outcomes

Evaluator	Tool	Sample
1- Exams results	Results analysis Report	All the students
2- Students	Questionnaires	All the students
3-Graduates after achieving MSc degree	Questionnaires – group	10 at least

		discussion	
4-Stakeholders	*- teaching staff. *- Technicians. *- Regional medical institutes *- International medical institutes. *- other Governmental faculties *- Non governmental faculties	Interviews Internet contact Phone calls Questionnaires	10 at least
5-External Evaluator		Questionnaires	
6-Others(If Present)			

References :

2- Essential Books:

-Fox SI (2003): Human physiology , McGraw-Hill, USA.

-**Gyton AC and Hall JE (2009)** : medical physiology . Saunders, Philadelphia, USA.

- **Barrett K E., Barman S M., Boitano S, Brooks H L. (2010):** Review of medical physiology. 23rd edition , McGraw-Hill Companies, USA.

- Refinetti R. (2006): Circadian Physiology ***(2nd Edition),*** Taylor & Francis, New York**,** USA.

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VII-B) SUGGESTED MATERIALS:

-Browsing web sites of physiology: **www.Zu.edu.eg**, Entrez pubmed, Science direct, Springer.

-Medical journals.: Am J physiology, Br J physiology, Experimental pharmacology J,J Am Sience, Lancet, Gut.

Supports for Candidates and their Learning:

Candidates and their learning are supported in a number of ways:

- ✓ Printed copies of the programme and Physiology courses (Candidates aware of the ILOs and requirement of the MD degree in Medical Physiology.
- ✓ Availability of University central liberary.
- ✓ Availability of the Faculty postgraduate library
- ✓ Availability of the Department Postgraduate library.
- ✓ Availability of the faculty digital library.

- ✓ Availability of the other educational resources included in every course.
- ✓ MD thesis Supervisors (three Staff members according to the research specialty for each candidate).
- ✓ Websites available in the department.

Methods used for improving the programme:

- ✓ Peer teaching observations and feedback to the programme management team and the coordinator (written reports at the end of the courses).
- ✓ Faculty appointed external examiners.
- ✓ Candidates evaluation of teaching (Questionnaires).
- ✓ Contact with **Michigan State University asking for their support**

Committee with responsibility for monitoring and evaluating quality:

- ✓ Internal Evaluators:
  Prof. Prof/ Ahmed Baha Aldin Abdalla
  Member from Quality unit in the faculty.

- ✓ External Evaluator :
  Prof. Dr. Yasser Elwasir : Faculty of Medicine – Suez canal University

Regulations of assessment by-laws of the MD degree postgraduate of the faculty of medicine:

Cmputer course

1- Attendance of at least 75% of the teaching courses.
2- Log book fulfilled and approved by the head of the department.

Tools		Mark	Percentage of the total mark
	Written exam	80	80%
	Oral and Practi	20	20 %
	Total marks	100	

Statistics course

1- Attendance of at least 75% of the teaching courses.
2- Log book fulfilled and approved by the head of the department.

Tools		Mark	Percentage of the total mark
	Written	100	100%
	Total m	100	

Phys 1

1- Pass the exam of the computer and statistics courses (at least 60% of total Mark).
2- Attendance of at least 75% of the teaching courses.
3- Log book fulfilled and approved by the head of the department.

Tools		Mark	Percentage of the total mark
	Written exa	100	33.3%
	Oral exam	100	33.3 %
	Practical ex	100	33.3%
	Total marks	300	

NB: Examinations are conducted twice yearly.

Hour	Code	Topics
3	Phys. 741	EEC, EEC and EMG record
3	Phys. 742	Record of contractility of isolated heart and different vascular bed
2	Phys. 743	Pulmonary function tests
2	Phys. 744	Record of G.I.T. motility

Phys 5

*- Preregistration seminar
*- Registration of the thesis title.
*- Perform the thesis within at least 24 months of registration.
*- After finishing the thesis Candidate perform a seminar about the thesis results.
*- progression reports are introduced by each supervisor (one every 3 months).
*- Master thesis acceptance by the supervisors.
*- MD thesis acceptance by the judgment committee in an advertised public session by three professors including one of the supervisors, one from the faculty and third from other faculty..
*- Four copies of the thesis must be given to the postgraduate library.

