

## Course Outline

**Code: SPX411**

### **Title: Exercise in Musculoskeletal Rehabilitation**

<b>Faculty:</b>	Science, Health, Education and Engineering
<b>School:</b>	Health & Sport Science
<b>Teaching Session:</b>	Session 1
<b>Year:</b>	2019
<b>Course Coordinator:</b>	Associate Professor Suzanne Broadbent Email: sbroadbe@usc.edu.au
<b>Course Moderator:</b>	Meegan Walker

Please go to the USC website 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 primary, secondary and tertiary care settings. You will read and apply research on musculoskeletal conditions to clinical decision-making, developing skills in evidence-based practice..

##### **1.2 Course topics**

- Musculoskeletal physical examination and movement analysis: identifying musculoskeletal signs and symptoms prior to commencing exercise
- Musculoskeletal assessments for range of motion and strength for clinical clients
- Selecting and applying exercise for musculoskeletal conditions: loading musculoskeletal tissues, identifying musculoskeletal signs and symptoms during exercise and recovery
- Modifying exercise in response to musculoskeletal pathology, physical function, and task demands.
- Monitoring exercise progression in people with musculoskeletal conditions
- Safety and contraindications in musculoskeletal exercise physiology practice: emergencies, red flags, yellow flags

#### **2. What level is this course?**

400 level Graduate - Independent application of graduate knowledge and skills. Meets AQF and professional requirements. May require pre-requisites and developing level knowledge/skills. Normally taken in the 4th 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?

<b>Specific Learning Outcomes</b> On successful completion of this course you should be able to:	<b>Assessment Tasks</b> You will be assessed on the learning outcome in task/s:	<b>Graduate Qualities or Professional Standards mapping</b> Completing these tasks successfully will contribute to you becoming:
Explain the role, skills, and scope of practice of an exercise physiologist in musculoskeletal rehabilitation, multidisciplinary care, referral, and discharge within the Australian health system.	1 - Case study group presentation 2 – Practical examination	Empowered. Ethical
Apply knowledge in treatment and management of musculoskeletal conditions within the scope of practice of an exercise physiologist.	1 - Case study group presentation 3 - Written examination	Knowledgeable Empowered
Apply clinical decision making in order to undertake physical examination, clinical assessment, exercise management, suitable for musculoskeletal rehabilitation practice.	1 - Case study group presentation 2 - Practical examination	Knowledgeable Creative and critical thinkers
Identify musculoskeletal signs and symptoms, and contraindications to exercise, for musculoskeletal rehabilitation, before, during and after exercise, and take appropriate action	2 - Practical Examination 3 - Written examination	Empowered Knowledgeable
Access and apply scientific research and current clinical guidelines, to clinical decision-making in musculoskeletal exercise physiology practice.	1 - Case study group presentation 2 – Practical examination	Creative and critical thinkers Knowledgeable

#### 5. Am I eligible to enrol in this course?

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

##### 5.1 Enrolment Restrictions

This course is available to students enrolled in SC304 Bachelor of Clinical Exercise Physiology or SC346 Bachelor of Clinical Exercise Science only, and is restricted to students in a program accredited (or pending accreditation) with Exercise and Sports Science Australia for Clinical Exercise Physiology. This course is specifically for the clinical development of trainee exercise physiologists.

##### 5.2 Pre-requisites

SPX302 and SPX306 and SPX322 and SPX331

##### 5.3 Co-requisites

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

##### 5.4 Anti-requisites

Nil

##### 5.5 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 SPX302, and your skills in clinical history taking, record keeping, and evidence-based clinical decision making gained in SPX306 and 300.

