# Table of Contents

Table of Contents ........................................................................................................... 2  
INTRODUCTION ............................................................................................................. 3  
ESSENTIAL ADMINISTRATIVE INFORMATION ........................................................... 3  
UNIT SYLLABUS ............................................................................................................. 3  
UNIT COORDINATOR & TEACHING STAFF ................................................................. 3  
LEARNING OUTCOMES ................................................................................................ 4  
LEARNING ACTIVITIES ................................................................................................. 4  
STUDENT FEEDBACK .................................................................................................... 5  
LEARNING RESOURCES ............................................................................................... 5  
TEXT BOOK .................................................................................................................. 5  
Recommended Texts: ..................................................................................................... 6  
ASSESSMENT DETAILS ................................................................................................ 7  
Tutorial quizzes .................................................................................................................. 7  
Practical tests ................................................................................................................... 7  
Final written examination ............................................................................................... 7  
Supplementary Examinations ......................................................................................... 8  
Deferred Assessment ..................................................................................................... 8  
ADDITIONAL INFORMATION ....................................................................................... 8  
Requirements to complete the unit .................................................................................. 8  
Other Requirements: ..................................................................................................... 8  
STUDENTS’ RIGHTS AND RESPONSIBILITIES ......................................................... 8  
Laboratory safety and responsibilities .......................................................................... 8  
Unit Study Calendar: Lecture, Tutorial and Practical Program ...................................... 10
INTRODUCTION

Welcome to Anatomy 232.

This unit aims to introduce you to the way in which the human body is put together and the interrelationship between structure and function. We will not only be looking at the bones, joints, muscles, nerves and blood vessels in the upper and lower limb but also conceptualizing how they interact together to produce movement in everyday tasks. Even after many years of teaching human anatomy I am still in awe of its brilliance I hope you feel the same by the end of the semester.

ESSENTIAL ADMINISTRATIVE INFORMATION

<table>
<thead>
<tr>
<th>Unit Title</th>
<th>Anatomy 232</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Study Package Number</td>
<td>7689</td>
</tr>
<tr>
<td>Unit Coordinator</td>
<td>Simon Mahoney</td>
</tr>
<tr>
<td>Teaching Area</td>
<td>Biomedical Sciences</td>
</tr>
<tr>
<td>Credit Value</td>
<td>25</td>
</tr>
<tr>
<td>Mode(s) of study</td>
<td>Internal</td>
</tr>
<tr>
<td>Pre--requisites</td>
<td>Integrated Systems Anatomy and Physiology 100</td>
</tr>
<tr>
<td>Additional requirements</td>
<td>Anatomy Authorisation for Curtin University</td>
</tr>
<tr>
<td>Core Unit status</td>
<td>This unit is a required (core) unit in the Human Biology (Preclin) course. You may be terminated from the course if you fail this unit twice.</td>
</tr>
<tr>
<td>Result Type</td>
<td>Grade and Mark eg 5, 59</td>
</tr>
<tr>
<td>Ancillary Fees and Charges</td>
<td>All fee information can be obtained through the Fees Centre. Visit <a href="http://www.fees.curtin.edu.au/index.cfm">http://www.fees.curtin.edu.au/index.cfm</a> for details.</td>
</tr>
<tr>
<td>Unit Website</td>
<td>If this unit has a website you can access the unit materials via <a href="http://oasis.curtin.edu.au">http://oasis.curtin.edu.au</a></td>
</tr>
<tr>
<td>Tuition Pattern</td>
<td>2 hour lecture Wednesday, 1 hour lecture/tutorial Wednesday, 2 hour practical Thursday</td>
</tr>
<tr>
<td>Study Load</td>
<td>5 hours of contact per weeks and an extra 5 hours per week of preparation and follow-up for classes</td>
</tr>
</tbody>
</table>

UNIT SYLLABUS

Anatomy 232 explores the principles of biomechanics: specifically levers, torques, force vectors and centre of gravity, as related to the human body. The unit explores, in detail, the functional anatomy of the upper and lower limb and their associated girdles. Applications of anatomical and biomechanical principles in analysis of upper and lower limb function and dysfunction will also be covered.

