

Course Information Sheet

BSc (Hons) Sport and Exercise Therapy

Mode and course length – Full-Time (4 years)

Location – ARU Cambridge Campus

Awarding Body – Anglia Ruskin University. As a registered Higher Education provider Anglia Ruskin University is regulated by the Office for Students.

Overview

Immerse yourself in the world of sport, exercise, injury and rehabilitation. Get hands-on experience in our accredited labs in Cambridge, and graduate ready to work as a professional sport therapist.

Sport or exercise therapists are a vital cog in the sport medicine teams that work with both professional athletes and in communities.

Our degree course will give you the skills to work with a range of patients with different injuries, using evidence-based practice to bring them back to optimal levels of fitness and performance. All players need professional support pre-, during and post-performance – and sport therapists are the recognised people to work in this space. You're likely to find yourself working at sporting events, dealing with a range of emergencies, and also behind the scenes, bringing athletes back from injury over a number of weeks or months.

But there are opportunities outside of professional sport too. Our course recognises broader national concerns about low levels of physical activity, and an aging population, leading to increases in incidents of poor health and susceptibility to injury. There's an emerging need for qualified healthcare professionals to work with groups or individuals in rehabilitation and also exercise referral in the wider population.

You'll learn to work safely and ethically as a sport or exercise therapist in our accredited labs in the Cambridge Centre for Sports and Exercise Science. We cover the core principles of sport and exercise science, alongside focused sport and exercise therapy modules. So, you can expect to get involved in a wide range of activities, from learning to provide pitch-side first-aid, dealing with spinal injuries, and delivering sport massage, to diagnosing injuries, formulating rehabilitation techniques, learning high-level exercise physiology, and delivering strength and conditioning training.

By studying at ARU, you'll benefit from highly-experienced lecturers, including practising sport therapists, coaches, conditioning specialists, sports analysts, psychologists, nutritionists, and world-leading researchers. Our team currently includes a Paralympian World Record holder, Scottish Women's Rugby player and Judo champion. We also host visiting guest speakers as part of our Excellence in Sport seminar series, which has had an array of speakers including Olympians, world record holders, elite coaches, an International Cricketer and Commonwealth gold medallist!

Course Delivery

Our courses are delivered through teaching and learning methods which provide students with the widest possible exposure to a modern and innovative higher education experience.

These methods vary and could include attendance at lectures and seminars, undertaking laboratory exercises or work-based activities, practical work, performances, presentations, field trips, other relevant visits and e-learning through Canvas, our online learning management system.

Each course is divided into a number of 'modules' which focus on particular areas, each of which has a specific approach to its delivery. This information is published to students for each module they take via the Module Definition Form (MDF) and Canvas.

Assessment

Throughout the course, we'll use a range of assessment methods to help you measure your progress. These include presentations, practical skills tests, scientific reports, case study critiques, online assessments and a research project.

We'll also encourage you to reflect on your work, and participate in peer assessment.

Fees

Information about your course fee including any annual fee increases or deposits (if required) can be found in your offer letter.

Additional Costs

£250 per annum to cover optional external qualifications/professional memberships, sports attire for practical session and miscellaneous study items (i.e. printing).

Modules

Core Modules

Year 1: Foundation in Sports Science

This module will provide students with the necessary skills to begin studying at level 4 in courses related to Sports and Sports Science.

Students will be introduced to the core skills necessary to succeed in higher education, including researching and referencing appropriately, demonstrating appropriate ICT skills, and communicating effectively verbally and in writing.

In addition to these fundamental study skills, students will be introduced to the various scientific disciplines underpinning sports sciences. Fundamental mathematical skills will be covered in order to support students' other subjects and give them confidence in manipulating data.

Students will be introduced to molecular and cellular biology, and how these fields are applied to real-world investigations. Students will also study the biology of micro and macro organisms, with reference to both human and animal structures.

Students will be introduced to the core concepts of chemistry, with a particular focus on organic chemistry, and will also be given a grounding in the core principles of physics, applied to living organisms.

Students will be introduced to the core principles of psychology and will explore various current applications of psychological theory.

The module is made up of the following 8 constituent elements:

- Interactive Learning Skills and Communication (ILSC)
- Information Communication Technology (ICT)
- Psychology
- Maths for Scientists
- Cellular Biology
- Biology – Physiology
- Chemistry
- Physics for Life Sciences

Year 2: Anatomy and Physiology

The module introduces the fundamental aspects of human anatomy and physiology in order to understand how the body responds and performs to physical activity. The regulation of the human body to stress (exercise) relates to an intricate set of homeostatic events, enabling different systems to increase their overall physiological output to sustain effort. The structure and function of the main organ systems in the body; the musculoskeletal, respiratory, cardiovascular and digestive systems will be examined and reviewed in relation to rest and in response to exercise.