Rules for awarding the MD Degree in Medical Physiology:

* Candidates must pass the computer and statistics courses exams (at least 60%) as a prerequisite for the registration of Phys 4 course and MD thesis (Phys 5) .
* MD thesis must be accepted by the judgment committee before attendng the final exam of Phys 4.
* Candidates must pass the final exam of course Phys 4 (at least 60%).

3-*Postdoctoral Researches.*

4-Postgraduate physiology for other clinical departments:

Curriculum of Physiology for M.Sc Of Orthopedics

1. Heart rate and its regulation
2. Arterial blood pressure
3. Capillary and lymphatic circulation, oedema
4. Haemorrhage and shock
5. Haemostasis
6. Prevention of intravascular clotting
7. Anaemia
8. Blood groups and blood transfusion
9. Pain sensation and pain control
10. Muscle tone
11. Thermoregulation
12. Nerve and muscle
13. Calcium metabolism and bone physiology
14. Water, electrolyte and acid base balance
15. G.I.T motility
16. Growth
17. Regulation of respiration
18. Glucose homeostasis

Curriculum of Physiology for M. Sc Of General Surgery

1. The autonomic nervous system
2. Arterial blood pressure
3. Heart rate and its regulation
4. Capillary & lymphatic circulation and edema
5. Hemorrhage and shock
6. Blood coagulation and prevention of intravascular clotting
7. Blood groups and blood transfusion
8. Anaemias
9. Digestive system
10. Renal physiology, micturition, water, electrolyte and acid-base balances
11. Pain sensation and pain control system
12. Thermoregulation
13. Thyroid gland
14. Parathyroid gland
15. Suprarenal gland
16. Glucose homeostasis
17. Regulation of respiration

Curriculum of Physiology for M.Sc Of Cardiology

1. Autonomic nervous system
2. Circulation
3. Haemostasis
4. Prevention of intravascular clotting
5. Anaemias
6. Pulmonary function tests

7. Regulation of respiration
8. Disorders of respiration
9. Thermoregulation
10. Pain sensation, pain control
11. Water, electrolyte and acid-base balance
12. Glucose homeostasis
13. Thyroid, suprarenal and posterior pituitary glands.

Curriculum of Physiology for M.Sc Of Gynecology and Obstetrics

1. Heart rate and its regulation
2. Venous return, cardiac output, arterial blood pressure
3. Haemorrhage and shock
4. Haemostasis
5. Prevention of intravascular clotting
6. Blood groups, blood transfusion and its incompatibility
7. Anaemias
8. GIT motility
9. Vomiting
10. Male reproduction
11. Female reproduction
12. Pregnancy
13. Labour
14. Lactation
15. Feotal circulation
16. Pain sensation
17. Glucose homeostasis
18. Calcium homeostasis
19. Hayaline membrane disease
20. Regulation of respiration
21. Thermoregulation

Curriculum of Physiology for M.Sc Of skin and Venereal Diseases

1. Stucture and function of the skin
2. Skin pigmentation
3. Sweat glands types, functions and control of secretion
4. Cutaneous circulation
5. All cutaneous sensations
6. Neurological disorders with cutaneous manifestations
7. Odema
8. Hermaphroditism
9. Male reproduction
10. Immunity
11. Thermoregulationus .

Curriculum of Physiology for M.Sc Of Pediatrics

1. Gastrointestinal tract physiology Blood
2. Water, electrolyte and acid base balance and renal function tests
3. Endocrinology
4. Lactation
5. Thermoregulation
6. Respiration
7. Pain sensation and pain control

8. Reticular formation, sleep
9. CNS:
    - Reflexes
    - Lesions
    - Cerebellum
    - Basal ganglia
    - Thalamus and Hypothalamus
10. CVS:
    - Heart rate and its regulation
    - Cardiac cycle
    - Arterial blood pressure
    - Cardiac output
    - Heart Sounds
    - Foetal circulation

Curriculum of Physiology for M.Sc Of General Anesthesia

1. Respiration (control, diseases, O2 & CO2 transport)
2. Autonomic nervous system
3. Sensations
4. Reflexes, eye reflexes during anesthesia
5. Reticular formation and sleep
6. Heart rate and its regulation
7. Venous return, cardiac output and arterial blood pressure
8. Haemorhage and shock
9. Pulmonary circulation
10. Haemostasis
11. Preventing of intravascular clotting
12. Salivary secretion
13. Deglutition and other GIT motility
14. Vomiting
15. Blood groups and blood transfusion
16. Water, electrolyte and acid base balance $_t$
17. Thermoregulation
18. Glucose homeostasis

Curriculum of Physiology for M.Sc Of Urology

1. The urinary system, mechanism of urine formation.
2. Anatomy and Physiology of the nephron.
3. Diuretics.
4. Electrolyte balance and regulation of ECF osmolarity and volume.
5. Acid-base balance.
6. Renal function tests, acute and chronic renal failure.
7. Physiology of micturition and its abnormalities.
8. Cardiac output.
9. Regulation of arterial blood pressure.
10. Heart rate and its regulation.
11. Hemorrhage and shock.

