



Quality Assurance Unit



Tanta University  
Faculty of Medicine

**Department of physiology**

**Course specifications**

**Physiology and Human Anatomy  
and embryology for Physical  
Medicine, Rheumatology &  
Rehabilitation diploma degrees**

**2014/2015**

Physiology and Human Anatomy and embryology for Physical Medicine, Rheumatology & Rehabilitation Diploma degrees Course specifications

**University: Tanta**

**Faculty: Medicine**

**Department: physiology**

### **A- Administrative Information**

- **course title: physiology and Human Anatomy and embryology for Physical Medicine, Rheumatology & Rehabilitation Diploma degrees**
- **Department offering the course : Physical Medicine, Rheumatology & Rehabilitation.**
- **Departments responsible for the program: Physical Medicine, Rheumatology & Rehabilitation**
- **Course Code: PRR 7001**
- **Academic year/ Level : 2014 /2015**
- **No. of Credit/taught hours:**  
**theoretical: 2 & practical: 1 credit hour.**
- **Authorization date of course specification: 5-11- 2014**

### **B- Professional Information**

#### **1- Overall Course aims:**

The goals of this course is making candidate qualified as a researcher and specialist in the field of Rheumatology and Rehabilitation to make a proper diagnosis of different rheumatology disorders and rehabilitation problems.

#### **2- Intended learning outcomes (ILOs):**

##### **a. knowledge and understanding:**

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

- a.1. Demonstrate a comprehensive understanding of physiology related to physical medicine and rheumatology.
- a.2. Identify the etiology, pathophysiology of topics related to diseases of the Nervous system, musculoskeletal problems
- a.3. Express critical understanding of physiology of wide range of body systems in health and diseases

##### **b. Intellectual skills:**

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

- b.1. Analyze and evaluate medical information and relate it to medical problem solving in the field of specialities .
- b.1. Integrate basic science of anatomy and physiology of connective tissue, bone, joint and muscle with clinical care of patients with rheumatic disorders.

b.2.Explain the scientific basis of the methodology, list indications and interpret laboratory tests and imaging procedures used in diagnosis of rheumatic diseases.

**d. General transferable skills:**

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

- d.1-Communicate effectively with his colleagues . .
- d.2 Apply self evaluation and specify his medical educational needs , and Perform continuous medical education.
- d.3 -use different learning resources to get knowledge and information.

**3- Course contents:**

Course title	Topic	No. of lectures/week	No. of credit hours	Remarks
	Physiology and Human Anatomy and embryology	2	2	Co-requisite with Anatomy

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

**Topics of physiology**

**General topics**

- 1- Haemostasis and blood coagulation, anticoagulant, Hemorrhagic disorders.
- 2- Erythropoiesis and anemia.
- 3- ABO system &Rh factor, blood transfusion and incompatible blood transfusion .
- 4- Hypoxia and cynosis.
- 5- Pulmonary function testes.
- 6- Homoeostasis.
- 7- Regulation of gastrointestinal secretion.
- 8- Normal and abnormal motility of gastrointestinal tract.
- 9- Water balance, Blood volume, factors affecting and its regulation.
- 10- Regulation of food intake and obesity.
- 11- Endocrine functions of suprarenal cortex and its disorders.
- 12- Thyroid functions and its disorders.
- 13- Cellular mechanism of actions of hormones.
- 14- Pain sensation &pain analgesia system.
- 15- Glucose homeostasis and disturbances.
- 16- Arterial blood pressure, types and pathophysiological basis of hypertension
- 17- Heart rate and its regulation.
- 18- Acid base balance and its functions tests.
- 19- Ca++ homoeostasis.

- 20- Mechanisms of transcellular and transcapillary exchange.
- 21- Control diameters of arterioles.
- 22- Hemorrhage & shock.
- 23- Coding of sensory information.
- 24- Functions of the thalamus and thalamic syndrome.
- 25- Mode of action of autonomic nervous system.
- 26- Chemical transmitter of autonomic nervous system

**Related specialty systems:**

- 1. Motor part of the CNS.
- 2. Exercise physiology
- 3. Neuromuscular physiology.
- 4. Metabolism

**Related specialty topics.**

- 1. Integration and adjustment of organs, systems to athletic training & exercise.
- 2. Regulatory mechanisms involving receptors, second messenger & coordination of cellular metabolism to meet physiological challenge function.
- 3. EMG in normal & some pathological conditions.
- 4. Thermodynamic, kinetic, electrophysiological & metabolic aspect of transmembrane transport & nerve conduction.
- 5. Neurological disturbance resulting from diseases or damage to some regions of the nervous system.

**Topics of anatomy:**

- 1 ) muscles of the:

Head & neck

Back

Upper limb

Lower limb

- 2) Neuropathways

- 3) spinal cord

- 4) brain stem

- 5) thalamus

- 6) internal capsule

- 7) Spinal nerves.

8) cranial nerves

#### **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 scheduled and previously announced to facilitate selection identification of their topics.

4.5 Practical sections

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

#### **5- Student Assessment:**

Log book & MCQ

#### **6- Assessment schedule:**

#### **7- Weighing of assessments:**

- MCQ exam will be done at the end 1<sup>st</sup> semester (at the end of 15 week)
- Final written exam consists of one paper, 3 hours. With the co-requisite subjects. 45degree
- Oral examination each student is evaluated by 2 examiners.30degree

#### **8- List of references:**

##### **List of references of physiology**

##### **8.1. Essential books (Textbooks):**

- Guyton &Hall textbook of Human Physiology and Mechanisms of Disease.

- Gannon (review of medical physiology).

- Vander's human physiology.

##### **8.2. Recommended books:**

- Applied physiology in intensive care by M.R. Pinsky (Editor), J. Mancebo (Editor), L. Brochard (Editor), Gran Hedenstierna 2009.

- An introduction to human disease: pathology & pathophysiology correlations by Leonard Crowley. Hardcover August 2009.

- Critical pathways in cardiovascular medicine: Second Edition Lippincott Williams & Wilkins.

- Applied physiology: A manual showing functions of the various organs in disease by Frederich Augustus Rhodes.

**8.3. Periodicals, Web:**

- [www.tebawy.5u.com](http://www.tebawy.5u.com).
- <http://bcs.whfreeman.com>.
- <http://www.bpcc.edu/sciencealliedhealth/humanphysiologylinks.html><http://bio-alive.com/animations/physiology.htm>.
- Human physiology from cell to system By: Lauralee Sherwood.

**List of references of anatomy:**

Text book: Recommended books

- Gray's Anatomy
- Atlas of anatomy (Nutter, Grant....etc)
- Fundamental anatomy ( Hartwing , Walter Carl 2008)

8.3 Periodicals and web sites

[www.innerbody.com](http://www.innerbody.com)

[www.instantanatomy.net](http://www.instantanatomy.net)

**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.**

***Course specifications: physiology and Human Anatomy and embryology for Physical Medicine,  
Rheumatology & Rehabilitation diploma degree, 2014-2015***

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

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