Logbook of Master Degree in Medical Physiology

Personal Data

Name: ……
Department : ……
Mobile Number:……
E-mail Address: ……

Master Degree:

Date of registration: ……/……/……

MD/PhD Degree:

Date of registration: ……/……/……

Signature:

Head of the Department

Vice Dean for research and postgraduate study

Aim of the Logbook:

To provide evidence that the candidate attained the desired level of competence required to gain the award. In this book, the candidate will document all academic and clinical skills he/she attained during their training.

Important regulations (for MS candidates):

-To be legible for the first part MS exam you have to attend at least 70% of the lectures of each course in the semester as evidenced by the logbook

-To be legible for the (MCQ online) exam at the end of each of second part semesters you have to attend at least 70% of the lectures of each course/module in the semester as evidenced by the logbook.

- To be legible for the final MS exam:

1- A time interval of 36 months must pass since the **day of registration to the job** for residents and demonstrators and 30 months since the day **of degree registration** for non-residents.

2- You have to spend **a year of daily** clinical/practical training in the department or **two years with three times/week** practical/clinical training.

3-You have to register 4 semesters on Ibn lhaythm registration page.

4- You have to attend 70% of the lectures of each course in the second part of MS degree.

5- You have to fulfill and perform 70% of the practical skills documented in the logbook.

Bylaws of the MSc

I. The candidate should fulfill all required *scientific activities specified in this Logbook. Logbook activities include the followings;*

a) Theoretical courses *(23 credit hrs): distributed as follow;*

1. ***First part*** *(in semesters 1 and 2) (lectures and practical classes): 8 credit hrs*

2. ***Second part*** *(in semesters 3 and 4) (lectures and practical classes): 15 credit hrs*

***b) Training program and Activities for 36 months**: (in semesters 1-5): 10 credit hrs*

- All details of hours and courses, training program and activities are mentioned in table in page 4.

- 75% of credit hrs is the minimum required before the candidate is allowed to submit for the final PhD examination.

***II. The minimum requirement** of each individual Logbook activity is shown as follow:*

a) Attendance of seminars & journal clubs of others (at least 2 credit hrs)
b) Attendance of thesis discussion (at least 1 credit hr).
c) Attendance of conferences (at least 1 credit hr).
d) Attendance of the annual scientific conference of Mansoura Faculty of Medicine is a must.
e) Presentation of seminars (at least 2 credit hrs).
f) Presentation of journal clubs (at least 2 credit hrs).
g) Preparation of review or original articles or (at least 2 credit hrs).

Key: The credit hours are calculated as follow:

1) 1 hour **theoretical lecture** per week = 1 credit hour.
2) 2 hours **practical class** per week = 1 credit hour

درجة الماجستير في الفسيولوجيا الطبية

Medical Physiology القسم المانح للدرجة : الفسيولوجيا الطبية (علم وظائف الأعضاء).

المقر ا رت الد ا رسية وتوزيع الساعات المعتمدة

الساعات المعتمدة		الكود	Course	المقرر	
الإجمالي	المقرر				
	3	PHYS 503	Physiology of cell and	فسيولوجيا الخلية	الفصل

			electrophysiology	والالكتروفسيولوجي	الدراسي الاول والثاني
8	5	PHYS 504 PHYS 506 PHYS 510	Elective Course: Medical Biochemistry Medical Pharmacology Internal Medicine	المقرر الاختياري (يختار مقرر واحد) - علم كيمياء الحيوية - علم الفارماكولجيا - علم الباطنة	
15	13	PHYS 503 MP	Medical Physiology	الفسيولوجيا الطبية	الفصل الدراسي الثالث والرابع
	2	PHYS 504 AP PHYS 504 DSP	Elective Course: - Aviation Physiology - Deep Sea Physiology	مقرر اختياري (يختار مقرر واحد) - فسيولوجيا المرتفعات والطيران -فسيولوجيا الأعماق	
10		برنامج التدريب الاكلينيكي والعملي في الفسيولوجيا الطبية			كراسة الأنشطة
2		أنشطة علمية مختلفة			
10					الرسالة
45		إجمالي الساعات المعتمدة			

Contents

- First part (semester 1&2):
  - Section I: Scientific lectures.
  - Section II: practical skills
- Second part .
  - ✓ Section I: Scientific lectures.

