



SAINT LOUIS UNIVERSITY  
MADRID

## Human Physiology PPY-2540-M01 Fall 2017

**Class Days and Time:** Tuesday, Thursday; 14.30-15.45

**Classroom:** PRH 16

**Credits:** 4

**Instructor:** Dr Anya M Hillery

**Instructor's Email:** [anya.hillery@slu.edu](mailto:anya.hillery@slu.edu)

**Instructor's Campus Phone:** 91 554 58 58

**Office:** Health Science Office, Padre Arrupe Hall (Top Floor)

**Office Hours:** Tuesday and Thursday, 10:00- 11:00; 14.00-14.30; 15.45-16.15

### Course Description:

This course provides a basic introduction to human physiology: the study of the *functions* of the human body and its constituent parts. Two approaches are used to explain how the human body works: (i) the *purpose* of a body process and (ii) the underlying *mechanism* by which this process occurs.

The course begins with an overview of the body as a whole and its constituent sub-levels of organization. The crucial concept of homeostasis (and the importance of homeostatic control mechanisms) are introduced, to serve as the unifying theme for the subsequent study of the different body systems.

Subsequently, the course is divided into 4 main areas of study:

- (i) Muscle Physiology
- (ii) Systems of communication and control (the nervous system and the endocrine system)
- (iii) Maintenance of the human body, which includes a detailed study of the cardiovascular, respiratory, digestive and urinary systems.
- (iv) The Reproductive system

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

### Course Goals and Student Learning Outcomes:

At the end of the course, students will understand the following concepts:

- Homeostasis: the concept of homeostasis and feedback control
- Cells and cell membrane physiology, with particular focus on plasma membrane transport
- The functions of the 4 different types of tissues
- Muscle Physiology: 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

- Nerve Physiology: the generation and propagation of action potentials, synaptic transmission, reflex responses, the functions of the different regions of the brain and also brain integration, the autonomic nervous system, the physiology of the somatic and special senses.
- Endocrine physiology: the functions of the various organs of the endocrine system and how the endocrine and nervous systems function together to attain homeostasis.
- Body systems: the physiology of the cardiovascular, respiratory, digestive and urinary systems
- Reproduction: the physiology of the male and female reproductive systems

Saint Louis University - Madrid Campus is committed to excellent and innovative educational practices. In order to maintain quality academic offerings and to conform to relevant accreditation requirements, the Campus regularly assesses its teaching, services, and programs for evidence of student learning outcomes achievement. For this purpose anonymized representative examples of student work from all courses and programs is kept on file, such as assignments, papers, exams, portfolios, and results from student surveys, focus groups, and reflective exercises. *Thus, copies of student work for this course, including written assignments, in-class exercises, and exams may be kept on file for institutional research, assessment and accreditation purposes.* If students prefer that Saint Louis University - Madrid Campus does not keep their work on file, they need to communicate their decision in writing to the professor.

### **Required Texts and Materials:**

*Principles of Anatomy and Physiology*, G.J. Tortora and B.H. Derrickson. Wiley; 13<sup>th</sup> edition.

The following books are stocked in the library and are also recommended:

- Principles of Human Anatomy. (Tortora)
- Anatomy & Physiology (Thibodeau and Patton)
- Anatomy and Physiology: Colouring and Workbook (Ross & Wilson)
- Drug Delivery and Targeting for Pharmacists and Pharmaceutical Scientists (Hillery and Park)
- Human Biology: Form, Function and Adaptation (Dewitt)
- Molecular Biology of the Cell (Alberts, Bray et al)
- Biology: Concepts and Connections (Campbell, Mitchell, Reece)

### **Attendance Policy:**

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.

### **Course Requirements and Grading Rationale/System:**

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.

There are three main examinations 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.

The final grade is calculated as follows:

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

**E-mail:**

Campus and course announcements will often be handled by e-mail. Students should check their “@slu.edu” e-mail regularly.

**University Statement on Academic Integrity:**

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.

**University 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](mailto: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](mailto:counselingcenter-madrid@slu.edu); 915-54-5858, ext. 230) or Sinews Multiplettherapy Institute, the off-campus provider of counseling services for SLU-Madrid ([www.sinews.es](http://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>.

