Human Physiology
ppy-2540-m01

Lecturer: Dr. Anya M. Hillery
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Semester: Fall 2016
Credits: 4
Timetable: Tues, Thurs: 14.30-15.45, San Ignacio Hall C
Office Hours: 14.00 – 16.00 (Wednesday)
Office Location: Health Science Office, Padre Arrupe Hall (Top Floor)
Text: Principles of Anatomy and Physiology
      Wiley; 13th edition

Course Objective:

To provide a basic introduction to human physiology: the study of the functions of the human body and its constituent parts.

Course Description and Objectives:

This course begins with an overview of the body as a whole, its constituent levels of organization and a description of how the various systems work together to provide an integrated whole. The crucial concept of homeostasis and the importance of homeostatic control mechanisms are also introduced at the beginning, to serve as the unifying theme for the subsequent study of the body systems.

The course then follows with a detailed study of the physiology of seven different systems of the human body: the skeletal, muscle, nervous, endocrine, cardiovascular, respiratory, digestive, urinary and reproductive systems.

Throughout the course, the complementarity of structure and function is emphasised. Also, every opportunity is taken to highlight homeostatic mechanisms within the system under consideration and show how these mechanisms contribute to overall homeostasis.
Course Contents and Learning Outcomes:

The course is divided into 4 main areas of study:

Part 1: An introduction to the physiology of the human body

Learning Outcomes:
The student will understand the levels of body organization, the concept of homeostasis and feedback control, the function of the major physiologically relevant macromolecular groups in the human body, the physiology of cells and cell membranes (with particular focus on plasma membrane transport), the functions of tissues.

Part II: Muscle Physiology

Learning Outcomes:
The student will understand the different types of muscle, the sliding-filament model, the contraction cycle, excitation-contraction coupling, muscle metabolism, the control of muscle tension, and the neuromuscular junction.

Part III: Systems of communication and control (nerves and hormones)

Learning Outcomes:
The student will understand the physiology of nervous tissue, including the generation and propagation of action potentials, and signal transmission at synapses. The student will understand reflex responses and neuronal pathways of the spinal cord, the functions of the different regions of the brain and also brain integration, how the autonomic nervous system works, and the physiology of the somatic and special senses.

The student will have an understanding of the functions of the various organs of the endocrine system and how the endocrine and nervous systems function together to attain homeostasis.

Part IV: Maintenance of the human body

Learning Outcomes:
The student will understand the physiology of the cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems, both alone and how they function together, to achieve homeostasis.
These subject areas are sub-divided into the following topics, with the following tentative timeline:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to physiology and homeostasis</td>
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</table>
| 2    | Plasma Membrane Physiology  
     | Cells & Tissues |
| 3    | Muscles |
| 4    | Muscles ctd |
| 5    | Nerves: electrical signals, Resting Potentials and Action Potentials  
     | Nerves: synapses and neurotransmitters,  
     | FIRST MID-TERM EXAMINATION |
| 6    | CNS and PNS |
| 7    | Special senses |
| 8    | The endocrine system |
| 9    | The cardiovascular system |
| 10   | The cardiovascular system ctd. |
| 11   | The cardiovascular system ctd.  
     | SECOND MID-TERM EXAMINATION |
| 12   | The respiratory system |
| 13   | The digestive system |
| 14   | The urinary system |
| 15   | The reproductive systems  
     | FINAL EXAMINATION |

**Examinations:**

There are three main exams for this course: two mid-terms and a final exam.

The exams are not cumulative, thus the first mid-term will examine the material covered up to this exam. The second mid-term will examine the material covered after the first mid-term and the final exam will examine the material covered after the second mid-term.

However, there is also a comprehensive final exam that examines all of the course material. This exam is obligatory for students who fail or miss either mid-term exam. It is voluntary for any students who, having done their mid-terms, would like to try and improve their grade (but a poor result may obviously reduce the grade).

Students who miss an exam are required to provide written documentation of the circumstances, e.g. doctor’s medical certificate, letter from university counsellor, etc.

There will also be two Quizzes, taken in class, a week before the two mid-terms. The aim of these quizzes is to encourage study and revision for the mid-terms.
Important Dates!