12. Haemostasis.
13. Prevention of intravascular clotting, anticoagulants.
14. Calcium homeostasis and stone formation.

Curriculum of Physiology for M.Sc Of Chest Diseases

1. Respiration
2. Autonomic N.S
3. Circulation

a. Heart rate and its regulation
b. Venous return, cardiac output and arterial blood pressure
c. ECG
d. Capillary and lymph circulation, oedema
e. Pulmonary circulation
f. Coronary circulation

4. Renal physiology and micturition

a. Water and electrolyte balance
b. Acid base balance

5. CNS

Pain and pain control

6. Blood

a. Haemostasis, intravascular clotting
b. Anaemias
c. Immunity

7. 7-Endocrine:

Glucose homeostasis

8. Thermoregulation

Curriculum of Physiology for M.Sc Of Tropical Medicine

1. Digestive system
2. Blood
3. Heart rate and its regulation
4. Arterial blood pressure
5. Haemorrhage and shock
6. Capillary and lymphatic circulation, oedema
7. Pain sensation and pain control
8. Regulation of respiration
9. Renal physiology
10. Glucose homeostasis
11. Calcium homeostasis
12. Metabolism, Basal Metabolic rate, Specific dynamic action
13. Body temperature regulation
14. Hypothermia and hyperthermia
15. Starvation
16. Immunity

Curriculum of Physiology for M.Sc Of Rheumatology & Rehabilitation

1. Nerve and Muscle
2. CNS:

a. Sensation sand ascending tracts
b. Descending tracts
c. Upper and lower motor neuron, cerebellum, and
d. basal ganglia and lesions
e. Other neurological lesions

f. Reflexes
g. Muscle tone
3. Musclular Exercise:
a. Effects on cardiovascular system
b. Effects on respiratory system
4. 4-Circulation:
a. Heart rate and its regulation
b. Venous return and cardiac output
c. Arterial blood pressure
5. Water, electrolyte and acid base balance

Curriculum of Physiology for M.Sc Of E.N.T

1. Physiology of hearing
2. Physiology of smell
3. Physiology of taste
4. Vestibular apparatus
5. Themoregulation
6. Pain sensation and pain control
7. Upper respiratory passages
8. Regulation of respiration
9. Heart rate and its regulation
10. Arterial blood pressure
11. Haemorrhage and shock
12. Haemostasis
13. Prevention of intravascular clotting
14. Salivary secretion
15. Deglutition
16. Water, electrolyte and acid-base balance
17. Glucose homeostasis
18. Immunity

Curriculum of Physiology for M.Sc Of Neurology and psychiatry

1. C.N.S
2. Autonomic nervous system
3. Nerve and muscle
4. Heart rate and its regulation
5. Arterial blood pressure
6. Haemostasis
7. Prevention of intravascular clotting
8. Theromoregulation
9. Water and electrolyte balance
10. Acid-base balance
11. Micturition and defecation
12. Glucose homeostasis
13. Regulation of respiration
14. Calcium Homeostasis
15. Cerebral circulation
16. Hemorrhage and shock
17. Special senses

Curriculum of Physiology for M.Sc Of General Medicine

1. Autonomic nervous system
2. Digestion
3. Blood
4. Cardiovascular system
5. Pulmonary Function tests
6. Rgulation of respiration

7. Oxygen and CO2 transport
8. Endocrinology
9. Basal metabolic rate
10. Thermoregulation
11. Starvation, obesity
12. Sensations
13. Reflexes
14. CNS lesions
15. Cerebelum, basal ganglia, thalamus, hypothalamus, limbic system, vestibular apparatus
16. Renal physiology, Micturition, water electrolyte and acid base balance.

Curriculum of Physiology for M.Sc Of Ophthalmology

1- Autonomic nervous system:
- Divisions
- Autonomic ganglia
- Chemical transmitters

2- Sympathomimitics and sympatholytics
3- Parasympathomimitics and parasympatholytics
4- Neurotransmission
5- Hemostasis
6- Prevention of intravascular clotting.