In this module you will study and explore the content through lectures, seminars and laboratory based practical's where the functional and homeostatic principles will be applied and examined under changing conditions. As well as providing you with subject specific knowledge, this module will enable you to develop a number of specific employability skills related to practical (laboratory) techniques and general skills related to data collection, data handling and data presentation.

In addition to the key text identified below, specialist literature will be identified on our ReadingLists@Anglia module site – and will be used to support the learning outcomes.

Year 2: Introduction to Human Movement

This module introduces you to the fundamentals of human movement. The module provides a sound grounding in the fundamentals of human movement and provides the essentials for further study in Biomechanics.

The module will introduce you to the concept of qualitative movement diagnosis (QMD). QMD is an observational approach to analysing human movement. This is a skill which is fundamental to all Sports Coaching, Sport Science, Health and Exercise and Physical Education practitioners. You will also study the types of motion a body can have, including the concepts of distance, speed and time and displacement, velocity and acceleration. These kinematic motion quantities will be explored practically and graphically.

The importance of Newton's laws and the net external force to all movement will be explained, giving you an insight into how limb rotation can produce translational movement. The anatomical quantities of mass, weight and centre of mass will be investigated and the links drawn with the body's kinetic and potential energy.

In this module you will study and explore the content within the context of real sporting actions such as:

standing, walking, running, jumping and throwing and by using the techniques of video analysis, experimental investigation and computer aided data analysis. The module will enable you to develop transferable skills such as IT, numeracy and communication and will encourage you to become an independent thinker with good study habits.

Year 2: Foundation Skills in Sport and Exercise Therapy

The Sport or Exercise Therapists' role is underpinned by a number of fundamental skills and competencies allowing practitioners to respond to, treat and rehabilitate injuries. In the sporting domain this includes the ability to respond immediately to injurious events, both minor and catastrophic, as well as to provide medium and long-term treatment strategies for rehabilitation and the prevention of overuse injuries.

This module introduces and gives students the opportunity to practice the sports massage skills which form the basis of the manual therapies provided by a Sports Therapist alongside other common treatment modalities including but not limited to cryotherapy and electrotherapy. Additionally, student's basic life support qualifications will be built upon with the advanced first responder techniques required to allow students to provide acute trauma management.

This module is delivered through a mixture of lectures and practical's which will introduce students to the underpinning theory and knowledge of the foundation skills previously mentioned and allow students to practice these in a supervised environment.

The assessments for this module are heavily weighted towards the practical competencies required by the Society of Sports Therapy (SST)

Year 2: Anatomy & Joint Assessment for Sports Therapists

Sports Therapy is underpinned by an in-depth knowledge of the musculo-skeletal system of the human body and the response of these tissues to injury. This module practically introduces students to the key musculo-skeletal landmarks of the body, with a particular focus on the major joints and their assessment. Students will gain hands on experience of locating and palpating each of the major muscle groups as well as knowledge of the underlying structural components of the muscles and bones. Building upon this knowledge students will also gain in depth knowledge and experience of a full range of muscle and joint assessments. It will also introduce students to the most common joint injuries and the approach to their treatment.

This module is delivered through a mixture of lectures and practical's which will introduce a student to the underpinning theory and knowledge of the musculo-skeletal system required to perform assessment and treatment of muscle and joint function in injured populations.

Students will be required to demonstrate sufficient competency in the assessment of muscle and joint function as well as demonstrating knowledge of the common injuries and their treatment modalities for each of the major joints of the human body.

Year 2: Research Methods for Sport and Exercise

This module will provide an introduction to the core skills required for research in the area of sport science and sports coaching set in the context of a higher education environment. The module will act as key foundation within the degree programme providing wider skills for study and research. The module will seek to develop the skills and attributes required to initiate an understanding of the research process and stages associated with it and also an appreciation of different types of research. You will also develop an understanding of the different types of data that can be collected within your course area. The module will seek to develop a good awareness of the data analysis process, utilising different IT skills and IT programs. Finally, academic best practice will be discussed and evaluated which will cover themes such as writing skills and plagiarism. Key employability skills will be developed throughout this module – particularly how to construct oral and written reports using appropriate formatting, language and citations.

