Quality Assurance Unit

Tanta University
Faculty of Medicine

Department of Medical Physiology

Course specifications

Medical Physiology for M.D in Neurology

2016/2017

Medical Physiology for Neurology Doctorate degrees Course specifications

University: Tanta **Faculty: Medicine** **Department: Medical Physiology**

A- Administrative Information

- **Program title: Medical Physiology for M.D in Neurology**
- **Department offering the program : Neuropsychiatry Department**
- **Departments responsible for the program: Neuropsychiatry & Medical Physiology Department.**
- **Course Code: NEUROPSCH 900N1**
- **Academic year/ Level : 2016 /2017**
- **No. of Credit/taught hours: 7 credit hour.**
- **Authorization date of course specification: / /**

B- Professional Information

1- Overall Course aims:

Our course aim to:

- Help the graduate to be familiar with normal nomenclature.
- Discuss functional differences between normal and different neurological diseases.
- Help the student to know how the brain or other parts of the nervous system work at any level, from Molecule to Mind.
- Acquire optimal learning opportunities for graduate based on innovative educational methods

2- Intended learning outcomes (ILOs):

a. knowledge and understanding:

At the end of the course the graduate should be able to:

a1 -Express their basic knowledge in neuroMedical Physiology..
a2 -identify selected topics in Medical Physiology related to Neurology at greater depth.
a3 -Identify how the body's Nervous systems are organized and how they act and interact with one another to enable the individual to adapt and survive in the face of changing needs
a4 -Recognize the physiological principles underlying pathogenesis and investigation of Neurological disease.
a5 -Explain the theories and principles , and updates knowledge in pathogenesis of neurological diseases at physiological levels

b. Intellectual skills:

At the end of the course the graduate should be able to

b1 Evaluate medical information neurological diseases to elicit new conclusions.

b2 Solve medical problem related to neurological diseases

d. General transferable skills:

At the end of the course the graduate should be able to

d.1. Communicate effectively with the patients and their relatives, transferring them information about illness in clear and suitable words

d.2. Apply basic computer using skills

d.3. Search specified topics on the library books, medical journals, and internet (e.g. assignments, journal club).

d.4. Apply self evaluation and specify his medical educational needs (e.g. through tutorials)

d.5. Mange time and practice team working

3- Course contents

3.1 course structure:

- 15 weeks /semester
- **Semester** starts in 1st of May and in 1st of November

3.2 course admission and progression requirements:

Registration, progress requirements, and schedule of written exams are provided by the faculty post graduate by laws provided to all students through post graduate guide book

3.3 Course details/ semester

Course title	Topic	No. of credit hours	No of Credit points	prerequisit
NEUROPSCH 900N1	compulsory courses in applied Medical Physiology*	7 hs	21 points	----------

3.4 Details of teaching Course /wk/15wks first semester

Course code	Teaching courses	No. of credit hours/wk	No. of contact hours/wk	Remarks
NEUROPSCH **900N1**	Formal lectures attended by the students	4hs	4hs	
	Tutorial	1h	2hs	
	Seminar	2h	4hs	

* The students should attend 75% of the activities related to the course . If the attendance less than 75%, the student should be notified and considered as forced withdrawal FW

*A log book is constructed to evaluate the attendance of each student for the different activities listed above by the main professor's advisory committee. The log book should be completed before the final comprehensive examination by one month.

Through out of the course different activities are recorded daily in the log book as follows; annex 1

Detailed contents of the course topics.

(Syllabus contents):

1. **Theory& activities.**

These listed topics below are covered through a mix of self learning and structured program (Formal lectures, tutorial, seminars and assignment) scheduled and previously announced in Medical Physiology department**.**

Detailed contents of the course topics. (Syllabus contents):

List of formal lectures, tutorials and seminars (Special topics).

1. Describe the mechanisms of neural signaling, within and between neurons and along .Neural pathways.

2. Describe the physiological mechanisms that account for sensory, motor and higher brain functions.

3. Receptors and synapses.

4. NeuroMedical Physiology , pathoMedical Physiology and behavioural consequences of traumatic Injury in the nervous system.

5. Modern Medical Physiology testing nervous cells functions.

6. Thermodynamic ,kinetic ,electrophysiological and metabolic aspects of membrane Transport.

7. Functions of limbic system, with special emphasis on the functional organization of amygdaloid complex.

8. Factors influencing selection ,attention and habituation process.

9. Medical Physiology of sleep and sleep disorders. Polysomnogram overnight test which diagnose sleep abnormaliy.

10. Exitation and conduction in nerve cells.

11. Reticular formation function and Disorders.

12. E.E.G. waveforms of an EEG.and its clinical applications

13. Medical Physiology of internal capsule and its Disorders.

14. Synaptic Plasticity and learning.

15. -Signal processing of central nervous system

16. Movement Disorders.

17. Interneuronal communication

18. -Motor Behavior, the Role of the Cerebellum.

