



Australia's
Global
University

Faculty of Medicine
School of Medical Sciences

ANAT2511

FUNDAMENTALS OF ANATOMY

PRACTICAL MANUAL

SEMESTER 1, 2018

Course Staff

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Appointments with any of the above academics should be arranged via email.

Course Details

Course aims

This course is designed as a stand-alone subject for students who will benefit from knowledge of basic anatomy.

The aim of this course is to provide students with an understanding of the structural organization of the human body at a gross (macroscopic) and histological (microscopic) level, i.e. the position, form and structure of organs and 'systems'. The course is designed to provide an understanding of the human body that underpins its functioning and medical and biomedical engineering designs. The course provides an overview of the structure of the major components of each of the body systems, and includes an overview of the microscopic structure of its tissues. The course is strengthened by an emphasis on the relationship between structure and function. In addition, students will gain familiarity with anatomical and medical terminology and their meanings.

Students are provided the opportunity to appreciate and value the medical sciences especially anatomy and at the end of the course, to leave with an increased sense of awareness and value of the human body and improved capacity to make informed decisions regarding health.

Student learning outcomes

The course focuses on the most important organ systems (musculoskeletal, respiratory, cardiovascular, nervous, digestive, reproductive and sensory organs). At the end of the course, the student will be able to appreciate the structure of the above systems and how this structure optimises the organ functioning. Recent advances in medical and biomedical engineering research related to anatomy will also be discussed.

Student engagement particularly through the gross anatomy practicals will equip them to be able to identify the anatomical features of each of these systems on dissected human specimens, bones and models, as well as

applying these to discussion of functional and applied aspects of the body system. Histology practicals focus of the identification of cells and tissues, viewed by virtual microscopy images of real tissue, again with consideration of their functions.

Through the team based learning activities, students will also develop written and oral skills in scientific communication, and the ability to peer-review and evaluate scientific writing and presentations.

Course Structure and Attendance

It is strongly recommended that students attend all lectures as they provide the basis for the practical and subsequent classes. To satisfy the requirements of the course you are expected to attend **at least 80% of practical classes** and failure to do so (without good reason) may result in a fail.

Gross Anatomy Lectures	Histology Lectures	Histology Practical	Gross Anatomy Practical	Gross Anatomy Tutorial
Monday	Wednesday	Friday	Monday	Thursday OR Friday
9-10am Mathews Theatre A	1-2pm Central Lecture Block 6	12-2pm Wallace Wurth Ground Floor, G06/07	11am-1pm OR 2-4pm Wallace Wurth 1 st Floor, 101E	Thu 4-5pm OR Fri 3-4pm Mat 103

Recommended Texts and other Resources

See also [Learning Resources](#).

Recommended Text

Any one of the following textbooks bundles are recommended for the course:

- **Text:** Marieb E.N., Wilhelm P.B. & Mallat J (2017). Human Anatomy, 8th ed. (International Edition), Pearson.
Atlas: Hutchinson M., Mallat J., Marieb E.N., Wilhelm P.B. (2007). A Brief Atlas of the Human Body, 2 nd ed., Pearson Benjamin Cummings. **Electronic Resource:** Anatomy Practice Lab 3, Pearson
- **Text:** Tortora, G.J., & Nielsen M.T. (2014). Principles of Human Anatomy. 13 ed., John Wiley and Sons Inc.
Atlas: Tortora, GJ (2004). A Photographic Atlas of the Human Body with Selected Cat, Sheep and Cow Dissections 2nd ed., Wiley. **Electronic Resource:** Real Anatomy 2, Wiley.

Other additional useful texts:

- Tank P.W. and Gest T.R. (2009) **Atlas of Anatomy**. Lippincott, Wilkins and Williams
- Hull, Kerry **Colouring Atlas of the Human Body**, Lippincott, Wilkins and Williams ISBN-13: 978-0-7817-6530-5
- Young, B., Lowe, S., Stevens, A. and Heath, J.W., **Wheater's Functional Histology: A Text and Colour Atlas**, 5th ed., Churchill Livingstone, 2006. ISBN -13:9780443068508.

Online Resources:

- A **Digital Atlas of Electron Microscopy** by Bruechner, University of Kentucky accessed by using the icon on the student computers in G6 and G7 laboratories.
- **Acland's Video Atlas of Human Anatomy**. Wolters Kluwer, LWW. This is available via the UNSW Library Medicine/Anatomy resources.

Revision Facilities:

- Anatomy Museum – located on the 1st floor of the Wallace Wurth building. The museum contains a variety of bottled anatomical dissections. Please do not remove museum jars from shelves. The museum also contains computers loaded with Anatomy software and Internet access. Access to the museum is by swipe card and is restricted to anatomy students only, between 8.30 a.m. and 5.30 p.m. Monday to Friday. NO photography is allowed in the Anatomy Museum.

