COURSE OUTLINE

SPX411 Exercise in Neurological and Complex Musculoskeletal Rehabilitation

School: School of Health - Sport and Exercise Science

2026 | Session 8

UniSC Sunshine Coast

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

This course is required for students in the Bachelor of Clinical Exercise Physiology SC304 program to prepare for clinical practice. You will learn about exercise assessment, prescription and programming for neurological and complex musculoskeletal conditions and learn skills in physical examination, clinical assessment, exercise management, multidisciplinary care, and referral pathways for clients in varied care settings. You will read and apply research on neurological and complex musculoskeletal conditions to clinical decision-making, developing skills in evidence-based practice.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Laboratory 1 – 3 week intensive, 5 days per week, 2 hours per lab.	10hrs	Week 6	3 times
Tutorial/Workshop 1 – 3 week intensive, 5 days per week, 2 hours per lab	10hrs	Week 6	3 times
Learning materials – Daily learning materials posted online	12.5hrs	Week 6	3 times

1.3. Course Topics

- Dealing with complex MSK conditions, including prioritisation of care (with worked-case examples of complex musculoskeletal conditions)
- Neurological conditions including stroke, spinal cord injuries, traumatic and acquired brain injuries, cerebral palsy, multiple sclerosis, Parkinson's Disease.
- Medical and allied health management of neurological health conditions.
- Physical examination, sensory and movement analysis for neurological conditions; identifying signs and symptoms prior to exercise.
- Medications used for neurological conditions effects and interactions.
- Selecting and applying exercise for neurological conditions; evidence-based practice.
- Modifying exercise in response to neurological pathologies, physical function and task demands.
- Exercise progression with neurological and complex musculoskeletal clients
- Safety and contraindications with neurological and complex musculoskeletal clients
- Report writing elements for compensatory schemes (e.g., work cover, NDIS)
- Basic imaging
- Complex pain
- The Arthritides
- Joint replacement surgery and rehabilitation
- Frailty, osteoporosis, fall-related injury, and pathological fractures
- Inclusion of individuals with disability

2. What level is this course?

400 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...	GRADUATE QUALITIES MAPPING Completing these tasks successfully will contribute to you becoming...	PROFESSIONAL STANDARD MAPPING * Exercise and Sports Science Australia
1 Evaluate the role, skills, and scope of practice of an exercise physiologist in complex musculoskeletal and neuromuscular rehabilitation, multidisciplinary care, referrals and working with other healthcare professionals, within the Australian health system.	Empowered	1.2.1, 1.2.6, 2.2.7
2 Apply and validate knowledge of code of conduct, medical, surgical, imaging and allied health management of complex musculoskeletal and neuromuscular conditions within the scope of practice of an exercise physiologist.	Knowledgeable	1.2.1, 2.2.1, 2.2.4, 4.2.1
3 Justify clinical decision-making to the recognition of signs and symptoms of complex musculoskeletal and neuromuscular conditions before, during and after exercise and assessment, to inform meaningful intervention.	Creative and critical thinker	2.2.2, 2.2.6, 3.2.2, 3.2.3, 3.2.6, 4.2.1, 4.2.2
4 Identify and act on contraindications and biopsychosocial considerations for musculoskeletal and neuromuscular conditions, ensuring inclusive, person-centred care, modifying services and taking safe and appropriate action (e.g., referral).	Ethical Information literacy	1.2.6, 2.2.5, 2.2.6, 3.2.4, 4.2.3
5 Model professional competency to deliver, monitor, document and adapt client assessment, education and exercise-based interventions for clients with complex musculoskeletal and neuromuscular conditions.	Empowered Problem solving	
6 Critically evaluate and apply scientific evidence to inform and design service delivery of tailored exercise programs to clients with complex musculoskeletal and neuromuscular conditions.	Creative and critical thinker	2.2.5, 3.2.6, 4.2.1, 4.2.2

* Competencies by Professional Body

CODE	COMPETENCY
EXERCISE AND SPORTS SCIENCE AUSTRALIA	
1.2.1	Practise with integrity within the scope of practice for an AEP, the ESSA Code of Professional Conduct and Ethical Practice, and jurisdictional Codes of Conduct.
1.2.6	Practise collaboratively and effectively with other professionals, including seeking feedback and input to inform decision-making, delegating tasks, and referring to other professionals and services where appropriate.
2.2.7	Explain national, state, and compensable scheme frameworks across the health care, aged care, and disability sectors, and the requirements for AEPs working in these settings.

