

LFS203 Integrated Physiology

School: School of Health - Biomedicine

2024 | Semester 1

UniSC Sunshine Coast
UniSC Moreton Bay

**BLENDED
LEARNING**

Most of your course is on campus but you may be able to do some components of this course online.

Please go to usc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

In Integrated Physiology you will further develop your knowledge and skills in human physiology. The emphasis in this course is to appreciate how homeostasis is achieved by the interplay between multiple systems, overseen by both neural and endocrine control. You will learn how the human body functions in a coordinated but complex way by studying the various cells, tissues and organs associated with the body systems. You will further develop skills in research and communicating science relevant to the biomedical discipline. This course will prepare you for further study into biomedical applications, including pathophysiology.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Online learning materials	2hrs	Week 1	13 times
Tutorial/Workshop 2 – The weekly online sessions allow you to engage with the theory content and work through problems on the course topics (1st hour) in a facilitated workshop. The second hour – weekly dropin - will be used for assessment assistance and any questions.	2hrs	Week 1	13 times
Laboratory 1 – Science wetlab with practical skill development	3hrs	Week 1	7 times
Tutorial/Workshop 1 – Small class tutorial with interactive, collaborative learning and case studies	2hrs	Week 2	6 times

1.3. Course Topics

- Nervous system
- Endocrine System
- Muscle Physiology
- Cardiovascular System
- Respiratory System
- Renal System
- Digestive System
- Reproductive system
- Physiology of Pregnancy and Foetal Development

2. What level is this course?

200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES	GRADUATE QUALITIES
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...
1 Demonstrate depth and breadth of knowledge in the discipline of human physiology relevant to the cells, tissues, organs and systems.	Knowledgeable
2 Demonstrate how the human body uses an integrated approach to coordinate bodily functions.	Knowledgeable Creative and critical thinker
3 Research, critically evaluate, and ethically present appropriate and relevant literature about human physiology in a creative and informative way.	Knowledgeable Creative and critical thinker Ethical
4 Apply knowledge of physiology to solve problems.	Knowledgeable Creative and critical thinker
5 Ethically collect, record, interpret, and communicate findings from experiments using physiology knowledge.	Empowered Ethical

5. Am I eligible to enrol in this course?

Refer to the [UniSC Glossary of terms](#) for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

LFS112

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

LFS201 and LFS202

5.4. Specific assumed prior knowledge and skills (where applicable)

It is assumed that you have the following (to at least an Introductory level) understanding of quantitative statistics, information literacy skills - sourcing, synthesising and referencing of academic literature in the science domain

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

You will receive early feedback in various ways. These include formative feedback on data analysis and presentation in week 1 and 3 Laboratory classes. Formative feedback from the weekly learning materials and associated revision questions will allow you to check your understanding and comprehension of the physiology concepts, especially the integration of systems.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Portfolio	Individual	35%	Multiple: Practical Skills - duration of Laboratory class plus preparation @ 20 min (assessed in class only); Quizzes @ 20 min; Results assignment approx. 2 hr.	Throughout teaching period (refer to Format)	Online Assignment Submission with plagiarism check and in class
All	2	Artefact - Creative, and Written Piece	Group	25%	600 words ± 10% and one diagram	Refer to Format	Online Assignment Submission with plagiarism check
All	3	Examination - Centrally Scheduled	Individual	40%	2 hr	Exam Period	Exam Venue

All - Assessment Task 1: Theoretical and Practical Portfolio

GOAL:	To engage in the theoretical and practical components of the course through analysis and application to facilitate your learning of physiology.
PRODUCT:	Portfolio
FORMAT:	This assessment task will include a series of assignments associated with the practical and theoretical components of the course. The subtasks will include: Practical skills assessment (15%) to assess preparation for, active participation in and competency in core laboratory skills across the seven laboratory classes; 3 x quizzes (10%); and an experimental results assignment (10%). The Results assignment documents will be submitted online through Turnitin. Further details, including Rubric and instructions will be provided on Canvas.

CRITERIA:	No.	Learning Outcome assessed
	1	Demonstration of knowledge of human physiology 1 2 5
	2	Demonstration of the integration of human physiological systems 2
	3	Application of knowledge of physiology to solve problems 4
	4	Collection and recording of data from physiology experiments 5
	5	Analysis and interpretation of data from physiology experiments 1 2 4 5

