Course Code:	1017MSC
Course Name:	Anatomy & Physiology Systems II
Semester:	Trimester 1, 2019
Program:	Diploma of Health Sciences
Credit Points:	10
Course Coordinator:	Dr Jos de Schepper
Document modified:	17 December 2018

Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.

Dr Jos de Schepper jos.deschepper@staff.griffithcollege.edu.au

Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the “myTimetable” link.

Prerequisites

To successfully enrol in this Course, you must provide evidence that you have completed the following Courses:

- 1014MSC - Cells, Tissues & Regulation
- 1016MSC - Anatomy & Physiology Systems 1

Brief Course Description

Anatomy & Physiology Systems II is a 10 Credit Point course situated within the second semester of the Diploma of Health Science. The Diploma of Health Science is designed to provide students with a pathway to:

- further university studies in the Health Sciences, or
- direct employment

Within Anatomy & Physiology Systems II a number of major body systems will be discussed, integrating structure (anatomy) with function (physiology). This is a companion course to Anatomy and Physiology Systems I. With the cardiovascular, respiratory, renal and digestive systems, description of human anatomy will precede physiological study, drawing on experience in laboratories as well as lectures. The functions of blood, and the anatomy and functions of the immune system will be covered. This course will provide the necessary experience and learning for students destined to undertake advanced studies in anatomy and in physiology, and will develop analytical laboratory skills.

Rationale

Aims

The primary aims of Anatomy & Physiology Systems II are to:

- address functional anatomy of the cardiovascular system and broad aspects of basic cardiovascular physiology, including anatomical and experimental laboratory investigation
- address basic respiratory system anatomy and physiology, incorporating blood and gas transport, including anatomical and experimental laboratory investigation
- address basic renal and urinary system anatomy and physiology and its role in water balance and homeostasis
- address the basic structure of the gastrointestinal tract and the physiology of digestion and absorption
- address basic blood physiology, lymphatics & immune systems

In addition to learning about normal structure and function, and although a comprehensive account would not be appropriate at this level, the course also aims to discuss basic pathophysiology of some of the major societal problems, including atherosclerosis and myocardial infarct, asthma and other obstructive disorders.

A related but separate course aim is to provide students with the opportunity to investigate the function of major body systems in the laboratory, gaining practical and analytical skills in experimental physiology, and in histology and related disciplines.

Learning Outcomes

After successfully completing this course you should be able to:

1. demonstrate understanding of the structure and function of the cardiovascular system;

2. describe and discuss the structure and function of the lymphatics and their role in tissue fluid balance;

3. demonstrate understanding of the composition and function of blood, including the function and structure of haemoglobin;

4. describe and discuss the organisation and mechanics of the respiratory system;

5. describe and discuss the renal system;

6. demonstrate an understanding of the digestive system;

7. describe and discuss the immune system;

8. demonstrate competency in laboratory procedures including animal dissection, microscopy, human and animal tissue handling, and identification of anatomical structures on human cadaveric material.

Texts and Supporting Materials

Required Text:

Marieb, E.N. & Hoehn, K. (2016). *Human Anatomy and Physiology,* 10th Edition. San Francisco: Pearson Benjamin Cummings.

Marieb, E.N. & Mitchell, S. (2015). *Laboratory Manual for Foundation year health.* San Francisco: Pearson Benjamin Cummings.

Laboratory Notes – Trimester 2, 2018. 1017MSC (Anatomy and Physiology Systems II).

Lab Workbook available on the course site in the Griffith College Student Portal.

Required Support Materials (available from Griffith University Campus Bookshop G40):

- Laboratory gown
- Timer
- Marker pens
- Safety Glasses

Please note: It is compulsory for Diploma of Health Science students to purchase a laboratory gown. If you forget your laboratory gown, you may purchase a disposable lab coat (~$4) from the Griffith University Campus Bookshop (G40)

Organisation and Teaching Strategies

The anatomical and physiological components studied will be closely integrated. At this introductory level it is not meaningful to discuss one without the other. Gross anatomy of the major systems will be covered, but in both laboratories and lectures some attention will also be paid to histology, and cellular structure and function.

