

SPX411 Exercise in Musculoskeletal Rehabilitation

School: School of Health - Sport and Exercise Science

2026 | Session 1

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 final year students in the Bachelor of Clinical Exercise Science SC346 and Bachelor of Clinical Exercise Physiology SC304 to prepare for clinical practice. You will add to your knowledge of 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 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. | 10hrs | Week 2 | 3 times |
| Tutorial/Workshop 1 – 3 week intensive, 5 days per week. | 15hrs | Week 2 | 3 times |

1.3. Course Topics

- Scope of practice for clinical exercise physiologists in the musculoskeletal rehabilitation setting
- Referral pathways and the allied health framework
- Basic imaging
- The Arthritides
- Joint replacement surgeries and rehabilitation
- Lower back pain and regional pain syndromes
- Osteoporosis
- Aquatic and hydrotherapy
- The ankle, knee and hip
- The pelvis and spine
- The elbow, wrist and hand
- Physical examination and assessments for musculoskeletal conditions

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 musculoskeletal rehabilitation, multidisciplinary care, discharge, 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 medical, surgical, and allied health management of musculoskeletal conditions within the scope of practice of an exercise physiologist. | Knowledgeable | 1.2.1, 2.2.1, 2.2.4, 4.2.1 |
| 3 Apply and justify clinical decision making to the recognition of signs and symptoms of musculoskeletal conditions and complex presentation in clinical assessment, before, during, and after exercise. | 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 relative and absolute contraindications to exercise for musculoskeletal 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. | Information literacy | 1.2.6, 2.2.5, 2.2.6, 3.2.4, 4.2.3 |
| 5 Critically evaluate and apply scientific evidence to inform and design service delivery of tailored exercise programs to clients with musculoskeletal conditions and multiple comorbidities in-person and via tele-practice. | 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. |

CODE COMPETENCY

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.

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

Must have completed 288 units and SPX300, SPX302 and SPX306 and be enrolled in Program SC304 or SC346

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

Limited Grading (PNP)

Pass (PU), Fail (UF). All assessment tasks are required to be passed for successful completion of the course.

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. Students will also receive peer-to-peer feedback on a mock practical exam in week 2. 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 | WHAT IS THE DURATION / LENGTH? | WHEN SHOULD I SUBMIT? | WHERE SHOULD I SUBMIT IT? |
|---------------|----------|---------------------------------------|---------------------|--------------------------------|-----------------------|---------------------------|
| All | 1 | Examination - not Centrally Scheduled | Individual | 50 minutes | Week 4 | In Class |
| All | 2 | Examination - not Centrally Scheduled | Individual | 120 minutes | Week 4 | In Class |

All - Assessment Task 1: Practical Examination and Oral Case Study Defence

| | | | |
|------------------------------|--|--|----------------------------------|
| GOAL: | To demonstrate competency in physical examination, musculoskeletal assessments, signs and symptom identification, and exercise recommendations, using evidence-based practice and current guidelines. This task embeds demonstrated understanding of the clinical history, physical examination and exercise prescription required for clinical decision-making with a case study analysis of a musculoskeletal client with multiple co-morbidities. This examination will include at least one of three regions of the body (of lower limb, hip/pelvis/spine/trunk; upper limb). | | |
| PRODUCT: | Examination - not Centrally Scheduled | | |
| AUTHORSHIP STATEMENT: | | | |
| FORMAT: | <p>Students will be required to design, prescribe, deliver and monitor an exercise intervention for a case study on a person with musculoskeletal conditions and multiple co-morbidities, such as Grandma Doe and Jane Doe.</p> <p>In practical exams students will be required to demonstrate their competency in “communicating appropriate client support strategies, and considering client needs, preferences and accessibility when assessing for, designing, prescribing, delivering and monitoring an exercise program” in-person and via telepractice. Assignment to which will be random.</p> <p>Students will be required to defend their choice of assessments and exercise prescription in a short question/answer style case defence at the end of the practical exam.</p> | | |
| CRITERIA: | No. | | Learning Outcome assessed |
| | 1 | Apply clinical reasoning and critical thinking to a case study scenario. | 1 2 3 4 5 |
| | 2 | Demonstrate competency in conducting physical examination i.e. observation, palpation, range of motion, muscle strength and functional assessments. | 2 3 4 5 |
| | 3 | Identify signs and symptoms, and 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 4 5 |
| GENERIC SKILLS: | Problem solving, Organisation, Information literacy | | |