All - Assessment Task 2: Cell Communication assignment

GOAL:	This task is designed to help you explore the coordinated nature of the physiological systems in the human body, with emphasis on neural or hormone regulation and control. You will demonstrate depth of knowledge on your chosen ion channel OR hormone system and its specific actions.	
PRODUCT:	Artefact - Creative, and Written Piece	
FORMAT:	<p>You will work in a group (2 - 3 students – nominated by Week 5) to produce a 600 word written assignment with incorporation of one appropriate diagram, to describe the physiology of a chosen ion channel OR hormone (from a list provided). You must opt in to either the Week 8 – ion channel assignment or the Week 11 hormone assignment no later than Week 5.</p> <p>You will submit your written assignment with in-text references and reference list to Turnitin for Self Audit (text matching software for plagiarism checking) at the start of Week 8 (ion channel) or Week 11 (hormone). You will download your Turnitin originality report and check for any matching text and make any changes, if needed and as appropriate, to your text.</p> <p>You will submit the final document – written piece and diagram in week 8 (ion channel) OR week 11 (hormone). You will complete a self-reflection on your individual contribution to the group assignment after your final submission and this component will be marked on an individual basis.</p> <p>Comprehensive instructions, resources and a rubric will be available on Canvas.</p>	
CRITERIA:	No.	Learning Outcome assessed
	1	Critical evaluation and synthesis of scientific literature to describe the physiology of the ion channel/hormone system its role in communication in the human body. 1 2 3
	2	Communication of the ion channel's/hormone's mode of action using visual means. 1 2 3
	3	Use of appropriate scientific and academic language. 1 3
	4	Adherence to instructions on presentation and formatting, including referencing 3
	5	Compliance with academic integrity when using and citing literature 3

All - Assessment Task 3: End of semester examination

GOAL:	To assess your understanding of and ability to apply knowledge of the theoretical concepts in human physiology covered in the course and solve physiology problems.
PRODUCT:	Examination - Centrally Scheduled
FORMAT:	<p>A comprehensive, 2 hour final examination, consisting of multiple choice and written responses to short answer style questions.</p> <p>If the examination is administered online, written responses will be submitted to Turnitin.</p>

CRITERIA:

No.		Learning Outcome assessed
1	Demonstration of depth and breadth of knowledge of human physiology theory presented in the course.	1
2	Demonstration of the integration of human physiological systems	2
3	Application of knowledge of physiology to solve problems	4

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

7.1. Schedule

PERIOD AND TOPIC	ACTIVITIES
Week 1	Online learning materials and Lectorial (workshop 2): Nervous system I Laboratory: Physiological data acquisition and analysis
Week 2	Online learning materials and Lectorial (workshop 2): Nervous system II Workshop: Neurophysiology review & Scientific Communication
Week 3	Online learning materials and Lectorial (workshop 2): Endocrine system I Laboratory: Compound action potential in nerves
Week 4	Online learning materials and Lectorial (workshop 2): Endocrine system II Workshop: Endocrine system
Week 5	Online learning materials and Lectorial (workshop 2): Muscle physiology Laboratory: Integrative physiology - blood glucose homeostasis during the absorptive state
Week 6	Online learning materials and Lectorial (workshop 2): Cardiovascular physiology I Workshop: Muscle Physiology
Week 7	Online learning materials and Lectorial (workshop 2): Cardiovascular physiology II Laboratory: Cardiovascular physiology
Week 8	Online learning materials and Lectorial (workshop 2): Respiratory physiology Workshop: Case Study Respiratory System
Week 9	Online learning materials and Lectorial (workshop 2): Renal physiology I Laboratory: Integrative Physiology - Respiratory Sinus Arrhythmia
Week 10	Online learning materials and Lectorial (workshop 2): Renal physiology II Workshop: Case Study - Dehydration; Secondary active transport of sodium and glucose
Week 11	Online learning materials and Lectorial (workshop 2): Digestive system Laboratory: Fluid, electrolyte and acid-base balance
Week 12	Online learning materials and Lectorial (workshop 2): Reproductive Physiology Workshop: Reproductive Physiology
Week 13:	Online learning materials and Lectorial (workshop 2): Physiology of Pregnancy and Foetal Development Laboratory: Digestive System

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

Please note that you need to have regular access to the resource(s) listed below. Resources may be required or recommended.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Required	Lauralee Sherwood	2015	Human Physiology: From Cells to Systems	9th Edn.	Cengage Learning

8.2. Specific requirements

You must wear a lab coat, enclosed shoes, and safety glasses during laboratory classes. You must either purchase and bring to lab classes a copy of the LFS203 Integrated Physiology Laboratory manual, or alternatively print out the manual from Canvas. The manual is available for purchase from Mail and Print Services (MaPS).

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the [online induction training for students](#), and following the instructions of the University staff

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

- a. The final mark is in the percentage range 47% to 49.4%
- b. The course is graded using the Standard Grading scale
- c. You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate (the rates are cumulative):

- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day
- 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task.

Weekdays and weekends are included in the calculation of days late.

To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: [07 5430 1168](tel:0754301168) or using the [SafeZone](#) app. For general enquires contact the SafeUniSC team by phone [07 5456 3864](tel:0754563864) or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call [07 5430 1226](tel:0754301226) or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the [Learning Advisers](#) web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to [Student Hub](#), email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, [AccessAbility Services](#) can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to [Student Hub](#), email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit <https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.9. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The [Student Charter](#) sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.10. General Enquiries

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au