

University of Puerto Rico  
Medical Sciences Campus  
Department of Physiology  
School of Medicine  
Academic Year 2006-2007

**Course Title:** Basic Human Physiology for Dental Students

**Codification:** CBIO 7160

**Contact Hours:** 74

Information regarding the origin of the course: The course originated from the need of dental students to have a basic understanding of the body function that enables them to make rational clinical judgments.

**Prerequisite Courses:** Anatomy, Histology, Biochemistry, Neurosciences

### **Course Description**

The course will offer basic physiological knowledge necessary to understand the essential facts and concepts of human physiology, in order to be able to make clinical judgments on a rational scientific basis.

### **General Objectives**

1. Demonstrate knowledge of the function of the cell membrane and the ways cells communicate.
2. Describe the morphological and functional characteristics of the three types of muscle in the body: skeletal, cardiac, and smooth muscle.
3. Understand the basic organization, properties, and function of the cardiovascular system.
4. Describe the function of the respiratory system.
5. Describe the function of the gastrointestinal system.
6. Describe the structure and function of the kidneys.
7. Describe the composition and function of the endocrine system and its role in the regulation of organic metabolism and energy balance.

## **Rules and Guidelines**

1. The course consists of 74 contact hours in which the major areas of human physiology will be presented using a lecture-based format. The specific objectives and materials on each section will be assigned at the beginning of each area by the faculty in charge as indicated in the program presented below. The faculty member will meet with the students at the scheduled dates for topic presentation and to discuss the material assigned. Attendance is mandatory.
  2. The coordinator will not entertain requests from students regarding exam questions from the faculty involved. The student must negotiate complaints about exam questions with the writer of the question. Discrepancies in the material found in books other than those assigned by the department will not be taken into consideration for adjustments. Students with requests on exam questions, have seven working days after the date of evaluation to clarify doubts with the faculty in charge of the particular area of concern. After this period, no request will be entertained.
  2. No reposition examination will be provided for students that fail the course. In event that some students fail to achieve the overall level of performance expected, the department will recommend a summer physiology course as a remedial activity in an accredited institution of the US.
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## **Teaching Methods**

The course will be lecture-based. The students will meet with the faculty in charge to receive the specific objectives for the section, and the assigned readings. The material to be studied will be mostly from the textbook of the course. In addition, illustrations, slides, and handouts prepared by the staff could be used.

Student progress will be evaluated by means of three exams. The first exam (54 question items) will cover Cell physiology, Neuro, Muscle and Cardio, the second (44 question items) will cover Respiration, Renal, and AB balance, and the third (48 question items), Gastrointestinal, Endocrine, Bone and Reproduction.

## **Evaluation Procedures:**

Examinations: At the end of the course, the accumulated points will be divided by the total number of questions (146). Students scoring above 90% will receive an A, students scoring 80 to 89, will receive a B, students scoring 70 to 79 will receive C, and students below 70% will receive F. A minimum of 70% is required to pass the course. Student who fails to attain this level of performance will have the opportunity of taking a remedial summer course in an accredited institution in the US. The highest possible grade to be registered by the Physiology Department in the remedial course is a C. Students who fail this remedial course will be referred to the Dean of the School of Dentistry for a final decision.

Students that do not achieve the required performance by the end of the cardiovascular physiology section will receive a letter from the coordinator of the course communicating the problem, and the Dental School will be duly notified for appropriate corrective actions.

**Statement on Ethics:**

The written examinations are the means utilized by the Department to measure the student's performance in their educational experiences. It is our intention to guarantee that all students have the opportunity to demonstrate their academic achievements under the same circumstances, eliminating all possibility for unfair or unethical behavior. To attain this goal, we trust in our students' commitment to honesty and professional ethics. Should unethical behavior be observed, appropriate measures will be taken.

**Participating Faculty:**

Dr. M.J. Crespo, Lab. A667, Ext. 8078  
Dr. J. Miranda Lab. 4 A-682 Ext. 1631  
Dr. W. Silva, Lab. 2 A-688 Ext.1611  
Dr. G.E. Santacana, Lab. 3 A-644 Ext. 1644  
Dr. C. Jimenez, Lab. 1 A-689 Ext. 1613  
Dr. C. Torres, Lab. A-659  
Dr. A. Segarra, Lab. 9a A-659 Ext. 1965  
Dr. N. Escobales Lab. 9 A-663 Ext 1612, Coordinator of the Course.