Year 2: Exercise Physiology and Nutrition

Following on from your understanding of human anatomy and physiology, this module aims to provide an overview of the fundamental principles of exercise physiology and nutrition as applied in Sport Science/ Coaching/ Therapy and Strength and Conditioning contexts. The module considers two key areas: energy demands of sport and exercise, and basic exercise assessment. Within the first area (energy demands) you will explore the principles of exercise metabolism as applied to both anaerobic and aerobic exercise. This will lead to discussion around metabolic pathways and energy demands of different types of exercise which will support your learning around training development and adaptations to exercise. An important aspect of this will be the interconnection between nutrition and metabolic demands of exercise, in which you will explore the role and contribution of the main macro-nutrients in our diet to fuel exercise, and how nutrition supports exercise adaptations.

The second main area explored within this module is the concept of basic exercise assessment. By the end of the module you will have developed practical skills relevant to undertaking a basic ‘fitness’ assessment on a client (as typically used in health and applied sport settings). As part of this, you will be expected to collate logbook material related to all practical sessions and develop team-work skills relevant to working within a multi-disciplinary team setting.

The content of this module will be covered through weekly lecture sessions followed by aligned practical laboratory sessions. The practical sessions are designed to progressively build a collection of exercise-testing skills pertinent to both the logbook and the final team-based practical assessment. As well as providing you with fundamental subject specific knowledge pertinent to your respective degree, this module will develop various employability skills associated with data collection, evaluation and interpretation of results, working within team settings and applied testing skills.

Year 2: Sport & Exercise Sciences Tutorial - Level 4

Year 2: Professional Development - Level 4

At Anglia Ruskin University we strive to ensure that students receive an outstanding Academic Education and Student Experience and understand that, whilst embedding employability skills within the credit-bearing curriculum is important, it is only part of the set of achievements needed in order to obtain career employment.

This 0-Credit module will be used to track and verify the progress students have made with respect to key employability skills and endeavour. Students will work closely with their personal tutor, SU Volunteering Service, Study Skills Plus, and the Faculty Employability Advisor to engage with co-curricular and extracurricular opportunities and activities to enhance their personal attributes.

Year 3: Applied Research Skills

This module follows, and expands upon the knowledge and experience gained from the Level 4 module Research Methods for Sport and Exercise. The primary purpose of this module is to develop the knowledge-base and applied skills required to produce a substantive independent report supported by research and data interpretation. As such this module focuses on two interrelated areas of study; applied data collection and interpretation with respect to the research process. These two areas will be delivered with recognition of the two paradigms of research – Quantitative and Qualitative research designs. It is well

recognised that both of these research paradigms provide different, but complementary, opportunities to collect and evaluate coaching, health, and sports science data for a perspective or objective review of scientific evidence and applied practice.

This module will provide opportunities to apply knowledge and key employability skills related to research design and presentation in a safe environment, and allow students the opportunity to evaluate which research designs would best suit their choice of Level 6 module (Undergraduate project or Advanced Work Placement).

In addition to the key text identified below, specialist literature will be identified on our [ReadingLists@Anglia](#) module site – and will be extensively used to support the learning outcomes.

Year 3: Physiological Profiling for Endurance

Aerobic physiology and functioning are the linchpins to all athletic and health-based activities, it from this starting point that this module will begin. Accordingly this module will study the process of profiling aerobic endurance performance and health from a physiological and analytical perspective. The philosophy behind this module is the notion of validity and reliability in test selection. As such the module will address the protocols and limitations associated with the assessment of maximum aerobic power ($\text{VO}_{2\text{max}}$), while aerobic capacity will be addressed in the context of maximal lactate steady state, lactate minimum, individual anaerobic threshold, onset of blood lactate accumulation (OBLA) and DMax and the ventilatory threshold.

The relevance of performance economy as a diagnostic tool will be considered and projected to show how this simple concept of sub-maximal oxygen uptake can be used to establish the performance indicator termed velocity at $\text{VO}_{2\text{max}}$ ($v\text{VO}_{2\text{max}}$). Consideration will be given to the dynamics of oxygen supply and utilisation at the onset of exercise through a reflection of oxygen uptake kinetics. These concepts will all be used to explore exercise intensity domains and how the role of critical power and the W' can be used to provide an objective measure of an integrated response to exercise. Clinical skills will also be considered through the application of such techniques as ECG, thoracic impedance, respiratory flow loops and cardiopulmonary exercise testing. This module will help to develop a series of transferable skills including practical (laboratory) techniques and skills relevant to general employment including report writing, data collection, handling and presentation and will be of particular interest to individuals wishing to apply their exercise physiology knowledge and work within a Sports Science Support environment.