- ✓ Section II: practical skills.
- ✓ Section III: Seminars.
- ✓ Section IV: Student teaching sections.
- ✓ Section V: scientific activities (Conferences/workshops, Journal club, Attended thesis discussions, and Prepared review or original articles).

- ❑ Final report.

First Part

Section I: Scientific lectures.

- **Name of the course: Cell and electrophysiology**
- **Compulsory - First part**

Teaching hours: 45 Semester: (spring/fall/summer) year…….

Date	Title of the lecture	Lecturer's signature
	Organization of human body and body fluids	
	Homeostasis and feedback mechanisms	
	Functional organization of cell membrane and functions of cell membrane and its components	
	Intercellular connections and their functional organization	
	Transport through cell membrane (diffusion, active transport, osmosis and vesicular transport	
	Resting membrane potential, action potential and graded potentials in excitable cells (neurons, skeletal, smooth and cardiac muscles)	
	Ion channels and membrane potentials and equilibrium potentials	
	Functions of cell organelles such as mitochondria, ribosomes, etc…….	
	DNA replication, transcription and translation	

	Organization of human body and body fluids	

- **Name of the course: Internal Medicine**
- **Elective - First part**

Teaching hours: 75 Semester: (spring/fall/summer) year.....

Date	Title of the lecture	Lecturer's signature
	Acid Peptic Disorders	
	Abnormal liver functions	
	Liver cell failure	
	Pancreatitis	
	Bowel habit disorders	
	Acute right sided heart failure	
	Bowel habit disorders	
	Acute right sided heart failure	
	Acute left sided heart failure	
	Chronic right sided heart failure	
	Respiratory failure type I	
	Respiratory failure type 2	
	Arterial blood gases	
	Anaemias	

	Thrombotic disorder	
	Diabetes mellitus	
	Thyroid disorders	
	Suprarenal gland disorders	
	Pituitary glands disorder	
	Acute Renal failure	
	Chronic renal failure	
	Coma	
	Convulsions	
	Rheumatic fever	
	Rheumatic arthritis	
	Cerebrovascular stroke	
	Neurodegenerative disorders e.g Parkinson and cerebral ataxia	
	Neuromuscular disorders	

Section II: Practical skills

Name of the course: Cell and electrophysiology

Name of the procedure/operation	Total number required	Observer	Assistant	Independent
Recording ABP in rats by rat tail indirect system and studying the effect of exercise & autonomic drugs	2	1		1
2.Measurement of **glucose uptake in skeletal muscle** (Diaphragm & gastrocnemius) (at rest & in response to exercise)	2	1		1
3.**Measurement of some serum parameters** such as blood glucose and serum creatinine by UV spectrophotometer	2	1		1

1- Recording ABP in rats by rat tail indirect system and studying the effect of exercise & autonomic drugs.			
Level of participation	**Date**	**Location**	**Signature of supervisor**
2- Measurement of **glucose uptake in skeletal muscle** (Diaphragm & gastrocnemius) (at rest & in response to exercise).			
3- Measurement of some serum parameters such as blood glucose and serum creatinine by UV spectrophotometer.			

Name of the course: Internal Medicine

Name of the procedure/operation	Total number required	Observer	Assistant	Independent
1- General examination and vital signs	7	3	2	2
2- Abdominal examination	6	2	2	2
3- Chest examination	2	1	1	-
4- Cardiovascular examination	2	1	1	-
5- ECG recording	2	1	-	1
6- Assessment of coma	1	1	-	-
7- Assessment of anemia	2	1	-	1
8- Assessment of jaundice cases	2	1	-	1
9- Assessment of hemorrhagic disorders	1	1	-	-

1- General examination and vital signs			
Level of participation	**Date**	**Location**	**Signature of supervisor**
2- Abdominal examination			

3- Chest examination			
4- Cardiovascular examination			
5- ECG recording			

6- Assessment of coma			
7- Assessment of anemia			
8- Assessment of jaundice cases			
9- Assessment of hemorrhagic disorders			

Second Part

Section I: Scientific lectures

Name of the course: Medical Physiology part I

Compulsory Second part

Credit hours: 5 Semester: (spring/fall/summer) year.....