## 6. How am I going to be assessed?

### 6.1 Grading Scale

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

### 6.2 Assessment Tasks

Task No.	Assessment Tasks	Individual or Group	Weighting %	What is the duration / length?	When should I submit?	Where should I submit it?
1	Case study group presentation	Group	PU/UF	30 minutes	Thursday of Week 4, Session 1 January 31 2019	In class
2	Practical Examination	Individual	PU/UF	30 minutes	Tue/Wed of Week 5, Session 1 (5 - 6 <sup>th</sup> February 2019)	In class
3	Written Examination	Individual	PU/UF	120 minutes	Monday of Week 5, Session 1 (4 <sup>th</sup> February 2019)	In class

#### Assessment Task 1: Case Study Group Presentation

<b>Goal:</b>	To demonstrate understanding of the clinical history, physical examination, referral pathways, diagnostic testing and exercise prescription required for clinical decision-making with a case study analysis of a musculoskeletal client.
<b>Product:</b>	You will form a group (approx. 4 students) and will be allocated the same case study, chosen from a selection of de-identified musculoskeletal clients. The group will research the presenting features and pathophysiology of the condition, considering the initial gathering of information (SOAP notes) with the client, the physical assessments you would do, and possible referral pathways or other diagnostic information that might be needed for clinical decision-making. The group will research the appropriate rehabilitation management strategies and exercise guidelines. The group will present their case in class, outlining an exercise rehab plan for the client, and justifying their choice of assessments and rehabilitation exercises. The group will be expected to answer question from the examiner and class, and may also be required to demonstrate particular clinical assessments or exercises.
<b>Format:</b>	Group presentation task with roles divided amongst the group members. All students are expected to contribute equally.
<b>Criteria:</b>	<ol style="list-style-type: none"> <li>1) Application of discipline knowledge, scientific evidence and clinical reasoning for clinical decision-making and care planning within the Australian health system.</li> <li>2) Recognised musculoskeletal skills, assessments and exercise prescription are organised in the presentation.</li> <li>3) Demonstrated understanding of physical examination and musculoskeletal assessment, signs and symptoms, and contraindications to exercise for musculoskeletal rehabilitation. Presentation embeds understanding of the role, skills and scope of practice of an exercise physiologist in musculoskeletal rehabilitation</li> </ol>
<b>Generic skill assessed</b>	<b>Skill assessment level</b>
Information literacy	Graduate
Collaboration	Graduate
Communication	Graduate



**Assessment Task 2: Practical Examination.**

<b>Goal:</b>	To demonstrate competency in physical examination, musculoskeletal assessments, signs and symptom identification, and exercise recommendations, using evidence-based practice and current guidelines.
<b>Product:</b>	An individual consultation and physical examination of a musculoskeletal “client”.
<b>Format:</b>	You will perform a physical examination on a “client”, played by a student or volunteer, in response to an allocated, brief case study of a client with two musculoskeletal conditions in two regions of the body (lower limb, spine/neck, or upper limb). You will have 24 hours to prepare for the exam. You are required to demonstrate your competency with palpation, observation, range of motion and muscular strength assessments, and to demonstrate clinical reasoning with your recommendations of rehabilitation exercises.
<b>Criteria:</b>	<ol style="list-style-type: none"> <li>1) Apply clinical reasoning and critical thinking to a case study scenario</li> <li>2) Demonstrate competency in conducting physical examination i.e. observation, palpation, range of motion, muscle strength and functional assessments.</li> <li>3) Identify signs and symptoms, and contraindications to exercise.</li> <li>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.</li> </ol> <p>You will be provided with individual feedback. You will have a second opportunity to demonstrate competence should you not succeed on the first attempt.</p>
<b>Generic skill assessed</b>	<b>Skill assessment level</b>
Problem solving	Graduate
Organisation	Graduate
Applying technologies	Graduate

