

SPX202 Biomechanics I
School: School of Health - Sport and Exercise Science

2026 | Trimester 2

 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 unisc.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

Biomechanics 1 is designed to introduce you to the field of biomechanics. In this course you will explore, describe, analyse and predict the characteristics of movement for the human body. Biomechanics 1 is divided into two sections. In the first section, the laws of physics are addressed and then applied to human motion, while the second section is based on the application of these principles to gait analysis and specific sport and exercise activities.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Pre-prepared learning materials across a range of formats	1hr	Week 1	12 times
Tutorial/Workshop 1 – Discussion of learning materials	2hrs	Week 1	12 times
Laboratory 1 – Application of learning materials through practical tasks and activities	2hrs	Week 1	12 times

1.3. Course Topics

Linear and angular kinematics principles
 Projectile motion
 Laws of motion – linear and angular kinetics, rotation and leverage
 Equilibrium, centre of mass and stability
 Mechanics of human locomotion – walking and running
 Mechanics of dynamic sporting movements – jumping, throwing, hitting, and kicking
 Movement within a fluid medium

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 Describe human movement using appropriate terms and concepts	Knowledgeable
2 Use the laws of motion to explain the cause of human movement	Knowledgeable
3 Identify inter-relationships between biomechanical variables	Knowledgeable
4 Perform calculations based on biomechanical data	Empowered
5 Apply biomechanical principles to human locomotion, activities of daily living, and dynamic sporting skills	Empowered
6 Disseminate the findings of biomechanical experiments ethically, clearly and succinctly	Empowered

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

LFS122

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

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

Not applicable

5.5. Microcredential Information

Not applicable

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

In weeks 2 and 3 you will have a submission for your Applied Biomechanics Workbook. In week 3 you will receive formative feedback on your progress in completing the calculations section of your Applied Biomechanics Workbook. This will help you to prepare for the type of questions that you are likely to receive in the mid trimester exam in week 6.

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	Examination - not Centrally Scheduled	Individual	30%	105 minutes	Week 6	Online Submission
All	2	Practical / Laboratory Skills	Individual	30%	Completed over the course of the trimester	Throughout teaching period (refer to Format)	Online Test (Quiz)
All	3	Examination - Centrally Scheduled	Individual	40%	120 minutes	Exam Period	Online Submission

All - Assessment Task 1: Mid trimester exam

GOAL:	To provide you with an opportunity to demonstrate your knowledge, understanding, and ability to apply basic biomechanical concepts and principles covered during the theoretical component of the course.		
PRODUCT:	Examination - not Centrally Scheduled		
AUTHORSHIP STATEMENT:			
FORMAT:	The examination will include all material covered within the theory and practical components of the course during the first 5 weeks. The structure will consist of a range of question types requiring you to apply theoretical concepts, perform calculations, and read and interpret graphs. In preparation for the type of questions that you will receive in this examination you will have an extensive range of practice questions to work through. As you work through these questions you will have the opportunity to check your answers and receive feedback.		
CRITERIA:	No.		Learning Outcome assessed
	1	Use correct terms and concepts	1
	2	Select the appropriate equation, substitute known data into the equation, manipulate the equation to isolate the unknown, and solve for the unknown variable	2 3 4
	3	Use the appropriate scientific units in your answer	4
	4	Convey information clearly and succinctly	1 2 3
GENERIC SKILLS:	Communication, Problem solving		