UNIT COORDINATOR & TEACHING STAFF

Every unit has a person who is responsible for the overall administration of that unit. This person is the Unit Coordinator, which is myself, Simon Mahoney. I will be teaching the lecture content and tutorials and the practical sessions. If you would like assistance with your learning or are having difficulties in any area of the unit and you need some help, please don’t hesitate to contact me by email, phone or drop by my office. My teaching timetable varies from week to week so you may or may not find me in my office. If you would like to secure a specific time please contact me and we can make an appointment to chat.
LEARNING OUTCOMES

On successful completion of this unit you will be able to:

1. Describe in detail the structures, relationships, and integrated functions of the skeletal, articular, muscular, nervous, cutaneous and vascular components of the shoulder girdle and upper limb, pelvic girdle and lower limb.

2. Apply principles of torque, levers, vector analysis and centres of gravity to particular anatomical structures, movements and postures of the human body.

3. Analyse common movement patterns and postures of the upper and lower limbs in terms of the specific muscles involved, their types of contractions, and their mechanical (dis)advantages.

4. Apply principles of anatomy and biomechanics in problem-solving case study exercises related to common functions and dysfunctions of the upper and lower limbs.

5. Relate surface landmarks of the upper and lower limbs, and limb girdles, to underlying structures.

LEARNING ACTIVITIES

The unit uses a layering process to give you plenty of opportunities to work with the material presented. You hear about it in the lectures, look at diagrams and read the related references, then you are quizzed on it in the tutorials before covering the same material with specimens in the lab. You will not be directed to specific readings so it is up to you to follow up with the lecture material using the textbook, so that you feel confident with the topic prior to the practical session. If you work consistently each week you will not need to cram at the end of the semester. The emphasis is on active participation, which is harder work than passive, but also more effective for learning. The more you put into classes the more you will gain from them.

Lectures

The A232 lectures discuss what you need to know and understand prior to the tutorial and practical class related to that material. You can download a lecture outline from FLECS-bb prior to the lecture to help you take more effective notes but these outlines do not replace the lectures. You will gain most from the lectures if you skim-read the relevant textbook section prior to coming to the lecture. You should read the text again following the lecture and clarify your understanding of the material before going to the tutorial and prac classes. You should by now be able to take effective lecture notes but if you need help working with your lecture notes, ask me for some ideas, or take some the Study Plus modules available through the TLC. During the lectures questions or comments are welcomed at any time. You are also welcome to record lectures if you wish.

Tutorials

The tutorials are used to consolidate the lecture material or for quizzes and feedback sessions. The idea of the tutorial is to help you review lecture work and prepare for the practical classes. You will be expected to have reviewed your lecture material before you attend the Wednesday tutorials.

Practicals

Practical classes provide an opportunity to use models and cadaver and skeletal material to test your theoretical understanding of what you have been given in lectures, and worked with in tutorials.
practical notes lead you through checklists of structures to find, and ask you related functional questions. You should not sit in the practical classes copying things from the textbook. You should come to the practical class well prepared to view the specimens and make the most of the available time to consolidate your learning and ask questions. You should use the practical as a chance to test yourself and determine whether you really understand what we have done in the lectures so make the most of the opportunity. It’s easier in the long run to put in the work on the day rather than have to do it later at home without the specimens or a tutor to help.

Absence

Each scheduled class is an opportunity to get closer to your career goal and to get better at anatomy. It is impossible to exactly replicate what you miss in a class and the 12-week semester means there isn’t a lot of catch-up time, so try to resist skipping a class just because you feel a bit fed up and can’t be bothered. You will still have to put in the time and without help of staff or other students so it’s not an easy option. If you can’t avoid missing a class please let me know tell me your catch-up strategies.

STUDENT FEEDBACK

For Semester 1, 2010 eVALUate is open for student feedback from the 17th May – 27th June

For other study periods see http://evaluate.curtin.edu.au/info/dates.cfm

We welcome your feedback as one way to keep improving this unit. Later this semester, you will be encouraged to give unit feedback through eVALUate, Curtin’s online student feedback system (see http://evaluate.curtin.edu.au).