- Rooms 106 – 108 in the Wallace Wurth Building contain computers with a variety of anatomical software, including the Virtual Microscope. Access to this laboratory is by student swipe card only.
- Histology laboratories (G6/G7) are generally open from about 8.30 a.m. to 5.30 p.m. Monday to Friday. Students may use them during these hours, provided **the rooms are not required for other classes**. Again, these are accessible by swipe card only.
- This course also has a series of **Virtual Anatomy Adaptive Tutorials (V-AnATs)** that are useful for revising each week's content.

Assessment

Team based learning	10%
Team based assignment	15%
Practical Tests x2, mid-term and final (Gross Anatomy & Histology)	35 %
Final Theory exam	40 %

Team based learning

During the first week of the course you will be divided into 5 practical/tutorial groups and each group will be further subdivided into teams of 4-5 students each. Each team will have a mixture of abilities and backgrounds. The use of team-based learning is designed to improve your learning experience using individual and team quizzes and peer-teaching in an interactive discussion facilitated by a tutor. Students will work in teams for each practical session. These quizzes will be based on pre-readings, lectures and practical sessions. You should therefore make every attempt to engage in all the learning situations provided in the course. The quizzes will be distributed at the beginning of selected practical sessions. These quizzes will be attempted individually and the answers submitted to your tutor. The same quiz questions will then be attempted in teams, with each team submitting their consensus answers. The tutor will then facilitate an interactive discussion of each question and provide clarifications on the challenging questions and concepts. The practical session will then continue with the tasks outlined in your course manual and will usually cover the same scope as the quiz.

You will receive a maximum of **2.5%** towards your final course mark for each tutorial quiz, comprising **1.5%** for your individual performance and **1%** for your group's performance. Over the duration of the semester, four of these tutorial/practical sessions will contribute to **10%** of your final marks.

You will receive your group and team allocations by week 2. These teams will also work together on the group project.

To complete the team assignment task, teams will be assigned a topic in week 2 and should:

- Research the topic and understand the topic well
- Understand the underlying anatomy, and its functional and clinical relevance
- Produce an **anatomy web page** that explains the topic and the underlying anatomy concisely. **Due dates for the assignment will be provided on the Moodle site.**
- In Week 10, teams will submit a review of two assigned team submissions (a peer review rubric will be provided to assist with this process), and peer-review of individual team member contributions
- Marking criteria for this assignment is available on the course Moodle site.
- **Marks will be deducted for submissions after the deadline.**

Supplementary Examinations

It is intended that supplementary exams for the School of Medical Sciences in Semester 1, 2018 will be held between Saturday 14 July - Saturday 21 July 2018.

If you are eligible for these, you will be notified of the exact date and time as soon as possible after final exam marks have been resolved. Please note, supplementary and deferred examinations may have a significant oral component.

The Use and Handling of Specimens (i.e. human remains) in the dissecting room

Prior to attending the practical classes you should read the section below on the handling and use of anatomical specimens.

1. In this and other courses, you will be required to study human anatomical (prosected/professionally dissected) specimens. By law, responsibility to the donor and their living family members, and as a matter of good ethical practice, you must treat all human remains with great care, showing them the respect you would afford a living person. Any inappropriate handling will result in exclusion from the class and possible suspension from the course.
2. Moreover, you must at all times show respect for your tutor and colleagues. Some people react differently to human remains; certain parts of the body may be culturally sensitive or even offensive; some students find working with human heads to be disturbing.
3. Students **must** bring and wear a laboratory coat for all laboratory classes and **must** wear closed toe shoes. Moreover, you **must** wear disposable gloves when handling wet specimens, and at no times are you allowed to eat or drink in the dissecting room. **Failure to comply with these rules will result in you being asked to leave the dissection room.** These are occupational health and safety requirements of the School of Medical Sciences. First aid kits are also provided in the dissection room in the event of an injury during a laboratory class.
4. The solution that most of the human remains are stored in is a mild disinfectant and poses no danger to students when handled correctly. Thus, the floral smell is the disinfectant, and has nothing to do with decomposition of the bodies: they are preserved in formalin and do not decompose under laboratory conditions. They can, however, dry out/discolour through regular use and exposure to air.
5. Due to the delicate nature of the human brain, these specimens are stored in formalin. This chemical emits a strong odour; harmless, unless ingested or exposed to in high concentrations over long periods of time. Please do not spend too long handling such specimens as you might find the fumes cause discomfort. If they do, simply excuse yourself from the class (inform your tutor) and quietly leave the cubicle or laboratory for some fresh air.
6. Some students feel uncomfortable, even physically sick the first time (or few times) they study prosected human remains. This is a common reaction among students and is nothing to be ashamed about. If you feel discomfort when handling remains, simply stand back and observe and communicate with other students in your group while they handle remains. If you feel sick, simply excuse yourself from the class (inform your tutor) and quietly leave the cubicle or laboratory for some fresh air.
7. When handling these materials please be very careful. Always wear gloves, use instruments such as forceps and probes to touch structures, and keep handling to a minimum. Do not move remains from one bench to another. If they need to be moved, ask your tutor to do it.
8. When you have been handling wet specimens always remove your gloves before handling models. Moreover, always wash your hands with soap at the basins in the dissection room when a class has finished (i.e. before leaving the dissection room). Make a habit of practicing good hygiene to look after yourself and others (classmates, other students and your family).
9. Anatomical models must also be treated with great care. Proper handling is essential: do not pick up a cranium by placing your fingers in the orbits, as this will lead to breakage of delicate bones. Instead, pick it up by placing one hand across the braincase, just behind the orbits, and the other hand beneath its base.