All of the above laboratories are located in the 6th floor of the Medical Sciences Building.

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## Tentative Schedule (2007-2008)

Note: Meeting will be held in room A-225.

<u>Theme</u>	<u>Faculty</u>		<u>Dates</u>
Introduction	Dr. N. Escobales		1/30
Cell Physiology	Dr. N. Escobales	6 hrs	1/30-2/1
Neurophysiology	Dr. C. Jimenez	10 hrs	2/6-2/15
Muscle Physiology	Dr. G. Santacana	1 hrs	2/15
Cardiovascular	Dr. G. Santacana	10 hrs	2/15-2/27
<b>EXAM 1</b>		2 hrs	3/6
Respiration	Dr. M.J. Crespo	10 hrs	3/13-3/28
Renal	Dr. N. Escobales	10 hrs	3/28-4/3
AB Balance	Dr. N. Escobales	2 hrs	4/4
<b>EXAM 2</b>		2 hr	4/9
Gastrointestinal	Dr. W. Silva	10 hrs	4/10-4/17
Endocrine	Dr. C. Torres	10 hrs	4/17-4/23
Bone physiology	Dr. G. Santacana	2 hour	4/24
Reproductive	Dr. A. Segarra	3 hrs	4/25
<b>EXAM 3</b>		2 hr	4/30
Total		80 hrs	

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### Lecture Periods by Dates and Hours:

Faculty	Theme	Hrs (pm)	Dates
<b>N. Escobales</b>	Introduction	1:00-1:30	Jan 30
"	Cell Physiol	1:30-4:00	Jan 30
"	"	1:00-4:00	Feb 1

<b>C. Jimenez</b>	Neuro	1:00-4:00	Feb 6
"	"	1:00-4:00	Feb 8
"	"	1:00-4:00	Feb 13
"	"	1:00-2:00	Feb 15
<b>G. Santacana</b>	Muscle	2:00-3:00	Feb 15
"	Cardio	3:00-4:00	Feb 15
"	"	1:00-4:00	Feb 20
"	"	1:00-4:00	Feb 22
"	"	1:00-4:00	Feb 27
EXAM 1		1:00-3:00	March 6
<b>M. Crespo</b>	Respiration	1:00-4:00	March 13
"	"	1:00-4:00	March 20
"	"	1:00-4:00	March 27
"	"	1:00-2:00	March 28
<b>N. Escobales</b>	Renal	2:00-4:00	March 28
"	"	1:00-4:00	March 30
"	"	1:00-4:00	April 2
"	"	1:00-3:00	April 3
<b>M. Crespo</b>	AB-balance	1:00-3:00	April 4
EXAM 2		1:00-2:00	April 9
<b>W. Silva</b>	GI	1:00-4:00	April 10
"	"	1:00-4:00	April 11
"	"	1:00-4:00	April 13
"	"	1:00-2:00	April 17
<b>C. Torres</b>	Endo	2:00-4:00	April 17
"	"	1:00-4:00	April 18
"	"	1:00-4:00	April 20
"	"	1:00-3:00	April 23
<b>G. Santacana</b>	Bone	1:00-3:00	April 24
<b>A. Segarra</b>	Repro	1:00-3:00	April 25
EXAM 3		1:00-3:00	April 30

**Required Textbook:**

Human Physiology. The Mechanisms of Body Function. Arthur Vander, James Sherman, and Dorothy Luciano. Eighth Edition. WCB McGraw-Hill, New York, NY. 2001.

*Bibliography:*

Physiology. Linda S. Constanzo W.B. Saunders Company. Philadelphia, 1998.

Principles of Physiology. Robert M. Berne and Matthew N. Levy. Second Edition. The C.V. Mosby Company Philadelphia, 1999.

Medical Physiology. Rhoades R.A. and Tanner G.A. Eds. 2<sup>nd</sup> Ed. Lippincott Williams &Wilkins. Philadelphia 2003.

Review of Medical Physiology. W.F. Ganong. 20<sup>th</sup> Ed. Lange Medical Books/McGraw-Hill, New York. 2001.

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