

SPX412 Exercise in Neurological Rehabilitation and Mental Health

School: School of Health - Sport and Exercise Science

2026 | Session 5

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 4th year Bachelor of Clinical Exercise Physiology students to become accredited as Exercise Physiologists with ESSA. You will add to your knowledge of chronic conditions and will further develop skills in evidence-based practice for neurological and neuromuscular conditions, and mental health. You will focus on neurological/neuromuscular examination, clinical assessments for neurological and mental health clients, exercise management and multidisciplinary care for neurological and mental health clients in varied healthcare settings.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Tutorial/Workshop 1 – Blended learning activities included tutorials, case study analyses, simulated learning scenarios and guest speaker workshops. This workshop will run daily each morning of the intensive for 3 hours .	15hrs	Pre-trimester/session	3 times
Tutorial/Workshop 2 – Blended learning including simulated activities, case study skills, exercise assessments and programming for special population groups and workshops. This workshop will run each afternoon for each day of the intensive in the afternoon. During some days, the student cohort may be split into small groups each afternoon for simulated learning and practical activities, dependent on the class size.	20hrs	Pre-trimester/session	3 times

1.3. Course Topics

1. Neurological and mental health conditions including stroke, spinal cord injuries, traumatic and acquired brain injuries, cerebral palsy, multiple sclerosis, Parkinson's Disease, dementias, intellectual disabilities, anxiety and depressive disorders.
2. Medical and allied health management of neurological and mental health conditions.
3. Physical examination, sensory and movement analysis for neurological conditions; identifying signs and symptoms prior to exercise.
4. Medications used for neurological and mental health conditions; effects and interactions.
5. Selecting and applying exercise for neurological and mental health conditions; evidence-based practice.
6. Identifications of signs and symptoms during exercise and recovery.
7. Modifying exercise in response to neurological pathologies, mental health conditions, physical function and task demands.
8. Exercise progression with neurological and mental health clients.
9. Safety and contraindications with neurological and mental health clients.

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	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING *
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Exercise and Sports Science Australia
1 Evaluate the role, skills and scope of practice of an exercise physiologist in neurological rehabilitation and mental health, multidisciplinary care, discharge, referrals and working with other healthcare professionals within the Australian health system.	Engaged	1.2.1, 1.2.4, 1.2.5, 1.2.6, 2.2.1, 2.2.7
2 Apply and validate knowledge of the pathophysiology, medical, surgical, and allied health management of neurological conditions and mental health care within the scope of practice of an exercise physiologist.	Empowered	2.2.1, 2.2.3, 2.2.4, 3.2.3, 3.2.7, 4.2.1, 4.2.7
3 Apply and justify clinical decision making to the recognition of signs and symptoms of neurological and mental health conditions in clinical assessment, before, during, and after exercise.	Ethical	1.2.5, 2.2.1, 2.2.5, 2.2.6, 3.2.1, 3.2.3, 3.2.4, 3.2.7, 4.2.1, 4.2.2
4 Identify relative and absolute contraindications to exercise for neurological and mental health conditions and apply this knowledge by taking appropriate action including referral to other health care professionals when required and modifying exercise assessment and programming when clients are at risk or symptoms are exacerbated.	Creative and critical thinker	2.2.1, 2.2.3, 3.2.1, 3.2.3, 3.2.4, 3.2.7, 4.2.1, 4.2.3
5 Critically evaluate and apply scientific evidence to inform and design service delivery of tailored exercise programs to clients with neurological and mental health conditions.	Knowledgeable Problem solving	2.2.1, 2.2.3, 2.2.5, 2.2.6, 3.2.1, 4.2.1

* 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.
1.2.4	Develop effective, concise, respectful, and informative clinical documentation, including case notes and reports, and apply appropriate record keeping practices.
1.2.5	Practise in a culturally safe, inclusive, sensitive, respectful, and responsive way and according to person-centred care principles.
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.
2.2.1	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.
2.2.7	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
2.2.3	Evaluate physiological responses and adaptations to acute and chronic exercise for clients across the full health spectrum.
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.
2.2.5	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.
2.2.6	Apply clinical, ethical, and evidence-based decision-making to formulate appropriate interventions and recommendations and communicate the expected outcomes.
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.
3.2.7	Distinguish when client needs are outside of scope or competence and take appropriate, timely actions including engaging effectively with other professionals.
3.2.1	Formulate appropriate screening processes to evaluate and stratify risk for participation in assessments and interventions, including consideration of appropriate service modalities for clients.
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.
4.2.7	Communicate effectively and respectfully with clients and relevant others about progress and outcomes of interventions, including appropriate reporting.
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 SPX300 and SPX411 and SPX402 and enrolled in Program SC304

5.2. Co-requisites

Not applicable

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 neuroscience and neural control gained in Motor Control and Learning, your skills in musculoskeletal assessment gained in Exercise in Musculoskeletal Rehabilitation, and your skills in clinical history taking, record keeping, physical examination, clinical assessment and evidence-based clinical decision-making gained in 3rd year and 4th year Practicums.

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

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. Feedback in the second week of the intensive can be given through self-paced online learning (quizzes and case-based questions involving clinical decision-making). This feedback can inform Task 1, the group Oral Examination.

