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Please read this manual/outline in conjunction with the following pages on the [School of Medical Sciences website](#):

- [Advice for Students](#)
- [Learning Resources](#)

(or see "STUDENTS" tab at [medicalsciences.med.unsw.edu.au](http://medicalsciences.med.unsw.edu.au) )

## Staff

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## Units of Credit

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ANAT2511 Fundamentals of Anatomy is a 6 UOC course. Exclusion Courses: ANAT1521 Anatomy for Medical Science, ANAT2111 Introductory Anatomy, ANAT2241 Histology: Basic and Systematic.

## Course Aims and Learning Outcomes

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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.

At the end of the course, the student should:

1. Demonstrate an understanding of the ethical considerations, and good practice of, working with cadaveric tissue
2. Demonstrate the appropriate use of the anatomical terminology of body planes, relations, movement, and cavities
3. Demonstrate an understanding of the topographical and histological anatomy of each of the components of body systems
4. Demonstrate an application of anatomical concepts to biomedical engineering applications

The course focuses on the major 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 organ function. 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.

## Course learning activities

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This course is designed to be delivered online with various learning activities to assist student's engagement in the subject with a variety of synchronised and self-directed learning. The course will have 2 hours lectures divided in two 1-hour lectures, followed by workshops dedicated to either Anatomy or Histology contents of the systems targeted in each study week. The course will have a drop-in session as well 1 hour a week to give the students the opportunity to discuss any matters related to the subject with the subject convenor or their delegates.

The students will have the opportunity to test their level of knowledge in each week via the formative assessment. Additionally, weekly continuous assessment component will be run on each Monday for the contents of the previous week to encourage students to be on top of their studies and would not fall behind.

## Resources for students

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### Prescribed Text:

- Tortora, G.J., et al. (2019). Principles of Anatomy & Physiology, 2<sup>nd</sup> Asia-Pacific Edition, John Wiley and Sons Inc.
- To source this book via UNSW bookshop:
  - Print:  
<https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780730363538>  
<https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780470501450>
  - Digital (eBook):  
<https://unswbookshop.vitalsource.com/products/-v9780730354987>

### Prescribed Atlas:

- Logan BM (2016). Logan's Illustrated Human Anatomy, 1<sup>st</sup> ed., CRC press.

### Other useful texts:

- Marieb EN, Wilhelm PB & Mallat J (2020). Human Anatomy, 9<sup>th</sup> ed., Pearson.
- Young, B., et al. Wheater's Functional Histology: A Text and Colour Atlas, 5<sup>th</sup> ed.
- Nielsen, M., and Miller, S.D. (2011). Atlas of Human Anatomy, John Wiley and Sons Inc.
- Hull, Kerry, Colouring Atlas of the Human Body, Lippincott, Wilkins and Williams.
- Snell, R. (2012). Clinical Anatomy by Systems. 9<sup>th</sup> ed., Lippincott, Williams and Wilkins.
- Drake, R. et al. (2014). Gray's Anatomy for Students. 3<sup>rd</sup> ed., Churchill Livingstone (available ONLINE).
- Moore, K. & Dalley, A. (2018). Clinically Oriented Anatomy, 8<sup>th</sup> ed. Wolters Kluwer.
- Rohen, J., Yokochi, C. & Lütjen-Drecoll, E. (2006). Color Atlas of Anatomy: A Photographic Study of the Human Body, 6<sup>th</sup> ed. Lippincott, Williams and Wilkins.

### Websites and Student Support:

- Virtual Microscopy Database (VMD): <http://virtualmicroscopydatabase.org/>
- Histology Guide (Brelje & Sorenson): <http://www.histologyguide.com/index.html>
- Equitable Learning Services <https://student.unsw.edu.au/els>
- Special Consideration <https://student.unsw.edu.au/special-consideration>
- Transitioning to Online Learning <https://www.covid19studyonline.unsw.edu.au/>
- Guide to Online Study <https://student.unsw.edu.au/online-study>
- Lecture recordings: <https://student.unsw.edu.au/lecture-recordings>
- Key Dates <https://student.unsw.edu.au/dates>
- UNSW Student Life Hub <https://student.unsw.edu.au/hub#main-content>
- Student Support and Development <https://student.unsw.edu.au/support>
- IT, eLearning and Apps <https://student.unsw.edu.au/elearning>
- Student Support and Success Advisors <https://student.unsw.edu.au/advisors>
- Equitable Learning Services <https://student.unsw.edu.au/els>