CLASS SCHEDULE – S1-2018

*******NOTE: SPOT TEST 2 in EXAM period*******

WEEK	DATES	LECTURES Gross Anatomy: Mon 9-10, Mathews Th A Histology: Wed 1-2pm, CLB 6		Histology PRACTICAL Fri 12-2pm WWG6/G7	Gross Anatomy PRACTICAL Mon: 11am-1pm or 2-4pm WW101E	Gross Anatomy Tutorial Thu 4-5pm or Fri 3-4pm Mat 103	Consolidation Activities <i>see Moodle</i>
1	26/02-04/03	Gross Anatomy L1: Introduction to Anatomy	Intro to Team-based Learning	TBA	Gross Anatomy P1 Intro to anatomy & body systems	Tutorial 1 Introduction Quiz - trial	Museum Visit; Adaptive tutorial & Optional activities
2	05/03-11/03	Gross Anatomy L2: Cardiovascular System	Histology: Basic Tissues	Histology Practical 1: Intro to Histology & Basic Tissues I	Gross Anatomy P2: Cardiovascular System	Tutorial 2 Cardiovascular System Quiz 1	Adaptive tutorial & Optional activities & Museum Visit
3	12/03-18/03	Gross Anatomy L3: Respiratory System	Histology: Muscle	Histology Practical 2: Basic Tissues II	Gross Anatomy P3: Respiratory System	Tutorial 3 Respiratory System	Adaptive tutorial & Optional activities
4	19/03-25/03	Gross Anatomy L4: Digestive System	Histology: Circulatory System	Histology Practical 3: Muscle	Gross Anatomy P4: Digestive System	Tutorial 4 Digestive System Quiz 2	Adaptive tutorial & Optional activities
5	26/03-01/04	Gross Anatomy L5: Urinary & Reproductive Syst	Histology: Respiratory System		Gross Anatomy: P5: Urinary & Reproductive Syst.	Public Holiday	Adaptive tutorial & Optional activities
MED SESSION BREAK 02/04 -08/04 (Fri 30/03 in Week 5 is public holiday)							
6	09/04-15/04	Gross Anatomy L6: Skeletal System 1	Tutorial 5 Urinary & Reproductive Syst Quiz 3	Histology Practical 4: Circulatory System	REVISION LAB	TBA	Adaptive tutorials for Weeks 1-5 should be completed by 9am on 09/04/18
7	16/04-22/04	SPOT TEST 1		TBL: PROJECT	Gross Anatomy P6: Skeletal System 1	Tutorial 6 Skeletal System 1	Virtual Anatomy Tutorial
8	23/04-29/04	Gross Anatomy L7: Spinal Cord & PNS		Histology Practical 5: Respiratory System	Gross Anatomy P7: Spinal Cord & PNS	Tutorial 7 Nervous System Quiz 4	Adaptive tutorial & Optional activities
9	30/05-06/05	Gross Anatomy L8: Brain & ANS	Histology: Digestive System	Histology Practical 6: Digestive System	Gross Anatomy P8: Brain & ANS	Tutorial 8 ANS	Adaptive tutorial & Optional activities
10	07/05-13/05	Gross Anatomy L9: Ear & Eye	Histology: Urinary System	Histology Practical 7: Urinary System	Gross Anatomy P9: Ear & Eye	Tutorial 9 Vision & Hearing Quiz 5	Adaptive tutorial & Optional activities
11	14/05-20/05	Gross Anatomy L10: Skeletal System 2 & Articular System	Histology: Bone & Joints	Histology Practical 9: Bone & Joints	Gross Anatomy P10: Skeletal 2 & Articular	Tutorial 10 Bones & Joints	Adaptive tutorial & Optional activities
12	21/05-27/05	Gross Anatomy L11: Muscular System	Histology: Nervous Tissue	Histology Practical 8: Nervous tissue	Gross Anatomy P11: Muscular	Tutorial 11 Muscular System Quiz 6	Adaptive tutorial & Optional activities
13	28/05-03/06	Gross Anatomy L12: Exam Prep	Histology: Integumentary System	Histology Practical 10: Integumentary System	REVISION LAB	NOTE: Spot 2 is scheduled with exams	Adaptive tutorials for Weeks 7-12 should be completed by 9am on 28/05/18