Student Activities

The student's activities in the department are in the form of : Applied research, CDs, pictures, drawing specimens. The activities are performed under the supervision of the staff .

Example of student's activities

Program Evaluation

By the end of each year, the committee which consists of the head of the department and the staff members of physiology evaluate the effectiveness of the educational program by documenting the extent to which its objectives have been met.

By the end of practical exam feed back is obtained from the students in the form of questionnaire

Bylaws of the Department for students

- The number of students entering the class is not only determined by the number of qualified staff but also by the adequacy of critical resources
- The number and size of class rooms , laboratories, clinical training sites are put into consideration
- The students are classified equally into 2 main groups to form 10 small group.
- The staff members are classified equally into 10 groups. Each group has a senior professor, one assistant professor, 2 lecturers, 10 assistant lecturers and demonstrators in addition to 2 technician and 2 administrator (non-academic staff)

- The selection and classification of students have policies and practices that avoid gender, racial cultural, social and economic discrimination between students.
- The information regarding the manner of students classification describing the admission process, their schedule, the staff members is published through:

1- An information table in the department
2- The non –medical personnel (employers)
3- Orally in the main lecturer

Educational and Research Facilities

Physiology Department has a variety of educational facilities composed of 2 labs, 2 overhead projectors, 2 computers, 2 research lab and a library. As the department is making use of all available resources. So that the room is supplied with a white board required for teaching and one of the 2 computers. The lectures are supplied in the main lectures hall presents in the 1st and 2nd floor of the student Library Building.

I. The Laboratories

The 2 laboratories are founded in the department. Each lab contains a white board, light microscopes, slides, tubes and chemicals required for practical lessons.

Student lab A & B

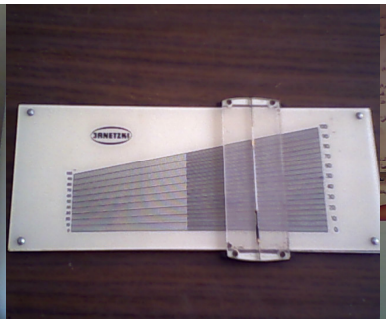
Demonstrators

Seminar hall

Sahli Haemometer

Students instruments

Chemicals


Sterilization equipments Haematocrite ruler Visual acuity



Centrifugation Light microscopes Computers

II. Research Facilities

The department has a research laboratory containing computer, different types of weightier, centrifuge, many apparatuses and with different chemicals required for research.



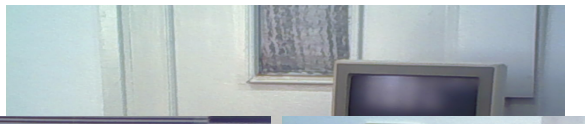
Animals In vitro research devices



Cathode ray oscilloscope Spirometer ECG machine

Endocrine research unit

Physiology department has a specialized well equipped research unit for endocrine studies. This unit allow staff members to perform many master and MD thesis in this field.



Chemilumenometer OPTOCOMP 1


Microscope with camera (100,000 magnification)

ULTRA Refrigerator

Flowrometer

Sensitive scale

Obesity research & management unit

Mission

Mission of the obesity management & research center is to help to limit and treat the progressively spreading pandemic of obesity by providing a multidisciplinary approach in obesity management depending on its integrative constitution of highly specialized departments of the faculty of medicine, Zagazig University.

Vision

Vision of the obesity management & research center is to develop the scientific research of the field of obesity and putting the outlines and guidelines of obesity management in our locality.

Objectives

1) To provide medical services to obese patients including diets, exercise physiology, physiotherapy & psychiatric sessions to ensure weight loss.
2) To prepare educational programs for obese patients and normal population for maintenance of ideal body weight.
3) To organize field studies and visits to village and towns of Sharkia governorate to assess prevalence, complication of obesity.
4) To organize conferences in the field of obesity.
5) Publication of scientific magazines and periodicals in the field of obesity.
6) To organize training course and professional diplomas in clinical nutrition and obesity.

IV. The Library

The department obtains a library consists of 2 sectors. The 1st one containing the most important text books not only in physiology & Clinical applied physiological cases. The other sector of the library contains copies of thesis in Master and Medical Doctorate Degrees in the department . It also contains number of the most recent review articles in these specialties.

The Library