# Assessment

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1. Continuous Assessment	20%
2. Mid-Term Assessment	20%
3. End-Term Assessment	20%
4. Final Exam	40%

## Continuous Assessment

This consists of regular short online assessments based on the identification of structures in images as well as theoretical content, the question of this assessment will assess contents of the previous **week/s**. It provides students with regular feedback on their mastery of each topic. **Please note, only the 5 highest marks you score in these assessments will count for the final assessment mark.**

## Mid-Term Assessment

This assessment encompasses the identification of structures in images as well as theoretical concepts.

## End-Term Assessment

This assessment encompasses the identification of structures in images as well as theoretical concepts.

## Final Exam

A single final exam worth will be held during the formal examination period. This assesses student's mastery of the course content and ability to apply this knowledge to functional and clinical contexts through problem-solving.

Final exam period for Term 3, 2021 is 26 November to 9 December 2021. Supplementary exam period for Term 3, 2021 is 10 January to 14 January 2022.

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# ANAT2511- course schedule – T3- 2021

		Self-Directed Activities	Assessments	Online lecture 1	Online Workshop 1	Online lecture 2	Online Workshop 2	Formative Activities
		Watch previous years recorded lectures, read lecture slides for the week	Monday 9 - 11 am	Tuesday 1 – 2pm	Wednesday 9-11am	Wednesday 11am - 12 noon	Friday 11am – 1pm	
<b>W0</b>	06-September-2021	Introduction to Anatomy sessions and activities						
<b>W1</b>	13-September-2021	Skeletal Anatomy and Epithelial & Connective Tissues	Online drop-in and introduction session	1.1 Skeletal Anatomy	1.1 Axial Skeleton	1.2 Epithelial and Connective Tissue Histology	1.2 Epithelial and Connective Tissue Histology	Moodle Quiz
<b>W2</b>	20-September-2021	Muscular Anatomy and Bones, cartilage, and muscle Histology	Continuous assessment quiz	2.1 Muscular system Anatomy	2.1 Muscular System Anatomy	2.2 Bones, cartilage, and muscle Histology	2.2 Bones, cartilage, and muscle Histology	Moodle Quiz
<b>W3</b>	27-September-2021	Central Nervous System and Nervous tissue	Continuous assessment quiz	3.1 Central Nervous System Anatomy	3.1 Central Nervous System Anatomy	3.2 Nervous Tissue Histology	3.2 Nervous Tissue Histology	Moodle Quiz
<b>W4</b>	04-October-2021	Peripheral nervous system Anatomy and Special Senses	Continuous assessment quiz - Public holiday - will run on Tuesday 5th Oct same time	4.1 Peripheral nervous system	4.1 Peripheral nervous system	4.2 Special Senses Anatomy	4.2 Special Senses Anatomy	Moodle Quiz
<b>W5</b>	11-October-2021	Cardiovascular System and tissue	Continuous assessment quiz	5.1 Cardiovascular System Anatomy	5.1 Cardiovascular System Anatomy	5.2 Cardiovascular Histology	5.2 Cardiovascular Histology	Moodle Quiz
<b>W6</b>	18-October-2021	Flexiweek – Study for Midterm Assessment & start on Week 7 Self-Directed Activities						
<b>W7</b>	25-October-2021	Respiratory Systems	Midterm Assessment	7.1 Respiratory Systems Anatomy	7.1 Respiratory Systems Anatomy	7.2 Respiratory Histology	7.2 Respiratory Histology	Moodle Quiz