**Students with Special Needs:**

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 <https://www.slu.edu/madrid/campus-life/student-services/disability-services>

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](mailto: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.

**Fall 2017 Course Schedule:**

Monday, September 4	
Tuesday, September 5	Introduction to physiology and homeostasis
Wednesday, September 6	
Thursday, September 7	Plasma Membrane Physiology Cells & Tissues
Friday, September 8	
Saturday, September 9	
Sunday, September 10	
Monday, September 11	
Tuesday, September 12	Cells & Tissues Muscle Physiology
Wednesday, September 13	
Thursday, September 14	Muscle Physiology
Friday, September 15	
Saturday, September 16	
Sunday, September 17	Last Day to Drop a Class Without a Grade of W and /or Add a Class, choose Audit (AU) or Satisfactory/Unsatisfactory (S/U) Options
Monday, September 18	
Tuesday, September 19	Muscle Physiology
Wednesday, September 20	
Thursday, September 21	Muscle Physiology Nerves: electrical signals, Resting Potentials and Action Potentials
Friday, September 22	
Saturday, September 23	
Sunday, September 24	
Monday, September 25	
Tuesday, September 26	Nerves: electrical signals, Resting Potentials and Action Potentials
Wednesday, September 27	
Thursday, September 28	Nerves: synapses and neurotransmitters, <b>QUIZ 1</b>
Friday, September 29	
Saturday, September 30	
Sunday, October 1	
Monday, October 2	
Tuesday, October 3	Peripheral Nervous System and Central Nervous System
Wednesday, October 4	

Thursday, October 5	<b><u>MID-TERM I</u></b>
Friday, October 6	
Saturday, October 7	
Sunday, October 8	
Monday, October 9	
Tuesday, October 10	Central Nervous System
Wednesday, October 11	
Thursday, October 12	Fall Break
Friday, October 13	
Saturday, October 14	
Sunday, October 15	
Monday, October 16	
Tuesday, October 17	Special senses
Wednesday, October 18	
Thursday, October 19	The endocrine system
Friday, October 20	
Saturday, October 21	
Sunday, October 22	
Monday, October 23	
Tuesday, October 24	The endocrine system
Wednesday, October 25	
Thursday, October 26	The cardiovascular system
Friday, October 27	
Saturday, October 28	
Sunday, October 29	
Monday, October 30	Last Day to Drop a Class and Receive the Grade of W.
Tuesday, October 31	The cardiovascular system
Wednesday, November 1	University Closed
Thursday, November 2	The cardiovascular system <b><u>QUIZ II</u></b> Spring Registration Opens!
Friday, November 3	
Saturday, November 4	
Sunday, November 5	
Monday, November 6	
Tuesday, November 7	The cardiovascular system
Wednesday, November 8	
Thursday, November 9	University Closed
Friday, November 10	
Saturday, November 11	
Sunday, November 12	
Monday, November 13	
Tuesday, November 14	<b><u>MID-TERM II</u></b>
Wednesday, November 15	
Thursday, November 16	The respiratory system
Friday, November 17	
Saturday, November 18	
Sunday, November 19	
Monday, November 20	
Tuesday, November 21	The respiratory system
Wednesday, November 22	
Thursday, November 23	The digestive system
Friday, November 24	
Saturday, November 25	

Sunday, November 26	
Monday, November 27	
Tuesday, November 28	The digestive system
Wednesday, November 29	
Thursday, November 30	The digestive system The urinary system
Friday, December 1	
Saturday, December 2	
Sunday, December 3	
Monday, December 4	
Tuesday, December 5	The urinary system
Wednesday, December 6	University Closed
Thursday, December 7	The reproductive systems
Friday, December 8	University Closed
Saturday, December 9	
Sunday, December 10	
Monday, December 11	
Tuesday, December 12	The reproductive systems
Wednesday, December 13	
Thursday, December 14	Final Exam – Day 1
Friday, December 15	Final Exam – Day 2
Saturday, December 16	
Sunday, December 17	
Monday, December 18	<b><u>FINAL EXAM PHYSIOLOGY 12.00-15.00</u></b> Midyear Commencement!
Tuesday, December 19	Final Exam – Day 4
Wednesday, December 20	Final Exam – Day 5
Saturday, December 23	Grades Due to Registrar