LEARNING RESOURCES

Web-based resources

Once you have enrolled in this unit you will have access to the FLECS-bb site. Here you will find electronic copies of the unit outline, lecture outlines, exam practice questions and any information relevant to the unit. You can also email me or post a comment on the bulletin board. FLECS-bb contains a link to the university iLectures site and where lectures are uploaded after they have been given. Due to copyright restrictions, the diagrams used in the lectures are sometimes not all available in the lecture outlines. However, similar diagrams are in your textbooks.

TEXT BOOK

Essential texts

You will need to have access to an anatomy textbook that is more detailed than your first year text and deals with the body in a regional way i.e. upper limb, lower limb, thorax etc instead of musculoskeletal system which is more systemic. There are not many currently being published so I have chosen the same textbook recommended for the A233 unit most of you will go onto in semester two which is the best from a restricted field, in consultation with other anatomy lecturers at Curtin. However, if you have access to older copies of anatomy texts you may be able to manage with these. If you are not sure, ask me to check the textbook over for you. Because I shall not be providing specific references to the text, as long as you have access to a detailed regional anatomy text that should be sufficient but there is an alarming amount of terminological variation between different anatomy textbooks so it is best if we are all using the same text. An older version of Moore and Dalley is ok, especially the 5th which you can probably find in second-hand bookshops.

The first textbook I have included below by Neylon and Wildsmith “Functional anatomy of the upper limb” is highly recommended as it covers all the areas we will be looking at in the upper limb and is very easy to read. The invoice for purchasing this book will be available on blackboard once organised

Anatomy text
Anatomy 232 Semester 1 2011


You will also need access to an atlas. There are copies in the lab for you to use in class but it's very helpful to have one to refer to when you are studying at home. I have made some suggestions below of currently-available atlases but again older versions or editions will do the job just as well. Ask me if you are not sure. The text and atlas will also be useful for Reproductive Biology, Anatomical Techniques and Neuroscience in third year so they are worth purchasing. I should note that Moore and Dalley Clinically Orientated Anatomy is the standard postgraduate medicine textbook if you are thinking along those lines.

**Anatomy Atlas**


OR


An alternative is Netter F.H., 1997. *Atlas of Human Anatomy*. 2nd edn. Novartis. Note that this text has heavily (over)labelled figures. The figures themselves are generally very good, and they can be obtained at a significantly higher price on CD, which offers the option of adding or removing labels at will. See the “Netter Presenter: Human Anatomy Collection Version 2.0. Icon Learning Systems.”

**Recommended Texts:**

You do not have to purchase the following textbooks but you may like to refer to them.


**ASSESSMENT DETAILS**

<table>
<thead>
<tr>
<th>Assessment Tasks</th>
<th>Worth</th>
<th>Due</th>
<th>Unit Learning Outcome Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial quiz 1</td>
<td>5%</td>
<td>19/03/11</td>
<td>ULO 2 and part of 1 and 5 Tests material from wks 1-3</td>
</tr>
<tr>
<td>Practical test 1</td>
<td>20%</td>
<td>09/04/11</td>
<td>Parts of ULO 1, 2, 3, 4 and 5 Tests material from wks 1-8</td>
</tr>
<tr>
<td>Tutorial quiz 2</td>
<td>10%</td>
<td>07/05/11</td>
<td>ULO 2 and parts of 1 and 5 Tests material from wks 9-11</td>
</tr>
<tr>
<td>Practical test 2</td>
<td>20%</td>
<td>21/06/11</td>
<td>ULOs 1 to 5 inclusive Tests material from whole semester</td>
</tr>
<tr>
<td>Final written exam</td>
<td>45%</td>
<td>During exam week</td>
<td>ULOs 1 to 5 inclusive</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tutorial quizzes**

*Tutorial Quizzes 1 and 2 worth 15% in total*

These short-answer tests are based on the above designated lecture or practical material. They are designed to give feedback to you and to me about the effectiveness of your study program and give you a chance to address areas of concern during the semester. If you are unable to attend the quiz you must provide a medical certificate or equivalent in order to be given a deferred quiz. The *marking criteria* will be given with the answers and you will have the chance to check and question the marking key with me when you receive your quiz papers back.