CODE	COMPETENCY
2.2.1	Integrate knowledge of anatomy, physiology, pathophysiology, and other determinants of health and function and apply these to inform safe and effective movement, physical activity, and exercise-based interventions for individuals and population groups throughout all stages of their life.
2.2.4	Evaluate the effect of commonly prescribed medications, diagnostic procedures, medical, surgical, and other interventions on both resting and exercise-related physiological responses across the full health spectrum.
2.2.2	Examine principles of biopsychosocial care, value-based care, person-centred care and social and cultural determinants of health and apply this to promote health and well-being for individual clients and population groups.
2.2.6	Apply clinical, ethical, and evidence-based decision-making to formulate appropriate interventions and recommendations and communicate the expected outcomes.
2.2.5	Evaluate research findings and apply exercise prescription principles to develop recommendations and interventions, including targeted exercise prescription for the purposes of optimising health status, function, recovery, independence, and participation.
3.2.2	Formulate safe, effective, and culturally sensitive assessments to collect relevant information, social and cultural determinants of health, client history, and client needs, preferences, barriers, facilitators, and goals.
3.2.3	Formulate appropriate assessments and outcome measures relevant to treatment and client goals, and evaluate health status, function, capacity, and progress, to inform clinical reasoning and to monitor the delivery and outcomes of interventions.
3.2.6	Communicate appropriate client support strategies to facilitate in-person and telepractice/telehealth service delivery which considers client needs, preferences, health and digital literacy, and accessibility factors.
3.2.4	Distinguish, record, report, and appropriately action changing risk factors and adverse signs and symptoms that may arise before, during, and after assessments and interventions.
4.2.1	Formulate evidence-based exercise prescription, interventions, and recommendations that address health and treatment related client needs, preferences, goals, and abilities, assessment findings, and social and cultural determinants of health.
4.2.2	Design, prescribe, deliver, and monitor safe and effective movement, physical activity, and exercise-based interventions for clients with complex presentations, including those with acute and chronic health conditions and multiple comorbidities.
4.2.3	Formulate and apply strategies to manage risks, evaluate progress, and adapt recommendations and interventions in partnership with clients based on needs and measured outcomes.

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

SPX231 and SPX302

5.2. Co-requisites

You are required to take at least one 400 level clinical placement in the current academic year.

5.3. Anti-requisites

Not applicable

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

It is assumed that you will build upon your knowledge of musculoskeletal health, conditions, diseases, and management gained in 3rd year courses, and your skills in clinical history taking, record keeping, and evidence-based clinical decision making gained in practicums and specific clinical skills courses.

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

This intensive course will provide resources and online self-managed assessments (quizzes, clinical reasoning scenarios) to provide early feedback prior to the start of the intensive and the census date. All lecture/workshop material and class resources will be provided on LMS prior to the start of the intensive with the expectation that students will familiarise themselves with the material and self-assessments. Informal individual feedback from the Course Coordinator can be provided.

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	Activity Participation	Individual	40%	90 minutes class discussion per case, for 4 cases.	Week 2	In Class
All	2	Report	Individual	35%	5-8 pages.	Week 3	Online Submission
All	3	Examination - not Centrally Scheduled	Individual	25%	120 minutes.	Week 3	In Class

All - Assessment Task 1: Case method tutorial participation

GOAL:	To demonstrate clinical reasoning relating to exercise physiology management of complex musculoskeletal and neuromuscular conditions.
PRODUCT:	Activity Participation
FORMAT:	Students will be required to participate in structured discussions of clinical cases in the course workshops. These sessions will be in the case method tutorial format. Students will work in teams, but participation is assessed for each individual team member. Grading of performance is based on the quality of discussion contributions and the associated clinical reasoning. Preparation is required by careful review of a set case prior to workshops. Feedback on participation is provided regularly throughout the workshop series.
CRITERIA:	**No.** / **Learning Outcome assessed** 1 Quality of discussion contributions, asessed with a structured rubric completed by staff, peers and self. — 2 3
GENERIC SKILLS:	Communication, Collaboration, Problem solving

