



Quality Assurance Unit



Tanta University
Faculty of Medicine

Department of Medical Physiology

Course specifications

Medical Physiology for M.D in Ophthalmology

2016/2017

Medical Physiology for Ophthalmology Doctorate degrees Course specifications

University: Tanta

Faculty: Medicine

Department: Medical Physiology

A- Administrative Information

- **Program title:** Medical Physiology for M.D in Ophthalmology
- **Department offering the program:** Ophthalmology Department
- **Departments responsible for the program:** Ophthalmology&Medical PhysiologyDepartment
- **Course Code:** OPHT9002
- **Academic year/ Level :** 2016 /2017
- **No. of Credit/taught hours:** 3½ credit hour
- **Authorization date of course specification:** / /

B- Professional Information

1- Overall Course aims:

Our course aim to :

- Help the students emphasizing reading, discussion and recent knowledge.
- Acquire the graduate with advanced understanding of the Medical Physiology mechanisms by which the body responds to internal and external stimuli and to provide the basis for understanding the mechanisms behind pathological responses to these stimuli.
- Discuss selected topics in Medical Physiology at greater depth
- Help the students to know the physiological principles underlying pathogenesis and treatment of disease.

2- Intended learning outcomes (ILOs):

a. knowledge and understanding:

At the end of the course graduate should be able to

- a.1. Specify topics closely related to Ophthalmology
- a.2. Identify selected topics in Medical Physiologyfor Ophthalmology at greater depth
- a.3. Summarize the physiological principles underlying pathogenesis and treatment of disease.
- a.4. Recognize with advanced understanding of the Medical Physiology mechanisms by which the body responds to internal and external stimuli and to provide the basis for understanding the mechanisms behind pathological responses to these stimuli.

b. Intellectual skills:

At the end of the course graduate should be able to

- b.1.Practice reading, discussion and recent knowledge.
- b.2.Revise with awareness of the various systematic approaches to reduce medical errors and how to implement system solutions.

d. General transferable skills:

At the end of the course graduate should be able to

- d.1. Manage time, prepare and give talks.
- d.2. Solve problems and interact effectively with student & other people and in a small group.
- d.3. Communicate and work as part of a team, recognizing the strengths, weaknesses, needs and sensitivities of others.

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 | prerequisite |
|--------------|---|---------------------|---------------------|--------------|
| OPHT9002 | compulsory courses in applied Medical Physiology* | 3½ hs | 10½ 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 |
|-------------|--|------------------------|-------------------------|---------|
| OPHT9002 | Formal lectures attended by the students | 1½h | 1½h | |
| | Tutorial | 1h | 2hs | |
| | Seminar | 1h | 2hs | |

* 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.The role of Gap Junctions in Retinal Medical Physiology
- 2.Diabetes-related changes of the eyes
- 3.Visual perception.
- 4.Visual input at the retina
- 5.Cortical processing to higher level visual functions, such as colour, depth, space, and motion perception.
- 6.The neural development of the retina
- 7.Visual development in new born and infants,
8. Visual memory,
9. Corneal endothelial pump
10. The role of ocular proprioception in localizing objects in space for accurate eye-hand coordination
11. Learning and compensation for vestibular disturbances that occur either within the labyrinth or more centrally within the brain
12. The mechanisms by which the brain maintains correct alignment of the eyes to prevent diplopia and strabismus
13. electroretinogram (ERG)
14. electro-oculogram EOG)
15. Visual evoked potential (VEP)
16. Color vision and its neural basis.
17. Dark adaptation
18. Contrast sensitivity to characterize visual dysfunction in patients with diseases of the visual system.
19. Dynamics of orientation selectivity in the visual cortex
- Neuronal and perceptual effects of visual masking
20. Central mechanism in visual perception
21. Cerebellum influence eye movements
22. Photoreceptors influence circadian rhythm.
23. Optics, Refraction and Visual Aids
24. NeuroMedical Physiology of the visual system

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 access.

- Each teaching method is designed to serve different educational goal, and together they provide an appropriate stimulating atmosphere for learning.

5- Student Assessment:

5.1. At the end of the 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 qualifying examination | At the end of the semester (60% of the total mark) 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 | Final practical | Total |
|---------------------------|----------------------|-------------------|------------------------|--------------|
| Final comprehensive exam | 45(60%) | 15 (20%) | 15(20%) | 75 |

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/humanMedicalPhysiologylinks.html>.
- <http://bio-alive.com/animations/MedicalPhysiology.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.