**Assessment Task 3: Written Examination**

<b>Goal:</b>	To demonstrate critical knowledge of musculoskeletal pathophysiologies, signs, symptoms, medication effects, surgeries, allied health treatments, and contraindications to exercise.
<b>Product:</b>	You will complete a written examination comprising multiple choice questions and short answer questions.
<b>Format:</b>	Individual written examination.
<b>Criteria:</b>	<p>Correct answers to the questions will demonstrate:</p> <ol style="list-style-type: none"> <li>1) Knowledge of the causes, characteristics, tissue loading and physiological and biochemical mechanisms contributing to musculoskeletal conditions.</li> <li>2) Knowledge of the medical, surgical, pharmacological and allied health treatments of a range of musculoskeletal diseases and conditions.</li> <li>3) Knowledge of signs, symptoms and contraindications of musculoskeletal conditions before, during and after exercise, and the selection of appropriate actions during rehabilitation.</li> <li>4) Application of knowledge of the specific mechanisms of action of differing modalities of rehabilitation exercises.</li> </ol> <p>Feedback can be provided to individual students on request.</p>
<b>Generic skill assessed</b>	<b>Skill assessment level</b>
Problem solving	Graduate
Communication	Graduate

## 7. What are the course activities?

### 7.1 Directed Study Hours

This course delivered as an intensive over 3 consecutive weeks full time during Session 1, Weeks 3, 4 & 5. Please note that the course is scheduled as a Session 1 course. Each week comprises workshops/tutorials and practical/laboratory sessions, as well as written and practical assessments. There will be extensive online learning material and readings provided for you and it is expected that you will access these resources prior to workshops and practical classes.

**First Week** (Session 1 Week 3): Monday – Friday mornings 5 x 3 hr workshops; Monday – Friday afternoons, 5 x 2 hr practical/simulation; NOTE – Friday practical class hours may change due to hydrotherapy pool availability.

**Second Week** (Session 1 Week 4): Monday AUSTRALIA DAY PUBLIC HOLIDAY – no classes; Tuesday, Wednesday and Friday mornings 3 x 3hr workshops; Tuesday, Wednesday and Friday afternoons, 3 x 2 hr practical. Thursday – Task 1 group presentations.

**Third Week** (Session 1 Week 5): The 2-hour written examination will be conducted in Monday Week 5 from 9 – 11.10am. Practical examinations will run Tuesday and Wednesday of Week 5 from 8.30am to 5pm. Supplementary or re-sit examinations, if needed, can be scheduled Thursday or Friday of Week 5.

### 7.2 Teaching Semester/Session(s) Offered

Sippy Downs: Session 1

### 7.3 Course content

Teaching Week / Module	What key concepts/content will I learn?	What activities will I engage in to learn the concepts/content?	
		Directed Study Activities	Independent Study Activities
Monday January 21	<p>Course Overview. Epidemiology of MSK conditions. MSK pain, red and yellow flags. Scope of Practice. Referral pathways. Contraindications for exercise. General medications. Case examples: the foot and ankle. TASK1 client information session.</p> <p>Prac class. Review of observation, posture and gait. Assessment of the foot and ankle (palpation, ROM, manual muscle testing, special tests. Rehab exercises</p>	<p>Workshop</p> <p>Laboratory</p>	<p>Review observation of posture and gait cycle. Review anatomy of the foot, ankle.</p> <p>BB resources – Powerpoint slides on the foot and ankle. Prac class handout - assessment of the foot and ankle. Video resources – examination of the foot, ankle and lower limbs.</p>
Tuesday January 22	<p>Radiology and imaging to assist differentiation of acute and chronic MSK conditions, and other pathologies. The ankle, knee, and hip as examples and case studies.</p> <p>Prac class: Physical examination of the knee and hip (palpation, ROM, MMT, special tests). Rehab exercise prescription – case studies.</p>	<p>Workshop</p> <p>Laboratory</p>	<p>Review anatomy of the knee and hip joints.</p> <p>BB resources – the Knee and Hip slides. Class handout – assessment of the knee and hip. Video – knee and hip assessment. Video – Introduction to radiology</p>