**Practical tests**

*Practical tests 1 and 2 worth 40% in total*

They will test your ability to recognise structures from the specimens you have worked with in class, and to answer questions relating to those structures. While there is a theoretical component, the emphasis is on recognition of structures and their relationships. The dates of the practical tests are shown above and in the practical schedule at the end of this unit outline. I will tell you about the set-up of the tests and the distribution of material to be tested closer to the time. The tests are marked and returned within a week, and we go through the answers in class to give you useful feedback on which areas you performed poorly. If you wish to discuss any aspects of the tests you should do so as soon as possible. If you are unable to attend the practical test you must provide a medical certificate or equivalent in order to be given a deferred test. The *marking criteria* will be given with the answers and you will have the chance to check and question the marking key and your individual marks with me when you receive your prac test papers back.

**Final written examination**

*Worth 45% in total*

The final written examination paper covers the whole semester’s work. The emphasis in the paper will be on integration of material, ascribing function to structure and explaining how things fit together. It will contain some short-answer questions and longer integrated answer questions. I will provide some examples of similar test questions closer to the end of semester.
Supplementary Examinations
Supplementary examinations are awarded only at the discretion of the Board of Examiners. The aim of a supplementary examination is to correct minor problems or deficiencies in the initial assessment and not to gain extra study time or correct major problems. The number of supp. examinations awarded is kept to a minimum for any one examination period and course of study. If you are awarded a supplementary examination it will be indicated on the official Curtin examination result statement posted to all students. It is your responsibility to check your status, either in person or by phone.

Deferred Assessment
Deferred of a final written examination is not automatic. Students may be permitted by the relevant Board of Examiners to defer an examination or other assessment where circumstances outside their control have arisen. However, a student’s overall performance may be taken into account in granting permission to defer an examination. Applications for deferment on health grounds or as a result of extenuating circumstances must be submitted not later than seven (7) days after the end of the relevant examination period or assessment date during the semester. Detailed medical certificates should be attached to the application where appropriate. The prescribed application form may be obtained either from Admission and Student Records or the Course Administrator in your school. Completed forms must be submitted to the School of Biomedical Sciences Course Administrator.

ADDITIONAL INFORMATION
Requirements to complete the unit
There are some skills and other requirements that we assume you have prior to enrolling in this unit. The content covered in A 232 assumes that you:
1. Have good written and verbal communication skills.
2. Can effectively source, access and use library resources (printed and electronic).
3. Understand what is meant by plagiarism and know how to avoid it
4. Have completed the required prerequisite units.

Other Requirements:
1. White Laboratory Coat and closed-in footwear.
2. Anatomy Authorisation valid for Curtin University. If you are not sure see Amanda
3. Textbook access.
4. Access to blackboard.

STUDENTS’ RIGHTS AND RESPONSIBILITIES
It is the responsibility of every student to be aware of all relevant legislation, policies and procedures relating to their rights and responsibilities as a student. These include:
- the Student Charter,
- the University’s Guiding Ethical Principles,
- the University’s policy and statements on plagiarism and academic integrity,
- copyright principles and responsibilities,
- the University’s policies on appropriate use of software and computer facilities,
- students’ responsibility to check enrolment,
- deadlines, appeals, and grievance resolution,
- student feedback,
- other policies and procedures
- electronic communication with students

See www.students.curtin.edu.au/administration/responsibilities.cfm for comprehensive information on all of the above.

Laboratory safety and responsibilities
The anatomy facility here at Curtin University answers to the Health Department of Western Australia as well as to the University itself. Therefore we are required to observe certain rules for two reasons – firstly to comply with the anatomy act, and secondly to comply with university safety procedures. For
these reasons there are strict rules which must be adhered to while you are in the anatomy facility during practical classes, exams or revision sessions. Failure to observe the rules may result in you being asked to leave a class, and possibly being excluded from the course.

1. You must wear a white laboratory coat, which can be buttoned up at the front. This coat must be mid-thigh length or longer and not show conspicuous symbols or advertising.
2. You must wear closed-in shoes – slip-ins, clogs or sandals are not acceptable.
3. Mobile phones must not be used in the anatomy facility. If you need to make or receive a call, leave the facility and do so in the foyer.
4. No photographs or digital images of specimens (wet, bone or plastinated) may be taken without express permission from the School of Biomedical Sciences anatomy staff.
5. No material may be removed from the anatomy facility without permission of the Licence-holder - Anatomy.
6. No eating, drinking (even bottled water) or chewing is allowed during laboratory classes
7. Hair should be tied back to prevent cross-contamination
8. Protective eyewear is available for loan if you wish to use it – it is not required but is free of charge to those wishing to wear protective eyewear. Although we take all precautions to minimize the fumes from the formalin-preserved material, they can be irritant.
9. Protective latex gloves are supplied free of charge to those wishing to use them. Although the preservation of the specimens ensures there is no microbiological contamination, the chemicals are very drying to the skin and we suggest you wear protective gloves to handle the specimens
10. Bags should be left outside the lab in the shelves provided but carry your valuables with you into class. These shelves are cctv-monitored but thefts have occurred in the past.