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	Oral	Group	50%	50 minutes	Refer to Format	In Class
All	2	Examination - not Centrally Scheduled	Individual	50%	120 minutes	Refer to Format	In Class

All - Assessment Task 1: Case Study Oral Examination

GOAL:	Students must demonstrate understanding of the clinical history, consultation planning, physical examination skills, referral and diagnostic testing, neurological and mental health assessments within exercise physiology scope of practice, signs and symptom identification, and appropriate exercise prescription required for clinical decision-making to work with a neurological or mental health client. Students must also demonstrate their ability to search the literature to support evidence-based practice.		
PRODUCT:	Oral		
AUTHORSHIP STATEMENT:			
FORMAT:	The group is expected to divide the task between students, to allow equal contribution from all students. You may choose to have students "role play" the "exercise physiologist" and "client" to demonstrate physical assessments, exercises and stretches. You may also use some equipment provided by the examiner to demonstrate your exercise program. You may bring written summary notes into the examination room, to refer to during the exam. This exam will be conducted in the final week of the intensive block. You will be provided with group feedback. A statement of equal contribution for all group members must be submitted to the Course Coordinator prior to the examination.		
CRITERIA:	No.		Learning Outcome assessed
	1	Apply clinical reasoning and critical thinking to a case study scenario.	1 2 3 4 5
	2	Demonstrate understanding of the role and scope of practice of an exercise physiologist in neurological rehabilitation or exercise for mental health.	1 2 4 5
	3	Demonstrate skills and competencies in physical examination, neurological/mental health assessment, identification of signs/symptoms/contraindications to exercise.	2 3 4 5
	4	Apply knowledge of the condition to review and gather evidence and information from scientific literature, including peer-reviewed research and current clinical guidelines or position stands, as part of the clinical decision-making process.	2 3
GENERIC SKILLS:	Communication, Collaboration, Organisation, Applying technologies, Information literacy		

All - Assessment Task 2: Written Examination

GOAL:	To demonstrate critical knowledge of neurological and mental health pathophysiologies, signs, symptoms, medication effects and interactions and contraindications to exercise.																
PRODUCT:	Examination - not Centrally Scheduled																
AUTHORSHIP STATEMENT:																	
FORMAT:	Individual written closed-book examination. To be conducted at the end of the final week of the intensive block.																
CRITERIA:	<table border="1"> <thead> <tr> <th>No.</th> <th></th> <th>Learning Outcome assessed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Correct answers to the questions will demonstrate: Knowledge of the aetiology, characteristics, and physiological and biochemical mechanisms contributing to neurological and mental health conditions.</td> <td>2</td> </tr> <tr> <td>2</td> <td>Knowledge of the medical, surgical, pharmacological and allied health treatments of a range of neurological and mental health conditions.</td> <td>1 2 4 5</td> </tr> <tr> <td>3</td> <td>Knowledge of signs, symptoms and contraindications of neurological and mental health conditions before, during and after exercise, and the selection of appropriate actions during rehabilitation and general exercise prescription.</td> <td>2 4 5</td> </tr> <tr> <td>4</td> <td>Application of knowledge of the specific mechanisms of action of differing modalities of rehabilitation exercises.</td> <td>1 3</td> </tr> </tbody> </table>	No.		Learning Outcome assessed	1	Correct answers to the questions will demonstrate: Knowledge of the aetiology, characteristics, and physiological and biochemical mechanisms contributing to neurological and mental health conditions.	2	2	Knowledge of the medical, surgical, pharmacological and allied health treatments of a range of neurological and mental health conditions.	1 2 4 5	3	Knowledge of signs, symptoms and contraindications of neurological and mental health conditions before, during and after exercise, and the selection of appropriate actions during rehabilitation and general exercise prescription.	2 4 5	4	Application of knowledge of the specific mechanisms of action of differing modalities of rehabilitation exercises.	1 3	
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GENERIC SKILLS:	Communication, Information literacy																

6.4. Assessment to competency mapping

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
ESSA ACCREDITED EXERCISE PHYSIOLOGIST PROFESSIONAL STANDARDS 2021				
All delivery modes	Examination - not Centrally Scheduled	Written Examination	1.2.1	Taught, Practiced, Assessed
			1.2.6	Taught, Practiced, Assessed
			2.2.1	Taught, Practiced, Assessed
			2.2.4	Taught, Practiced, Assessed
			2.2.5	Taught, Practiced, Assessed
			2.2.6	Taught, Practiced, Assessed
			2.2.7	Taught, Practiced, Assessed
			3.2.1	Taught, Practiced, Assessed
			3.2.4	Taught, Practiced, Assessed
			3.2.7	Taught, Practiced, Assessed

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
			4.2.2	Taught, Practiced, Assessed
			4.2.3	Taught, Practiced, Assessed
	Oral	Case Study Oral Examination	1.2.1	Taught, Practiced, Assessed
			1.2.4	Taught, Practiced, Assessed
			1.2.5	Taught, Practiced
			1.2.6	Taught, Practiced, Assessed
			2.2.1	Taught, Practiced, Assessed
			2.2.3	Taught, Practiced, Assessed
			2.2.4	Taught, Practiced, Assessed
			2.2.5	Taught, Practiced, Assessed
			2.2.6	Taught, Practiced, Assessed
			3.2.1	Taught, Practiced, Assessed
			3.2.3	Taught, Practiced, Assessed
			3.2.4	Taught, Practiced, Assessed
			3.2.7	Taught, Practiced, Assessed
			4.2.1	Taught, Practiced, Assessed
			4.2.2	Taught, Practiced, Assessed
			4.2.3	Taught, Practiced, Assessed
			4.2.7	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

There are no required/recommended resources for this course.

8.2. Specific requirements

Goniometers, small and medium.

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/laboratory's and tutorials is expected. 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](#)