The full academic calendar for this semester is found here: http://www.slu.edu/madrid/academics/registrar/academic-calendar

The full exam schedule for this semester is found here; http://www.slu.edu/madrid/academics/registrar/final-exam-schedule/2016-2017

In particular, please note the following:

- First Quiz: Thursday 29 September
- First Mid-Term: Thursday 6 October
- Second Quiz: Thursday 3 November
- Second Mid-Term: Thursday 10 November
- Final Exam: Friday 16 December (12.00-15.00)

Please note also:

- As an exception, we will meet on Friday December 9th, in order to compensate for the two holidays that week.
- No final exam can be given outside of the assigned date to any student without the permission of the Academic Dean's Office

Grades:

The final grade is calculated as follows:

    Mid-term 1: 25%
    Mid-term 2: 25%
    Final Exam: 30%
    Homeworks: 20%

Homework assignments will be given throughout the semester. They will be marked and returned to the student. Homework is not accepted if handed-in late.

Class attendance is obligatory. Absence from class must be accounted for. Unaccountable absence will negatively affect the final grade. More than four unaccountable absences will result in a drop in the final grade. Continual lateness to class is disruptive and not acceptable.

Extensive use of the SLU GLOBAL Learning System will be employed. All lectures will be posted there in advance and it is highly recommended that you read the lectures before class and bring a printed copy with you to class.

Bibliography

The following books are stocked in the library and are recommended:
Academic Integrity and Plagiarism

Academic integrity is honest, truthful and responsible conduct in all academic endeavors. The mission of Saint Louis University is "the pursuit of truth for the greater glory of God and for the service of humanity." Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care and community service via which SLU embodies its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern. The governing University-level Academic Integrity Policy can be accessed on the Provost's Office website at:


Additionally, SLU-Madrid has posted its academic integrity policy online: http://www.slu.edu/madrid/academics. As a member of the University community, you are expected to know and abide by these policies, which detail definitions of violations, processes for reporting violations, sanctions and appeals.

The professor will review these matters during the first weeks of the term. Please direct questions about any facet of academic integrity to your faculty, the chair of the department of your academic program or the Academic Dean of the Madrid Campus.

Information regarding the collection of student work for assessment

In order to maintain quality academic offerings and to conform to accreditation requirements, SLU-Madrid regularly assesses its teaching, services and programs for evidence of student learning. For this purpose, SLU-Madrid keeps representative examples of student work from all courses and programs on file, including assignments, papers, exams, portfolios and results from student surveys, focus groups and reflective exercises. Copies of your work for this course may be kept on file for institutional research, assessment and accreditation purposes. If you prefer SLU-Madrid not to retain your work for this purpose, you must communicate this decision in writing to your professor.
**Title IX Statement:**

Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University.

If you speak with a faculty member about an incident of misconduct, that faculty member must notify SLU's Title IX deputy coordinator, Marta Maruri, whose office is located on the ground floor of Padre Rubio Hall, Avenida del Valle, 28 (mmaruri@slu.edu; 915-54-5858, ext. 213) and share the basic fact of your experience with her. The Title IX deputy coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

If you wish to speak with a confidential source, you may contact the counselors at the SLU-Madrid's Counseling Services on the third floor of San Ignacio Hall (counselingcenter-madrid@slu.edu; 915-54-5858, ext. 230) or Sinews Multipletherapy Institute, the off-campus provider of counseling services for SLU-Madrid (www.sinews.es; 917-00-1979). To view SLU-Madrid's sexual misconduct policy and for resources, please visit the following web address: [http://www.slu.edu/Documents/Madrid/campus-life/SLUMadridSexualMisconductPolicy.pdf](http://www.slu.edu/Documents/Madrid/campus-life/SLUMadridSexualMisconductPolicy.pdf).

**Accommodation statement:**

In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. Students who think they might benefit from these resources can find out more about:

- Course-level support (e.g., faculty member, departmental resources, etc.) by asking your course instructor.
- University-level support (e.g., tutoring/writing services, Disability Services) by visiting the Academic Dean's Office (San Ignacio Hall) or by going to [http://www.slu.edu/madrid/learning-resources](http://www.slu.edu/madrid/learning-resources).

Students with a documented disability who wish to request academic accommodations must contact Disability Services to discuss accommodation requests and eligibility requirements. Once successfully registered, the student also must notify the course instructor that they wish to access accommodations in the course. Please contact Disability Services at disabilityservices-madrid@slu.edu or +915 54 58 58, ext. 230 for an appointment. Confidentiality will be observed in all inquiries. Once approved, information about the student's eligibility for academic accommodations will be shared with course instructors via email from Disability Services. For more information about academic accommodations, see "Student Resources" on the SLU-Madrid webpage.

Note: Students who do not have a documented disability but who think they may have one are encouraged to contact Disability Services.