Students will also repeat some of the classical experiments in physiological science, such as manipulation and recording muscle twitches in whole skeletal muscle preparation, and heart rate and force from a heart preparation. Students will also consequently learn about collection and analysis of experimental data.

Lecture notes, lecture slides and laboratory requirements, together with advice and/or links to study skill assistance etc. will be available on the Griffith College Student Portal.

Class Contact Summary

Lectures: 3 hours per week (week 1 to 12).
Workshops: 1 hour per week (week 1 to 12)
Laboratories: 3 x 2 hour laboratory sessions (weeks 1, 5, & 7).
Practicums: 4 x 3 hour practicums (weeks 4, 6, 10, & 12). Lab practicums in weeks 6 and 12 will include the Mid-trimester and Final Lab examinations.

Note: **ATTENDANCE AT LABORATORIES AND PRACTICUMS ARE COMPULSORY.** These practical sessions provide learning activities that are essential to the learning outcomes in this course. Students will work in small groups to conduct experiments and develop problem solving skills. Students are expected to attend their scheduled laboratory class except in extenuating circumstances.

An attendance roll will be maintained for all laboratories. Students must read the Laboratory Safety requirements prior to attending their first laboratory, and comply with the dress and behaviour codes as described; Students **MUST WEAR LABORATORY COATS AND CLOSED IN SHOES FOR ALL LABORATORIES.** Students will be required to bring their laboratory manuals to laboratories. Content covered in these laboratories complements lecture material and hence will be assessed in both laboratory examination and examinations.

IMPORTANT: All students must undertake the on-line health and safety training prior to being permitted entry into laboratories.

Attendance
100% attendance is expected for all classes. You are reminded that your attendance in class will be marked for all elements. To receive full attendance, you must be present in the classroom on all occasions.

You are expected to bring work done at home to class for group and individual discussion. Further development of ideas is expected during workshop time.

Preparation and Participation in Class
You are expected to read your text book and the lecture notes plus attempt any tutorial/workshop exercises before class so that each week you can actively contribute to your learning and the learning of others in your classes. You are expected to ask and answer questions and to initiate discussions and stimulate debate in group and class situations.

Consultant Times
Attendance during consultation times is optional but you are encouraged to use this extra help to improve your learning outcomes.

Course Materials
Lecture notes will be made available to you on the Griffith College Student Portal website and you are advised to print these out and bring them to each class so that extra notes can be added.

Independent Study
Independent study requires that you spend time outside classes engaged in research necessary to complete your assignments. Research includes reading the required text books, using library and internet facilities. For this 10 CP course, you will need to spend at least 10 hours per week engaged in activities that will help your learning and fulfil the course objectives. Thus, provided you have well used the formal contact hours each week, you would then complete any remaining hours engaged in independent study.

Program Progression
You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, and that GPA is maintained at equal to or greater than 3.5 in any semester [please see Griffith College Policy Library - Program Progression Policy - for more information].

Content Schedule

Details of laboratory aims and activities can be found in the Anatomy and Physiology Systems II Laboratory Notes booklet on the course website.

Weekly Teaching Schedule

Week	Topic	Activity	Readings
1	Introduction to Anatomy and Physiology II	Lecture	Marieb Chapters 18 & 19
	Cardiovascular system overview	Lecture	
	ECGs and myocardial contraction	Lecture	
	Introduction to the course and assessment	Lecture	
	Functional anatomy of heart	Lecture	
	Laboratory : Animal Heart Dissection (LAB 1)	Laboratory	Lab note-guide and (Marieb Ex 30)
2	Anatomy and function of arteries	Anatomy and function of arteries	
	Overview: blood vessels	Lecture	