All - Assessment Task 2: Applied Biomechanics Workbook

GOAL:	This workbook has been designed to develop your biomechanical communication skills through the application of biomechanical knowledge to different scenarios. This workbook contains laboratory activities that will require you to collect biomechanical data collection, perform calculations, analyse and interpret data, and answer discussion questions using an understanding of the concepts and principles presented in the course. The completion of the workbook will enable you to demonstrate a foundational knowledge of biomechanics with real-world application across all programmes in this course. Therefore, your attendance and participation in practicals/laboratories is important.	
PRODUCT:	Practical / Laboratory Skills	
AUTHORSHIP STATEMENT:		
FORMAT:	<p>The workbook will be able to be purchased from Mail and Print Services (USC MAPS).</p> <p>The workbook will be completed individually, however, certain tasks will require you to work collaboratively with your peers. There should be time to complete most of the tasks, activities and discussion questions within the two-hour laboratory classes. However, some tasks will require more time-consuming processes or in-depth consideration and need to be completed online outside of the scheduled class times.</p> <p>Most weeks between weeks 2-12 will require some type of online submission related to your understanding of the tasks and activities in the workbook. Throughout the trimester you will receive feedback on the quality, comprehensiveness, and accuracy of your work. It is very important that you make sure that you are keeping up with the material and ask questions when you are having difficulties.</p>	
CRITERIA:	No.	Learning Outcome assessed
	1	Communicate effectively using correct terms and concepts
	2	Perform calculations on the data collected
	3	Identify inter-relationships between variables
	4	Use a structured approach to reasoning when analysing and interpreting data
	5	Convey information clearly and succinctly
GENERIC SKILLS:	Communication, Collaboration, Problem solving, Organisation, Applying technologies, Information literacy	

All - Assessment Task 3: Final exam

GOAL:	To provide you with an opportunity to demonstrate your knowledge, understanding, and ability to apply basic biomechanical concepts and principles covered during the theory and practical components of the course – with particular emphasis on human locomotion, activities of daily living, and dynamic sporting skills.		
PRODUCT:	Examination - Centrally Scheduled		
AUTHORSHIP STATEMENT:			
FORMAT:	The examination will include all material covered within the theory and practical components of the course. The structure will consist of a range of question types requiring you to apply theoretical concepts to, and analyse and interpret data for, different skills and movement patterns. The duration of the examination is 2 hours.		
CRITERIA:	No.		Learning Outcome assessed
	1	Use correct terms and concepts	1
	2	Interpret kinematic and kinetic data	2 3 5
	3	Explain inter-relationships between biomechanical variables	3
	4	Apply mechanical principles to human locomotion, activities of daily living, and dynamic sporting skills	4
	5	Convey information clearly and succinctly	2 5 6
GENERIC SKILLS:	Communication, Problem solving, Organisation		

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.

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

You need regular access to the resource(s) below. Many texts are available as ebooks through the [Library](#) at no additional cost.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Recommended	Susan J. Hall	2021	ISE Basic Biomechanics	9th	n/a
Recommended	Paul Grimshaw,Michael Cole,Adrian Burden,Neil Fowler	2018	Instant Notes in Sport and Exercise Biomechanics	n/a	Garland Science

8.2. Specific requirements

You must have access to a scientific calculator and bring it to all teaching sessions. While calculators can be shared in teaching sessions this practice will not be allowed during exams. It will be beneficial to have a USB memory stick / flash drive (at least 4GB) for this and future courses so you can compile the relevant learning materials. These can be purchased relatively cheaply (less than \$15) from most major outlets.

9. How are risks managed in this course?

Risk assessments have been performed for all studio and laboratory classes and a low level of health and safety risk exists. Some risk concerns may include equipment, instruments, and tools; as well as manual handling items within the laboratory. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the 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%; and
- (b) The course is graded using the Standard Grading scale

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10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:

- (a) One day: deduct 5%;
- (b) Two days: deduct 10%;
- (c) Three days: deduct 20%;
- (d) Four days: deduct 40%;
- (e) Five days: deduct 60%;
- (f) Six days: deduct 80%;
- (g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:

Less than 15 minutes: No penalty
From 15 minutes to 30 minutes: 20% penalty
More than 30 minutes: 100% penalty

10.4. 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>

10.5. 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.

10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- [UniSC Student Central](#)
- [UniSC Adelaide Student Central](#)

