

Saint Louis University  
Madrid Campus

## **Human Anatomy ANAT-1000**

<b>Lecturer:</b>	Dr. Anya M. Hillery
<b>E-mail:</b>	anya.hillery@slu.edu
<b>Semester:</b>	Spring 2018
<b>Credits:</b>	3
<b>Pre-requisites:</b>	None
<b>Timetable:</b>	14.30 – 15.45 (M, W) Padre Rubio Hall, 14
<b>Office hours:</b>	Monday 13.15-14.15 and 15.45-16.45. Wednesday 13.15-14.15. Also by appointment. Health Science Office, Padre Arrupe Hall (top floor, on the left).
<b>Text:</b>	<i>Principles of Anatomy and Physiology</i> , 13 <sup>th</sup> edition. Tortora and Derrickson. Wiley.

### **Course Objective:**

To provide a basic introduction to human anatomy: the study of the structure of the human body and the relationships among the various structures. On finishing the course, the student should have a clear understanding of the basic concepts and principles of human anatomy.

### **Description of the Course:**

The course is divided into 4 parts:

1. An introduction to the anatomy of the human body
2. Principles of support and movement
3. Systems of communication and control
4. Maintenance and Continuity of the human body

## **Course Contents, Time-line and Learning Outcomes:**

### **Part 1: Weeks 1 - 3: An Introduction to the Anatomy of the Human Body**

Anatomy and anatomical terms

Macromolecules

Cells

Tissues

The integumentary system

**Learning Outcomes, Part I:** *At the end of this section, the student will have learned and understood:*

1. The definitions of anatomy and physiology, the levels of body organization and the 11 inter-related systems of the human body
2. The concept of homeostasis and feedback control
3. Anatomical terminology, including: body positions, regional names, directional terms, planes and sections, body cavities
4. Various techniques of medical imaging, including x-rays, CT scans, MRI, endoscopy, PET scans.
5. The structure and function of the major physiologically relevant macromolecular groups in the human body: carbohydrates, lipids, proteins and nucleic acids
6. The structure and composition of the plasma membrane
7. The components of the cells cytoskeleton
8. The structure of the major cellular organelles, particularly in relation to the synthesis of proteins
9. The structure of the four tissues types of the human body – epithelial, connective, muscle and nervous. The student will understand what these tissues look like, their functions and where they are found in the human body.
10. The structure of the skin, the cells of the epidermis, the epidermal layers, keratinization, cutaneous receptors, the structure of hair and nails.

### **Part II: Weeks 4 - 7: Principles of Support and Movement**

Bone tissue

The skeletal system: the axial skeleton

The skeletal system: the appendicular system

Joints

Muscle tissue

The muscular system

**Learning Outcomes, Part II:** *At the end of this section, the student will have learned and understood:*

1. The structure of bone, the types of bones, the histology of bone tissue, blood and nerve supply of bone.
2. The names, structural inter-relationships and major features of the cranial and facial bones. Unique features of the skull (fontanelles, sutures and sinuses).
3. The structure of the hyoid bone.
4. The structure of the vertebral column, the different regions, areas of curvature and intervertebral discs. Parts of a typical vertebra.
5. The structure of the thorax (sternum and ribs and costal cartilage).
6. The names, structural inter-relationships and major features of the pectoral and pelvic girdles and the upper and lower limbs.

7. A comparison of male and female pelvises.
8. The classification of the joints (articulations). Detailed understanding of the structure of a synovial joint, using the patellar joint as an example.
9. Different types of synovial joints, including what type of movement is allowed and where in the body they occur.
10. Different types of muscle tissue, with particular emphasis on the structure of skeletal muscle.
11. Microscopic anatomy of a skeletal muscle fibre, particularly with respect to the arrangement of the myofibrils, myofilaments and the sarcomere.
12. Types of skeletal muscle fibres, including SO, FOG and FG fibres.
13. Principal skeletal muscles: 50 major muscles (or muscle groups) are studied in detail: their origin and insertion, their action, their antagonistic pair (where appropriate).

### **Part III: Weeks 8-10: Systems of Communication and Control**

The nervous system

The endocrine system

**Learning Outcomes, Part III:** *At the end of this section, the student will have learned and understood:*

1. The structure, function and organization of the nervous system, with particular reference to afferent and efferent pathways.
2. The histology of neurons and neuroglia. Myelination and grey and white matter.
3. The structure of nerve synapses and specific neurotransmitters.
4. The structure of the meninges.
5. The external and internal anatomy of the spinal cord.
6. Sensory and motor tracts of the spinal cord.
7. The anatomy of the spinal nerves – their CT covering and their distribution, with particular reference to spinal nerve plexuses.
8. What dermatomes are and their clinical relevance.
9. The cranial meninges and other protective coverings of the brain.
10. The formation, circulation and reabsorption of the CSF.
11. The gross and micro-structure of constituent parts of the brain stem and cerebellum.
12. The structure (and some indicative functions) of the thalamus, hypothalamus and epithalamus.
13. The structure of the cerebrum, including the cortex and underlying white matter, the cerebral lobes, the basal ganglia and the limbic system.
14. The cerebral cortex sensory, motor and associative (Brodmann) areas and their associated functions.
15. The names, locations and functions of the 12 pairs of cranial nerves.
16. The structure and location of somatic sensory receptors.
17. The structure of the accessory structures of the eye, the anatomy of the eyeball, the microstructure of the retina, including the structure of the photoreceptors.
18. The anatomy of the outer, middle and internal ear, with particular emphasis on the structure of the cochlea, saccule and utricle, semicircular ducts.
19. The names and locations of the major endocrine glands of the human body.

#### **Part IV: Weeks 11 - 17: Maintenance of the Human Body**

The cardiovascular system

The respiratory system

The digestive system

The urinary system

The reproductive system

**Learning Outcomes, Part IV:** *At the end of this section, the student will have learned and understood the main macro- and micro-structural features of the pertinent organs and tissues of each system.*

#### **The Exams:**

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

#### **Important Dates!**

- First Mid-Term: Wednesday 14 February
- Second Mid-Term: Wednesday 14 March
- Final Exam: Friday 4 May (15.30-18.30)

#### **Grades:**

The final grade is calculated as follows:

Mid-term 1: 30%

Mid-term 2: 30%

Final Exam: 30%

Work-book: 10%

The Anatomy Workbook will be distributed at the start of term. It consists of a series of assignments that complement the class material. It will be collected periodically throughout the term, with feed-back given. Please see it as a valuable revision and study aid. The workbook will **not** accepted if handed-in late.

## **Attendance Policy**

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

## **Texts**

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

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

Relevant anatomy websites will be recommended throughout the course.

Extensive use of the SLU Global Learning System will be employed. All lectures will be posted there, as well as many additional support features (including lecture summaries and home-work assignments) and it should be checked daily for announcements.

## **Statement on Academic Honesty:**

*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:

[http://www.slu.edu/Documents/provost/academic\\_affairs/University-wide%20Academic%20Integrity%20Policy%20FINAL%20%206-26-15.pdf](http://www.slu.edu/Documents/provost/academic_affairs/University-wide%20Academic%20Integrity%20Policy%20FINAL%20%206-26-15.pdf).

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.

### **Support for Students**

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>.

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.

### **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 Syllabus 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 Multipletherapy Institute, the off-campus provider of counseling services for SLU-Madrid ([www.sinews.es](http://www.sinews.es); 91-700-1979) 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>