<b>W8</b>	01-November-2021	Digestive System	Continuous assessment quiz	8.1 Digestive System Anatomy	8.1 Digestive System Anatomy	8.2 Digestive System Histology	8.2 Digestive System Histology	Moodle Quiz
<b>W9</b>	08-November-2021	Urinary Systems	Continuous assessment quiz	9.1 Urinary System Anatomy	9.1 Urinary System Anatomy	9.2 Urinary System Histology	9.2 Urinary System Histology	Moodle Quiz
<b>W10</b>	15-November-2021	Reproductive Systems	<b>Endterm Assessment</b>	10.1 Reproductive System Anatomy	10.1 Reproductive System Anatomy	10.2 Reproductive System Histology	10.2 Reproductive system Histology	Moodle Quiz
	22-November-2021	<b>STUDY PERIOD</b>						
	26-November-2021	<b>EXAM PERIOD</b>						
	10/01/2022	<b>SUPPLEMENTARY EXAM PERIOD</b>						

# Ethical behaviour and human remains

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In this course, you may have the opportunity to study human anatomical specimens. Each year, people donate their bodies to UNSW via a Bequeathal Program so that you and your colleagues can learn about the human body. The donations are provided through the extraordinary generosity of the public (our donors and their families). This is a special privilege afforded very few people. By law, responsibility to the donor and their family members, and as a matter of good ethical practice you must treat all human remains with great respect and care (see below). The University operates the Bequeathal Program under the Code of Practice noted below, which all students are required to adhere to.

## Code of Practice:

The University recognises the magnitude of the contribution made by those who donate their bodies for the teaching of anatomy, and it is committed to treating the human remains entrusted to its care with the utmost respect and professionalism. In keeping with this commitment, the University requires its employees and students to uphold all legal, public health, and ethical standards associated with the handling of bodies and human tissue samples. Any activity which undermines its ability to meet UNSW's legislative obligations, or which devalues the contribution made by those who donate their bodies for the purposes of the teaching of anatomy to students will be in breach of this policy and subject to further action.

See [medalsciences.med.unsw.edu.au/students/undergraduate/advice-students#Practicals](https://medalsciences.med.unsw.edu.au/students/undergraduate/advice-students#Practicals)

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

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

1. In this course, you may be able 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/dicolour 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.



Student Risk Management Plan

Hazards	Risks	Controls
<p><b>Physical</b> Cold temperature (16°C) Sharp bone/plastic</p> <p><b>Biological</b> Fungi, bacteria (tetanus), hepatitis B and C</p> <p><b>Chemical</b> Formaldehyde Methanol 2-phenoxyethanol</p>	<p>Cold Penetrating wound of foot</p> <p>Infection</p> <p>Corrosive/Flammable Irritant/toxic Irritant</p>	<ul style="list-style-type: none"> <li>• Wear laboratory coat over appropriate warm clothing</li> <li>• Wear enclosed shoes with full coverage of the dorsum of the foot</li> <li>• Have appropriate immunisation</li> <li>• Do not eat, drink, or smoke in the Gross Anatomy Lab</li> <li>• Do not place anything (e.g., pens, pencils) into your mouth</li> <li>• Use disposable gloves when handling wet specimens and do not cross-contaminate models or bones with wet specimens</li> <li>• Always wash hands with liquid soap and dry thoroughly with disposable paper towel before leaving</li> <li>• Low concentrations of chemicals used</li> <li>• Chemicals used in well ventilated area</li> <li>• Safety Data Sheets for chemicals available in the laboratory</li> </ul>

Personal Protective Equipment required

 Closed in Footwear	 Lab. Coat	 Gloves	
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Emergency Procedures

In the event of an alarm sounding, stop the practical class and wait for confirmation to evacuate from demonstrators. Then wash your hands and pack up your bags.  
Follow the instructions of the demonstrators regarding exits and assembly points.

Clean up and waste disposal

- Cover wet specimens with the towels provided. Make sure that towels do not hang over the edge of the table, because this allows fluid to drip onto the floor. Fluids on the floor are a major safety hazard and should be reported to staff immediately.
- Replace stools under the tables in your cubicle.
- Remove your gloves and dispose in the biowaste bins provided.
- Wash your hands and instruments thoroughly with the soap provided and dry your hands with the paper towel.
- Remove your laboratory coat when you leave the dissecting room.

Ethics Approval

This type of practical has been previously considered and approved by the UNSW Human Research Ethics Advisory Panel (HC180115)

Declaration

I have read and understand the safety requirements for this practical class, and I will observe these requirements.

Signature:.....Date:.....

Student number: .....