19. -Dynamics of Cortical Inhibitory Circuits

20. - Sodium Channels and Cortical Neuronal Excitability.

21. Medical Physiology of equilibrium.

22. Function of NMDA-receptors
23. Central nervous system receptor, transmitter and blockers.
24. Medical Physiology of CSF and its barrier.
25. Reward and Punishement function of the limbic system , Chemical transmitter control
26. Calcium release channels and Alzehimer disease
27. Gamma system
28. Brocas area.
29. Brain opiate system.
30. Types of inhibition in the CNS.
31. Hyperkinetic and hypokinetic disorders related to basal ganglia.
32. Cardiovascular mechanic and hemodynamics

Related specialty systems:

1. Central nervous system.
2. Cardiovascular system.
3. Blood.
4. Excitable tissues (nerve & muscle)

4- Teaching and learning methods:

4.1 Illustrated lectures.
4.2 Tutorial is scheduled and previously announced special topics from the curriculum are discussed in the tutorial.
4.3 Assignment to be prepared by the graduate in one of the special topic taught.
4.4 Seminars are scheduled and previously announced
4.5 Fully equipped Medical library well stocked with books and journals related to Medical Physiology
4.6 Faculty equipped with internet acess.
- Each teaching method is designed to serve different educational goal & together they provide an appropriate stimulating atmosphere for learning.

5- Student Assessment:

5.1. An end semester written and oral examinations
5.2. The grades of the semester (Final qualified examination) is recorded in transcript for each student and the grades should not be less than C- or the student should repeat this examination.

6- Assessment schedule:

6.1. End Semester Final written	At the end of the semester (60% of the total mark)

qualifying examination	with at least 60% grade if less, The student repeat the written and the oral examination.
6.2. oral qualifying examination	At the end of the courses(40% of the total mark), After the written (if its evaluation is satisfactory) with grade 60% if less the student repeat only the oral exam

7- Weighing of assessments:

Grading system for End Semester written Exam:

Grade	%	Code	CGPA points
Excelent	95% or more	A	4.000
	90% to less than 95%	A-	3.666
Very Good	85% to less than 90%	B+	3.333
	80% to less than 85%	B	3.000
Good	75% to less than 80%	B-	2.666
	70% to less than 75%	C+	2.333
Satisfactory	65% to less than 70%	C	2.000
	60% to less than 65%	C-	1,666
Failed	55% to less than 60%	D+	1.333
	30% to less than 55%	D	1.000
	Less than 30%	F	0.000

Final comprehensive exam

Medical Physiology	Final written	Final oral	Total
Final comprehensive exam	90 (60%)	60 (40%)	150

List any formative only assessment:

Final semester examination: In the form of:

- **Written examination**: consists of one paper, three hours designed to evaluate understanding of the subject..
- **Oral examination:** each student is evaluated by at least 4 examiners,

8- List of references:

8.1. Essential books (Textbooks):

The following textbooks will be used in the course

1. Guyton &Hall textbook of Human Medical Physiology and Mechanisms of Disease.
2. Gannon (review of medical Medical Physiology).
3. Vander's human Medical Physiology.
4. L.S. Costanzo. Medical Physiology. 3rd edition. W.B. Saunders Company.
5. R.A.Rhoades and D.Bell. Medical Medical Physiology. Lippincott Williams & Wilkins , 3rd edition

8.2. Alternative textbooks:

6. Principle of Medical Physiology. Robert M.Bern.
7. PathoMedical Physiology. Biological basis of disease. Kathren L. Macance RN..
8. Human Medical Physiology from cell to system by: Lauralee Sherwood.
9. L.S.Costanzo. Medical Physiology. Board review series. Lippincott Williams & Wilkins.
10. C.H. Best and N.B. Taylor. physiological basis of medical practice. Lippincott Williams & Wilkins.

8.3. Periodicals, Web sites, etc:

- www.tebawy. 5ucom.
- http://bcs.whfreeman.com.
- http://www.bpcc.eud/sciencealliedhealth/humanMedical Physiologylinks.html.
- http://bio-alive.com/animations/Medical Physiology.htm.

9- Other resources/ facilities required for teaching and learning to achieve the above ILOs:

- All facilities required for teaching are available.

10- We certify that all of the information required to deliver this course is contained in the above specifications and will be implemented.

We verify that the above course and the analysis of students and external evaluator opinions are accurate.

Course coordinator and head of department
name……..signature…….Date……

Head of quality assurance unit:
name……..signature…….Date……