Year 3: Functional Rehabilitation - SST

Strength and conditioning coaches and sports therapist are often responsible for large portions of the rehabilitation of athletes from injury. In this module students will be introduced to rehabilitation theory and will gain the knowledge and understanding to plan, implement and deliver progressive exercise programmes. Specifically, this module focusses on the early and intermediate stages of recovery from injuries sustained in sports and exercise setting. From the acute inflammatory stage where students will learn to manage the injury, through to the recovery of functional losses, students will cover rehabilitation of upper and lower limbs and spine. Moving from non-weightbearing to weight-bearing exercise, students will learn how to increase strength, endurance, range of motion and proprioception. Students will also be taught the use of ambulation aids (such as crutches), gait retraining, taping, strapping and compression bandaging.

At the end of this module the patient will be beginning to progress towards sport-specific conditioning/reconditioning and higher velocity movement, this will lead the student to further apply the basic concepts learnt in a follow-on level 5 module. This module supports the learning at level 6 covering late stage rehabilitation and return to play, closing the rehabilitation loop.

Year 3: Applied Sports Therapy

The module consists of both theoretical and practical components, giving students the opportunity to develop a range of practical skills. This module aims to provide students with skills and knowledge to assess and identify the most common joint dysfunction. During this module students will learn the most effective treatment protocols by using clinical reasoning and justifications. The indicative content of the module includes: detailed functional anatomy, observation and complete examination of the peripheral and vertebral joint, recognition of the dysfunction by application of specific tests, treatment of peripheral and vertebral joint disorder using a variety of mobilisation techniques.

In addition to the key text identified below, specialist literature will be identified on our [ReadingLists@Anglia](#) module site – and will be extensively used to support the learning outcomes.

Year 3: Applied Research and Employability

This module follows on from applied experiences gained from the Level 5 Applied Research Skills with the primary purpose of this module to develop the key competencies that support independent learning and exploration. Within the defined guidelines of create a research project proposal or a proposal for suitable work experience, this module will enable students to act with increasing autonomy through the reduced need for supervision and direction. Finally the module will evaluate the ethical and legal issues related to being an applied research or practitioner with Sport and Exercise Sciences.

Key employability skills related to planning and organisation, self-management and problem solving will be delivered by the University's Employability Service to support students through this module.

In addition to the key text identified below, specialist literature will be identified on our ReadingLists@Anglia module site – and will be extensively used to support the learning outcomes.

Year 3: Physiological Profiling for Strength and Power

The production of force and power across a range of motion and in conjunction with the body dimensions are crucial to both everyday living and athletic performance. Accordingly this module will study the process of profiling aerobic endurance performance and health from a physiological and analytical perspective. The philosophy behind this module is the notion of validity and reliability in test selection. To this end, this module will explore the means of assessing anaerobic power through such means as the Wingate cycle test and Margaria Stair test while anaerobic capacity will be evaluated in the context of accumulated oxygen deficit tests as well as lactate and constant load tests. The determination of strength will address measures of isometric, isotonic and isoinertial force production using conventional 'gym-based' approaches to more clinically relevant measures such as the Reactive Strength Index. These will be compared to the laboratory controlled assessment of strength (torque) using isokinetic dynamometry. Body composition will be considered through the use of both callipers and skinfold assessments through to hydro-densitometry. Flexibility and the determination of range of motion (ROM) will be considered in the context of indirect measures such as Sit-and-Reach through to more applied approaches using flexometers and goniometers. This module will help to develop a series of transferable skills including practical (laboratory) techniques and skills relevant to general employment including report writing, data collection, handling and presentation and will be of particular interest to individuals wishing to apply their exercise physiology knowledge and work within a Sports Science Support environment.

Year 3: Strength and Conditioning

This role of the applied strength and conditioning (S&C) coach at all levels of sport has progressed in recent years and is now a fundamental role within the sport science support team. The module will provide within an in-depth exploration of safe and effective S&C practice. You will develop an evidence based applied rationale for the role of S&C work in relation different performance athletes. You will be introduced to the fundamental techniques and principles of athlete assessment, evaluation and consultation. These applied modes will be discussed in conjunction with a recognition of the use of an athlete needs analysis. Although the generic term "S&C" is applied to this training domain you will address the wider implications in relation the components of fitness: endurance, speed, strength, agility (or equiv areas). You will also explore the rationale for approaches used in relation to training programme design which will be under-scored by the issues of physiological and anatomical adaptation. As well as the module specific principles you will also further enhance your key employability skills of communication, presentation, IT and data handling.

Year 3: Sport & Exercise Sciences Tutorial - Level 5

Year 3: Professional Development - Level 5

At Anglia Ruskin University we strive to ensure that students receive an outstanding Academic Education and Student Experience and understand that, whilst embedding employability skills within the credit-bearing curriculum is important, it is only part of the set of achievements needed in order to obtain career employment.