Wednesday January 23	Back pain – approaches and evidence for exercise management. Assessing the spine.  Practical: physical examination of the pelvis and lumbar, thoracic and cervical spine. ROM, MMT, special tests	Workshop  Laboratory	Review anatomy of the hip, pelvis and spine  Videos – assessment of the spine
Thursday January 24	The Upper limb: chronic and sub-acute conditions and exercise rehab.  Practical: Physical examination of the pelvis and lumbar spine (palpation, ROM, MMT, special tests. Exercise rehab.	Workshop  Laboratory.	Review anatomy of the Shoulder, arm and wrist. Videos – assessing the shoulder and upper limb
Friday January 25	Hydrotherapy Lecture. The Arthritides – Osteoarthritis and Rheumatoid arthritis.  Practical: hydrotherapy class, site visit	Workshop  Laboratory	Hydrotherapy resource – warm water exercises, Arthritis Victoria. Review OA and RA resources – fact sheets
Monday January 28	AUSTRALIA DAY PUBLIC HOLIDAY		
Tuesday January 29	Osteopenia and Osteoporosis. Primary and secondary disease states. Exercise to increase bone mineral density.  Prac class: Developing osteoporosis and falls prevention exercise classes. case study student-led activity and simulation; designing rehab spaces and exercises for falls prevention.	Workshop  Laboratory	Video resource – falls prevention
Wednesday January 30	Joint replacements and surgeries. Evidence-based exercise rehabilitation  Prac class: Continued – osteoporosis and falls prevention exercise classes, student-led activity	Workshop  Laboratory	Joint replacement resources.
Thursday January 31	Assessment Task 1: Case study group presentations 9.00am onwards .	Task 1 presentations	
Friday February 1	EXAM REVIEW day. Review theory for written exam.  Afternoon session. Case studies as prac exam practice. Framework for assessment and exercise prescription	Workshop  Laboratory	Review BB resources.
Monday February 4	Written examination 2 hr 9 – 11.10am		
Tuesday February 5	Practical exams: 8.30am to 5.30pm Room TBA		

Wednesday February 6	Practical exams: 8.30am to 5.30pm Room TBA		
Thursday of third week	Additional prac or written exam resits - TBA		
Friday of third week	Additional exam resits - TBA		

Please note that the course activities may be subject to variation.

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

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

### 8.1 Prescribed Text(s)

Please note that you need to have regular access to the resource(s) listed below as they are required:

Author	Year	Title	Publisher
Brukner and Khan	2017	Clinical Sports Medicine – Book 1; 5 <sup>th</sup> edition	McGraw-Hill
Hazel M Clarkson	2013	Musculoskeletal Assessment	Lippincott Williams & Wilkins

### 8.2 Specific Requirements

Goniometers, small and medium; tape measure

## 9. Risk management

Health and safety risks have been assessed as low. It is your responsibility to research and understand risks of specific courses and to review the USC's health and safety principles by viewing the online induction training for students. Students are advised that partial disrobing for examination of surface anatomy is an inherent requirement of the course to prepare students for professional practice. The course also includes participation in some exercise and off-campus field trips (hydrotherapy). If students have concerns about these activities they are advised to contact the Course Coordinator. Staff have attempted to minimize risks as much as possible.

## 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 Blackboard, are electronically checked through SafeAssign. This software allows for text comparisons to be made between your submitted assessment item and all other work that SafeAssign has access to.

### 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 4.1.3 and 4.1.4 of the Grades and Grade Point Average (GPA) - Institutional Operating Policy of the USC. 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.

### 10.4 Study help

In the first instance, you should contact your tutor, then the Course Coordinator. Additional assistance is provided to all students through Academic Skills Advisers. To book an appointment or find a drop-in session go to [Student Hub](#).

Contact Student Central for further assistance: +61 7 5430 2890 or [studentcentral@usc.edu.au](mailto:studentcentral@usc.edu.au)

### 10.5 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
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website:

<http://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

## 10.6 General Enquiries

### In person:

- **USC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **USC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **USC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **USC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay

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