Date	Title of the lecture	Lecturer's signature
	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	
	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 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	
	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	

	Respiratory physiology 1) Pulmonary ventilation. 2) Gas transport. 3) Regulation of respiration. 4) Respiratory adjustments in health & disease.	
	Blood physiology 1) Plasma proteins 2) Blood volume, total body water 3) Homeostasis and disorders of homeostasis 4) RBCS 5) Blood groups and Blood transfusion 6) WBC and Immunity	

Name of the course: Medical Physiology part II

Compulsory Second part

Credit hours: 8 Semester: (spring/fall/summer) year.....

Date	Title of the lecture	Lecturer's signature
	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	
	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. 7) Physiology of male and female reproductive system	
	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	
	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	
	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	
	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	

Name of the course: Aviation and space Physiology

Elective Second part

Credit hours: 2 Semester: (spring/fall/summer) year.....

Date	Title of the lecture	Lecturer's signature
	Effects of Low Oxygen Pressure on the Body	
	Alveolar PO2 at Different Elevations	
	Effect of Breathing Pure Oxygen on Alveolar PO2 at Different Altitudes	
	The “Ceiling” When Breathing Air and When Breathing Oxygen in an Unpressurized Airplane	
	Acute Effects of Hypoxia	
	Acclimatization to Low PO2	
	Natural Acclimatization of Native Human Beings Living at High Altitudes	

	Acute Mountain Sickness and High-Altitude Pulmonary Edema	
	Chronic Mountain Sickness	
	Effects of Acceleratory Forces on the Body in Aviation and Space Physiology	
	Effects of Linear acceleratory Forces on the Body	
	“Artificial Climate” in the Sealed Spacecraft	
	Weightlessness in Space	
	Physiologic Problems of Weightlessness (Microgravity)	

Name of the course: Deep Sea Physiology

Elective Second part

Credit hours: 2 Semester: (spring/fall/summer) year…….

Date	Title of the lecture	Lecturer's signature
	Effects of exposure to high pressure of N2 and N2 narcosis	
	Effects of acute and chronic oxygen toxicity	
	Hyperbaric oxygen	
	CO2 toxicity at great depths of the sea	
	Decompression of the drivers at high partial pressure at deep sea and decompression sickness	
	SCUBA diving and physiological problems of submarines	

Name of the course: Molecular Biology of the cell

Elective Second part

Credit hours: 2 Semester: (spring/fall/summer) year.....

Date	Title of the lecture	Lecturer's signature
	Cells and Genomes	
	Cell Chemistry and Biosynthesis	
	Basic Genetic Mechanisms	
	DNA and Chromosomes	
	DNA Replication, Repair, and Recombination	
	Control of Gene Expression	
	Manipulating Proteins, DNA, and RNA • Isolating Cells and Growing Them in Culture	

	• Fractionation of Cells • Isolating, Cloning, and Sequencing DNA • Analyzing Protein Structure and Function • Studying Gene Expression and Function	
	Visualizing Cells • Looking at the Structure of Cells in the Microscope • Visualizing Molecules in Living Cells	
	Internal Organization of the Cell • Membrane Structure • Membrane Transport of Small Molecules and the Electrical Properties of Membranes • Intracellular Compartments and Protein Sorting • The Transport of Molecules between the Nucleus and the Cytosol	
	Intracellular Vesicular Traffic	
	Cell Communication • General Principles of Cell Communication • Signaling through G-Protein-Linked Cell-Surface Receptors • Signaling through Enzyme-Linked Cell-Surface Receptors • Signaling Pathways That Depend on Regulated Proteolysis	

	The Cell Cycle and Programmed Cell Death	

Section II: Practical skills

Name of the procedure/operation	Total number required	Observer	Assistant	Independent
1. Induction of ONE of the followings experimental animal model such as; - DM (type 1 and 2) - Renal Ischemia - Liver cirrhosis - Hypo- and hyperthyroidism - Drug-induced nephrotoxicity - Obesity in rats - Neurological models such as parkinsonism	5	2	2	1
2.Effects of the followings on tracheal smooth muscles motility a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids	5	1	2	2
3.Assessment of Compliance of Rabbit's lung.	3	1	1	1
4. Assessment of platelet aggregation.	2	1		1