	Determinants of cardiac output, Starlings Law	Lecture	Marieb Chapters 18 & 19
	Workshop	Workshop	
3	Functional anatomy of capillary networks	Lecture	
	Anatomy and function of veins	Lecture	
	Determinants of blood pressure	Lecture	Marieb Chapters 18 & 19
	Workshop	Workshop	
4	Workshop	Workshop	
	Review. CV physiology	Lecture	
	Haemodynamics and fluid balance	Lecture	
	Mid trimester exam Part 1		**Covering materials which have been taught on week 1, 2, and 3 from chapter 18 &19**
	Lymphatics system	Lecture	Marieb Chapters 20
	Cardiovascular and Respiratory system Anatomy (LAB 2)	Practicum	Lab note-guide and (Marieb Ex 30, 32, 36)
5	Composition and function of blood	Lecture	Marieb Chapter 17
	Workshop	Workshop	
	Laboratory: Blood pressure/ECG (LAB 3)	Laboratory	Lab note-guide and (Marieb Ex 33A)
6	Function of bronchi and alveoli	Lecture	
	Organisation of the respiratory system	Lecture	Marieb Chapter 22
	Gas transport	Lecture	
	Workshop	Workshop	
	Mid-trimester lab exam Part 1		**Covering the lab 1, 2, and 3**

7	Partial pressures	Lecture	
	Control over ventilation	Lecture	Marieb Chapter 22
	Workshop	Workshop	
	Laboratory : Respiratory and renal system Physiology (LAB 4)	Laboratory	Lab note-guide and (Marieb Ex 41A, 40), (Marieb Ex 36)
8	Kidney, glomerular function	Lecture	
	Functional anatomy urinary tract	Lecture	Marieb Chapters 25
	Review renal role in homeostasis	Lecture	
	Workshop	Workshop	
	Mid-trimester Exam Part 2		**Covering materials which have been taught on week 4, 5, 6, and 7 from chapter 17, 20, 22, and 25.**
9	Renal medulla and water balance	Lecture	Marieb Chapters 25
	Workshop	Workshop	
10	Renal acid base balance	Lecture	Marieb Chapters 26
	Workshop	Workshop	
	Digestive and Urinary system Anatomy (LAB 5)	Practicum	
11	GI tract: Movement and secretion	Lecture	Marieb Chapters 23
	Pancreatic & hepatic function	Lecture	Marieb Chapters 23
	Gastrointestinal system	Workshop	
12	Immune system	Workshop	Marieb Chapters 21
	Workshop	Workshop	
	Final lab exam	**Laboratory**	**Covering materials of labs 1, 2, 3, 4 & 5**
13	**Final Exam**	**Examination**	**Covering material which have been taught on week 8, 9, 10, 11, and 12 from chapters 21, 23, 25, and 26**

Assessment

This section sets out the assessment requirements for this course.

Summary of Assessment

Item	Assessment Task	Weighting	Relevant Learning Outcomes	Due Date
1	Mid trimester laboratory exam	15%	1,2,3&4	Week 6
2	Mid trimester exam part 1	20%	1, 2 & 3	Week 4
	Mid trimester exam part 2	20%	1, 2& 3	Week 8
3	Final laboratory exam	15%	1, 2, 3, 4, 5, 6 & 8	Week 12
4	End of trimester exam *- Students achieve 40% or more to be awarded a pass in this assessment*	30%	3, 4, 5, 6 & 7	Exam Weeks

Assessment Details

1. Mid trimester lab exam

Rationale: To test students practical knowledge of the material emphasized in the lab environment
Assessment details: The 30 minute lab exam will consist of 30 questions and will require the identification of anatomical structures on various models and specimens. The questions will be based on material covered during the first three laboratory sessions. It will be held during lab time in week 6.
Marking criteria: The lab exam will be marked against established marking criteria

2. Mid-trimester Exams

Rationale: These in-trimester exams will be in two parts, with each including both multiple choice and short answer exam questions. These examinations are designed to assess the students' knowledge and understanding of the first seven weeks of lectures. Assessment details: In-trimester exam part 1: This written exam will consist of 50 multiple choice questions and 10 marks worth of short answer questions. Students will be assessed on course material which has been covered in weeks 1, 2, & 3. In-trimester exam part 2: This written exam will consist of 60 multiple choice questions and 10 marks worth of short answer questions. Students will be assessed on course material which has been covered in weeks 4, 5, 6 & 7.
Marking criteria: These two in-trimester examinations will be marked against established model answers and undergo a full moderation process.