In your first practical class you will be asked to read and sign a document acknowledging you have read and understood your responsibilities in the anatomy laboratory.

Respect must be shown to the bequeathed material at all times. Some students find dealing with human cadaver material quite challenging and we appreciate that, but we will not tolerate disrespectful behaviour in any form. If you have problems dealing with the lab material it is your responsibility to see Simon as soon as possible.
### Unit Study Calendar: Lecture, Tutorial and Practical Program

Lectures Wednesday 10am-12pm (408.2038), Tutorial Wednesday 4-5 pm (401.001) and Practical Thursday 1 of 12-2pm, 2-4pm OR 4-6pm (404:117)

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Lecture Topic</th>
<th>Tutorial</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27th Feb</td>
<td>Intro, muscle action and biomechanics</td>
<td>Review biomechanics</td>
<td>Anatomical terms revision and biomechanics</td>
</tr>
<tr>
<td>2</td>
<td>5th March</td>
<td>Shoulder complex joints and associated movements</td>
<td>Movement of the shoulder joint - basic</td>
<td>Shoulder complex joints</td>
</tr>
<tr>
<td>3</td>
<td>12th March</td>
<td>Musculature of the shoulder complex</td>
<td>Movement of the shoulder joint - advanced</td>
<td>Musculature of the shoulder complex</td>
</tr>
<tr>
<td>4</td>
<td>19th March</td>
<td>Brachial plexus and upper limb blood supply</td>
<td>QUIZ 1 (wk 1-3 inclusive)</td>
<td>Brachial plexus and upper limb blood supply</td>
</tr>
<tr>
<td>5</td>
<td>26th March</td>
<td>Arm (brachium) &amp; elbow</td>
<td>Quiz review &amp; feedback</td>
<td>Arm (brachium) &amp; elbow</td>
</tr>
<tr>
<td>6</td>
<td>2nd April</td>
<td>Forearm and hand</td>
<td>Grips and hand movement</td>
<td>Forearm and hand</td>
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<tr>
<td>7</td>
<td>9th April</td>
<td></td>
<td>Tuition Free Week</td>
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<tr>
<td>8</td>
<td>16th April</td>
<td>Pelvis hip joint</td>
<td>Practical test preparation questions</td>
<td>Practical Test 1 (wk 1-6)</td>
</tr>
<tr>
<td>9</td>
<td>23rd April</td>
<td>Lumbosacral plexus</td>
<td>Practical test feedback</td>
<td>Pelvis, hip &amp; lumbosacral plexus</td>
</tr>
<tr>
<td>10</td>
<td>30th April</td>
<td>Thigh &amp; knee</td>
<td>Lumbosacral plexus</td>
<td>Thigh &amp; knee</td>
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<tr>
<td>11</td>
<td>7th May</td>
<td>Leg &amp; foot</td>
<td>QUIZ 2 (wk 8-11)</td>
<td>Leg &amp; foot</td>
</tr>
<tr>
<td>12</td>
<td>14th May</td>
<td>GAIT</td>
<td>Quiz review &amp; feedback</td>
<td>GAIT</td>
</tr>
<tr>
<td>13</td>
<td>21st May</td>
<td>Revision and exam information</td>
<td>Practical test revision</td>
<td>Practical Test 2 (whole semester content)</td>
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<tr>
<td>14</td>
<td>28th May</td>
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<td></td>
<td>Study Week</td>
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<tr>
<td>15</td>
<td>4th June</td>
<td></td>
<td></td>
<td>Examinations</td>
</tr>
<tr>
<td>16</td>
<td>11th June</td>
<td></td>
<td></td>
<td>Examination</td>
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</tbody>
</table>