5- Effects of the followings on smooth muscle motility of isolated segment rabbit small intestine a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids f) Some GIT hormones	5	1	2	2
6- Effects of the followings on smooth muscle motility of isolated uterus and Fallopian tube a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids f) Some GIT hormones	5	1	2	2
7-Effect of different types of stress (exercise – cold – pain – noise) on some physiological parameters.	4	1	1	2
8- Effects of the followings on contractility of isolated perfused whole heart and isolated atria a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids	5	2	1	2

9- Effects of the followings on Aortic strip smooth muscle contraction a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids	**5**	**2**	**1**	**2**
10-Determination of pain threshold in animal by hot plate or paw-pressure test and studying the effect of some drugs e.g. opiates on pain threshold in rats	**3**	**1**	**1**	**1**

1. Induction of ONE of the followings experimental animal model such as;
- DM (type 1 and 2)
- Renal Ischemia
- Liver cirrhosis
- Hypo- and hyperthyroidism
- Drug-induced nephrotoxicity
- Obesity in rats
- Neurological models such as

Level of participation	Date	Location	Signature of supervisor

2.Effects of the followings on tracheal smooth muscles motility a) Temperature. b) Ions: ca. K+, Mg2+. c) Ion channel blockers. d) Autonomic drugs. e) Autacoids.

3.Assessment of Compliance of Rabbit's lung			
Level of participation	**Date**	**Location**	**Signature of supervisor**
4. Assessment of platelet aggregation			

5- Effects of the followings on smooth muscle motility of isolated segment rabbit small intestine

a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids f) Some GIT hormones

Level of participation	Date	Location	Signature of supervisor

6- Effects of the followings on smooth muscle motility of isolated uterus and Fallopian tube a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids f) Some GIT hormones

7-Effect of different types of stress (exercise – cold – pain – noise) on some physiological parameters.			
Level of participation	**Date**	**Location**	**Signature of supervisor**

8- Effects of the followings on contractility of isolated perfused whole heart and isolated atria a) Temperature. b) Ions: ca. K+, Mg2+. c) Ion channel blockers. d) Autonomic drugs. e) Autacoids.			

9- Effects of the followings on Aortic strip smooth muscle contraction a) Temperature b) Ions: ca. K+, Mg2+. c) Ion channel blockers d) Autonomic drugs e) Autacoids			
Level of participation	**Date**	**Location**	**Signature of supervisor**
10-Determination of pain threshold in animal by hot plate or paw-pressure test and studying the effect of some drugs e.g. opiates on pain threshold in rats			

Section III: Seminars

List of requirements:

1- Seminar attendance: 25

2- Seminar performance: 10

1- Attendance

Topic	Date	Supervisor signature

2- Performance

Topic	Date	Supervisor signature

Section IV:

Student teaching sections

List of requirements: (50 section)

Date	Section subject	Supervisor's signatur

Date	Section subject	Supervisor's signatur

Date	**Section subject**	**Supervisor's signatur**

Date	**Section subject**	**Supervisor's signature**

Section V: Scientific activities

• Conferences/workshops

List of requirements:

Conferences			
Total number required	**Attendance**	**Organization**	**Presentation**
6	**3**	**2**	**1**
Workshops			

Total number required	Attendance	Organization	Presentation
4	2	1	1

Activity (Conference/Workshop	Role	Date	Supervisor's signature

Role:

-Attendant

-Organizer

-Presenter

• Journal Club

List of requirements:

3- **Journal club attendance: 10**

4- **Journal club performance: 5**

1- Attendance

Topic	Date	Supervisor signature

2- Performance

Topic	Date	Supervisor signature

• Attended thesis discussion

List of requirements: 5

Title	Date	Supervisor signature

• Prepared Review Of Original Articles

Title of the article	Type	Date	Supervisor signature

Final Report

			Level of Performance	Attendance Hours	Academic advisor signature

			A	B	C	D	TH	AH	AH%	
First part	Compulsory course	lectures								
	Training program	Sem 1								
		Sem 2								
	Activities									
Second part	Elective course	Lectures								
	Compulsory course	Lectures								
		Practical								
	Training program	Sem 3								
		Sem 4								
		Sem 5								
		Sem 6								
	Activities									

- **Scoring of performance, A= excellent, B= sufficient, C= weak, D= unacceptable**
- **Attendance hours, TH= total hours, AH= attended hours, AH%= percentage of attended hours**

Coordinator *Academic Advisor* *Head of Department*