All - Assessment Task 2: Written treatment plan report

GOAL:	To develop essential skills in preparing written reports outlining assessments and proposed treatment plans aligned to the requirements of government-funded health service schemes. Reports of this type are a critical element of clinical documentation. This includes incorporation of critically appraised scientific evidence to inform and design service delivery of tailored exercise programs to clients with complex musculoskeletal and neuromuscular conditions.
PRODUCT:	Report
FORMAT:	Iterative submissions of an evolving report draft developed across the course practical classes with support from tutors. This will be based on an example case assigned for each individual student.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 Preparation of an authentic report to a case manager, such as those required from allied health profressionals providing NDIS services. The report length, inclusions, and grounding in evidence will be assessed with a structured rubric. — 3 4 5 6
GENERIC SKILLS:	

All - Assessment Task 3: Written examination

GOAL:	To demonstrate critical knowledge of Exercise Physiologist scope of practice within the Australian health care system and a multi-disciplinary care framework. Topics will encompass neurological and musculoskeletal pathophysiologies, signs, symptoms; medication effects; common surgeries; referral pathways; contraindications to exercise; and safe and effective exercise prescription.
PRODUCT:	Examination - not Centrally Scheduled
FORMAT:	Individual written examination. The exam will be single-best answer multiple choice questions, typically based on case vignettes. This exam will be run in class time. Students should check Canvas for date of final written exam.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 To demonstrate critical knowledge of Exercise Physiologist scope of practice within the Australian health care system and a multi-disciplinary care framework. — 1 2 4
GENERIC SKILLS:	Problem solving, Information literacy

6.4. Assessment to competency mapping

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
ESSA ACCREDITED EXERCISE PHYSIOLOGIST PROFESSIONAL STANDARDS 2025				
All delivery modes	Activity Participation	Case method tutorial participation	1.1	Taught, Practiced, Assessed
			1.2.1	Taught, Practiced, Assessed
			1.2.6	Taught, Practiced
			1.2.8	Taught, Practiced
			1.2.11	Taught, Practiced
			2.1	Taught, Practiced, Assessed
			2.2.1	Taught, Practiced, Assessed

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
			2.2.2	Taught, Practiced, Assessed
			2.2.3	Taught, Practiced, Assessed
			2.2.6	Taught, Practiced, Assessed
			2.2.7	Taught, Practiced, Assessed
			3.2.3	Taught, Practiced, Assessed
			3.2.4	Taught, Practiced, Assessed
			3.2.5	Taught, Practiced
			3.2.8	Taught, Practiced, Assessed
			4.2.3	Taught, Practiced, Assessed
	Examination - not Centrally Scheduled	Written examination	1.1	Taught, Practiced, Assessed
			2.2.1	Taught, Practiced, Assessed
			2.2.2	Taught, Practiced, Assessed
			2.2.4	Taught, Practiced, Assessed
			3.2.1	Taught, Practiced, Assessed
			3.2.5	Taught, Practiced, Assessed
			3.2.8	Taught, Practiced, Assessed
	Report	Written treatment plan report	1.1	Taught, Practiced, Assessed
			1.2.2	Taught, Practiced, Assessed
			1.2.6	Taught, Practiced, Assessed
			1.2.8	Taught, Practiced, Assessed
			1.2.14	Taught, Practiced, Assessed
			1.2.15	Taught, Practiced, Assessed
			2.1	Taught, Practiced, Assessed

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
			2.2.5	Taught, Practiced, Assessed
			2.2.6	Taught, Practiced, Assessed
			3.2.3	Taught, Practiced, Assessed
			3.2.7	Taught, Practiced, Assessed
			4.2.1	Taught, Practiced, Assessed
			4.2.3	Taught, Practiced, Assessed
			4.2.6	Taught, Practiced, Assessed

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
Required	Mark Hutchinson,Peter Brukner,Karim Khan,Ben Clarsen,Paul McCrory,Ann Cools,Kay Crossley,Jill Cook,Roald Bahr	2017	BRUKNER & KHAN'S CLINICAL SPORTS MEDICINE: INJURIES,	5th edition	McGraw-Hill Education / Australia
Required	Hazel Clarkson	2019	Musculoskeletal Assessment	4	LWW

8.2. Specific requirements

Goniometers, small and medium; tape measure.

This course includes an assessment of a professional competency task deemed necessary to meet the Exercise and Sports Science Australia (ESSA) Professional Standards. Therefore, your attendance and participation in practicals and tutorials is mandatory. Feedback will be provided to you during each of your classes and will provide you with support and guidance to become competent in the ESSA Professional Standards addressed in this course. For any work that is missed you will need to demonstrate to your course provider that you have covered the required material. This will usually take the form of a detailed summary and reflection of the directed study activities and practical skills for the missed class or placement.

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is 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%; and
(b) The course is graded using the Standard Grading scale

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