This 0-Credit module will be used to track and verify the progress students have made with respect to key employability skills and endeavour. Students will work closely with their personal tutor, SU Volunteering Service, Study Skills Plus, and the Faculty Employability Advisor to engage with co-curricular and extracurricular opportunities and activities to enhance their personal attributes.

Year 4: Rehabilitation for Performance - SST

In a competitive sporting environment, it is not enough just to regain function (e.g. walking or running). To be prepared to withstand the rigors of competitive sport an athlete must be reconditioned, and the risk of re-injury reduced before returning to play. Building on the early and intermediate stages of rehabilitation, functional movement and strength and conditioning covered earlier in the course, this module deals with the late and predischarge stages of rehabilitation. Having gone through the early and intermediate stages of rehabilitation and regained function, this module starts the conditioning of the patient for return to play. Students will learn to create progressive, sport-specific exercise programmes covering flexibility/Range of Motion (ROM), endurance, strength, speed, skill and coordination. Students will progress from non-contact to full contact training, more advanced movements such as change of direction, and the introduction of elements of spontaneity. Students will also learn the principles and practices of pre-discharge examinations, and the psychological aspects of the injury and rehabilitation process.

Year 4: Contemporary Issues for Sport and Exercise Therapy Practice

As a practicing sports therapist, the clients students will potentially encounter will rarely be textbook cases and there will be situations where specialist knowledge is required. The sports therapy skills learnt at levels 4 and 5 will be consolidated and critically reviewed within more multidimensional higher level scenarios. This module will prepare the student for the complexities of working as a sports therapist in the “real world”. The legal, ethical and practical considerations of working with a variety of populations including the elderly, young, disabled athletes, different cultures amongst others will be addressed. Advanced topics such as diagnostic imaging techniques, clinical referral and postoperative care will also be covered within the context of these different populations.

Students will also explore professional aspects of sports therapy such as good business practice, legal and moral responsibilities of professional practice. Students will also have the opportunity to put their mentoring skills into practice by supporting other Level 4 and 5 students on the course.

Year 4: Professional Practice in Sport Therapy

The module seeks to provide the student with real-world practical experience of assessment, recognition, diagnosis, treatment, management and rehabilitation of injury. In advance of this module, students will plan and secure one or more relevant supervised work placements to be completed during the module. There will be some support with regards to securing placements outside of the University, but identification of placement opportunities will be primarily student-led. All work placements will require approval by the course or module leader ahead of any work based activity occurring.

To complete this module, students will draw upon learning completed in previous modules and therefore be demonstrating the Society of Sport Therapy Standards of Proficiency. Students will complete a min. of 200 hours of supervised clinical placement in a sport therapy and/or exercise related environment. At least 50 of these hours will take place within the University's Sport Therapy clinic. A limit of no more than 150hrs can be accrued/logged before the commencement of TRI2.

In addition to the key text identified below, specialist literature will be identified on our ReadingLists@Anglia module site – and will be extensively used to support the learning outcomes.

Year 4: Undergraduate Research Project

The module provides the student with the opportunity to select an area within Sport and Exercise Sciences or Sports Coaching and Physical Education and to determine and apply ethical standards, undertake an in-depth review of the literature, and create a research questions derived from the review. Furthermore this module provides an opportunity to develop, conceptualise, execute, analyse and reflect upon their own independent research.

The module is supported by 4 x 1 hour taught sessions where project management and development will be addressed. Additionally a nominal 12 hours are allocated for personal supervision during the module.

Year 4: Advanced Strength and Conditioning

This module provides the opportunity to build on wider exercise science and previous learning to investigate the latest evidence based practice on Strength and Conditioning (S&C). You will learn, experience and analyse free weight lifting techniques with specific focus on more complex lifts and the derivatives associated with them. You will learn to coach performers through this process and also consider the value (of these lifts) within the training cycle. Through observation of performers, you will understand the coaching cues in order to identify ineffective movement patterns. You will also develop a high level of knowledge

to enable you to practically suggest and present appropriate interventions for a performer of varying ability. The use of technology/micro technology for monitoring performance will be investigated and you will review the value of this method of data collection for the exercise and conditioning professional. You will investigate how training may change when working with different performers with varying abilities. Being able to change your professional practice relative to the specific population you are working with is a critical skill for the conditioning coach. Learning about the needs and issues to consider when training special populations will permit you to be a more proficient in the area.

Year 4: Sport & Exercise Sciences Tutorial - Level 6