3. Final laboratory Exam

Rationale: This exam is designed to assess the anatomy and physiology specifically covered in the lab component of the course Assessment details: This 30 minute exam will consist of 30 written and pin location questions in the lab setting Marking criteria: One mark awarded per correct answer. The Laboratory examination is marked against pre-moderated criteria.

4. End of trimester Exam

Rationale: This examination is designed to assess the students' knowledge and understanding of the material presented in weeks 8 – 12. Assessment details: This written exam will consist of 55 multiple choice questions and 25 marks worth of written questions. Marking criteria: The examination will be marked against established model answers and undergo a full moderation process.

Requirements to Pass this course

In order to pass this course and in addition to meeting the laboratory requirements, students must:

1. attend and attempt all assessment items, AND
2. obtain at least 40% in the final, End of trimester exam, AND
3. Achieve an overall course grade (sum of all assessments) of 50%

Submission and Return of Assessment Items

Normally you will be able to collect your assignments in class within fourteen [14] days of the due date for submission of the assignment.

Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

Extensions

To apply for an extension of time for an assessment item you must submit a written request to your lecturer via the Student Website at least 48 hours before the date the assessment item is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. medical certificate]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

Penalties for late submission without an approved extension

Penalties apply to assignments that are submitted after the due date without an approved extension. Assessment submitted after the due date will be penalised 10% of the TOTAL marks available for assessment (not the mark awarded) for each day the assessment is late. Assessment submitted more than five days late will be awarded a mark of zero (0) For example:

- > 5 minutes and <= 24 hours 10%
- > 24 hours and <= 48 hours 20%
- > 48 hours and <= 72 hours 30%
- > 72 hours and <= 96 hours 40%
- > 96 hours and <= 120 hours 50%
- > 120 hours 100%

Note:

- Two day weekends will count as one day in the calculation of a penalty for late submission.
- When a public holiday falls immediately before or after a weekend, the three days will count as one day in the calculation of a penalty for late submission.
- When two public holidays (e.g. Easter), fall immediately before or after, or one day either side of a weekend, the four days will count as two days in calculating the penalty for late submission.
- When a single public holiday falls mid-week, the day will not be counted towards the calculation of a penalty.

Please refer to the Griffith College website - Policy Library > Assessment Policy for guidelines and penalties for late submission.

Assessment Feedback

Marks awarded for assessment items will also be available on the on-line grades system on the Student Website within fourteen [14] days of the due date.

Generic Skills

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

Generic Skills	Taught	Practised	Assessed
Written Communication	Yes	Yes	Yes
Oral Communication		Yes	
Information Literacy		Yes	Yes
Secondary Research			
Critical and Innovative Thinking	Yes	Yes	Yes
Academic Integrity	Yes	Yes	Yes
Self Directed Learning		Yes	Yes
Team Work		Yes	
Cultural Intelligence			
English Language Proficiency		Yes	Yes

Additional Course Generic Skills

N/A

Additional Course Information

N/A

Academic Integrity

Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

Please ensure that you are familiar with the Griffith College Academic Integrity Policy; this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Academic Integrity Policy on the Griffith College website – Policy Library.

Risk Assessment Statement

This course follows Griffith College and Griffith University Workplace Health and Safety Laboratory guidelines.

The aim of workplace health and safety is to make sure that people do not get sick or injured at the workplace. The legislation dealing with this in Queensland is called the Workplace Health and Safety Act, 1995. Anyone who can affect workplace health and safety has an obligation under this Act.

As a student, you have an obligation to yourself and others to undertake activities in a safe manner. You must follow instructions which are provided for safety. You must not put yourself or anyone else at risk. Care especially needs to be taken when you are performing activities which can affect others.

Students must wear closed in shoes to all laboratory sessions for workplace health and safety reasons.

Note: For all Diploma level programs, Griffith College acknowledges content derived from Griffith University.