All - Assessment Task 2: 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; musculoskeletal pathophysiology, signs, symptoms; medication effects; common surgeries; referral pathway; and contraindications to exercise. | | | | | | | | | | | | | | | | |
|------------------------------|--|---------------------------|--|---------------------------|---|--|-------|---|---|-------|---|--|---------|---|---|---------|--|
| PRODUCT: | Examination - not Centrally Scheduled | | | | | | | | | | | | | | | | |
| AUTHORSHIP STATEMENT: | | | | | | | | | | | | | | | | | |
| FORMAT: | Individual written examination. The exam will be a mixture of multiple choice and short-answer questions. This exam will be run in Week 4 of Session 1, Week 3 of the intensive, in class time. | | | | | | | | | | | | | | | | |
| CRITERIA: | <table border="1"> <thead> <tr> <th>No.</th> <th></th> <th>Learning Outcome assessed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Knowledge of the causes, characteristics, tissue loading and physiological and biochemical mechanisms contributing to musculoskeletal conditions</td> <td>2 4 5</td> </tr> <tr> <td>2</td> <td>Knowledge of the EP scope of practice in the Australian health care system and a multi-disciplinary framework, and medical, surgical, pharmacological and allied health treatments of a range of musculoskeletal diseases and conditions.</td> <td>1 2 5</td> </tr> <tr> <td>3</td> <td>Knowledge of signs, symptoms, relevant medications and contraindications of musculoskeletal conditions before, during and after exercise, and the selection of appropriate actions during rehabilitation</td> <td>2 3 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>2 3 4 5</td> </tr> </tbody> </table> | No. | | Learning Outcome assessed | 1 | Knowledge of the causes, characteristics, tissue loading and physiological and biochemical mechanisms contributing to musculoskeletal conditions | 2 4 5 | 2 | Knowledge of the EP scope of practice in the Australian health care system and a multi-disciplinary framework, and medical, surgical, pharmacological and allied health treatments of a range of musculoskeletal diseases and conditions. | 1 2 5 | 3 | Knowledge of signs, symptoms, relevant medications and contraindications of musculoskeletal conditions before, during and after exercise, and the selection of appropriate actions during rehabilitation | 2 3 4 5 | 4 | Application of knowledge of the specific mechanisms of action of differing modalities of rehabilitation exercises | 2 3 4 5 | |
| No. | | Learning Outcome assessed | | | | | | | | | | | | | | | |
| 1 | Knowledge of the causes, characteristics, tissue loading and physiological and biochemical mechanisms contributing to musculoskeletal conditions | 2 4 5 | | | | | | | | | | | | | | | |
| 2 | Knowledge of the EP scope of practice in the Australian health care system and a multi-disciplinary framework, and medical, surgical, pharmacological and allied health treatments of a range of musculoskeletal diseases and conditions. | 1 2 5 | | | | | | | | | | | | | | | |
| 3 | Knowledge of signs, symptoms, relevant medications and contraindications of musculoskeletal conditions before, during and after exercise, and the selection of appropriate actions during rehabilitation | 2 3 4 5 | | | | | | | | | | | | | | | |
| 4 | Application of knowledge of the specific mechanisms of action of differing modalities of rehabilitation exercises | 2 3 4 5 | | | | | | | | | | | | | | | |
| GENERIC SKILLS: | Communication, Collaboration, Problem solving, Organisation, 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 | Practical Examination and Oral Case Study Defence | 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 |
| | | | 3.2.3 | Taught, Practiced, Assessed |
| | | | 3.2.4 | Taught, Practiced, Assessed |

| PROGRAMME DELIVERY MODE | ASSESSMENT TYPE | TITLE | COMPETENCY | TEACHING METHODS |
|-------------------------|-----------------|---------------------|------------|-----------------------------|
| | | | 3.2.6 | Taught, Practiced, Assessed |
| | | | 4.2.1 | Taught, Practiced, Assessed |
| | | | 4.2.2 | Taught, Practiced, Assessed |
| | | | 4.2.3 | Taught, Practiced, Assessed |
| | | 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 |
| | | | 3.2.2 | Taught, Practiced, Assessed |
| | | | 3.2.3 | Taught, Practiced, Assessed |
| | | | 3.2.4 | Taught, Practiced, Assessed |
| | | | 3.2.6 | Taught, Practiced, Assessed |
| | | | 4.2.1 | Taught, Practiced, Assessed |
| | | | 4.2.2 | 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

This course will be graded as Pass in a Limited Grade Course (PU) or Fail in a Limited Grade Course (UF) as per clause 5.1.1.3 and 5.1.1.4 of the Grades and Grade Point Average (GPA) - Academic Policy.

In a course eligible to use Limited Grades, all assessment items in that course are marked on a Pass/Fail basis and all assessment tasks are required to be passed for a student to successfully complete the course. Supplementary assessment is not available in courses using Limited Grades.

10.3. Assessment: Submission penalties

You must contact your Course Coordinator and provide the required documentation if you require an extension or alternate assessment.

Refer to the Assessment: Courses and Coursework Programs – Procedures.

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](#)