# University of Birmingham Crest

# **School of Sport, Exercise & Rehabilitation Sciences**

# **2021-22 Academic Year**

## **Module Availability for**

## **Incoming Study Abroad and Exchange Students**

# **Important Information: Please read carefully**

Module availability refers to the period of time an exchange student is with us:

“Semester 1” (September through January) only\*

“Semester 2” (January through June) only

“Full Year” (September to June)

*(\*some modules have alternative assessments for these students - which may mean a number of exams & coursework before Christmas, so please be aware that there may be assessment bunching at this time)*

Please read through the availability of modules carefully before choosing your options.

Some modules may require previous learning in an area at your home institution.

**Important notes**

* Module title, content, assessment, delivery & staffing may be subject to change a part of ongoing Quality Assurance processes
* Timetables are not confirmed until the start of term and may be subject to change due to unforeseen circumstances.
* Exchange students may be limited within certain modules through a numbers capping process.
* Students who attend in Semester 1 (September to January) may need to undertake slightly different assessments before they leave for Christmas if a final exam is normally stipulated. This will mean additional assessment for those modules.
* Students attending in Semester 2 (Spring term - January to June) are expected to attend the summer exams in June).
* Those attending the Full Year are expected to be at University from September to June. Absences must be confirmed with the UoB Study Abroad Office.
* It is not possible to resit assessments in Year 3 modules.
* Resit assessments for Year 1 & 2 modules normally take place at the end of August.
* Whilst we attempt to keep this document as up to date as possible, please check the date on the footer & send any queries to Carol Barry-Southwick ( sportx-ug3@contacts.bham.ac.uk) or Valerie Queeley (sportx-ug2@contacts.bham.ac.uk) in School of Sport, Exercise and Rehabilitation Sciences.
* Enrolment typically requires you to have a specific level of background knowledge in the subject area. You will need to demonstrate that you have taken the relevant equivalent modules at your home institution in order to be enrolled. We will review your home institution transcript during Welcome Week before your studies commence.

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# **Year 1 Modules**

## **Semester 1 Modules**

### **Human Physiology and Exercise**

**32468 (LC) Sem 1**

**20 credits**

Module Leader: Dr Rebekah Lucas

Module Description:

An introductory course of lectures in human physiology covering the functions of the nervous, cardiovascular and respiratory systems, the kidney, fluid balance and thermoregulation. Aims: To provide a course of study in human physiology, and introduce students on the principles of physiological regulation as this applies in healthy resting conditions, exercise and disease. This module provides the backbone of knowledge for advanced study in exercise and health physiology and in specific physiological systems in subsequent years.

Module Assessment:

Coursework 50%

Exam 50%

### **Functional Anatomy**

**32457 (LC) Sem 1**

**20 credits**

Cannot be taken with Movement & Learning

Module Leader: Dr Craig McAllister

Module Description:

This module provides a comprehensive course in functional anatomy including lectures on the central nervous system and musculoskeletal anatomy and basic biomechanical principles. Small-group practical sessions with the support of PG Physiotherapy students will apply the lecture knowledge within a range of sport and exercise situations. The regular provision of homework sheets in conjunction with online resources will be used to guide independent study. Two separate laboratory classes will allow students to develop practical skills and data analysis techniques. This module provides the backbone of knowledge for advanced study in modules related to human movement topics in subsequent years.

Module Assessment:

Coursework 50%

Exam 50%

### **Movement and Learning**

**32452 (LC) Sem 1**

**20 credits**

Cannot be taken with Functional Anatomy

Module Leader: Dr Matt Bridge

Module Description:

In this module students will be introduced to movement and learning as it relates to sport coaching and physical education. The module will also provide students with a broad knowledge and understanding of human anatomy as it relates to movement. Alongside this, it will consider how movement is created and controlled through the main theories of motor control and learning. Students will be introduced the use of movement analysis in coaching and physical education and some of the tools and techniques to analyse movement will be introduced. Students will be required to translate the theoretical content into practical advice for coaches and PE teachers

Module Assessment:

Class test 50%

Online tasks 15%

Analysis of a movement 35%

## **Semester 2 Modules**

### **Sport, Exercise and Health Psychology**

**32475 (LC) Sem 2**

**20 credits**

Module Leader: Dr Sally Fenton

Module Description:

This module will explore the individual and social environmental factors that underlie participation and performance in physical activity contexts. Specifically, it will cover: psychological skills which are fundamental in sport and exercise settings, including theories of anxiety, and its effects on performance regulation; key theories used to enhance performance and physical activity participation in sport and exercise settings; the role of physical activity and exercise engagement for improving psychological health and well-being; and factors which are central to promoting physical activity and exercise in different groups

Module Assessment:

Coursework 50%

Exam 50%

### **Exercise Biochemistry**

**32455 (LC) Sem 2**

**20 credits**

Module Leader: Dr Martin Whitham

Module Description:

This module will provide a comprehensive introduction to biochemistry principles in relation to physical activity, exercise and sport performance.

Specifically, this module covers: the structure and function of important biomolecules including carbohydrates, fats, proteins and nucleic acids; the structure and function of organelles; the biochemical characteristics of muscle fibres; the structure and function of muscle fibres; membrane transport; proteins as enzymes, receptors, antibodies; major pathways of energy metabolism and how these are regulated; the mobilisation and utilisation of fuels for exercise and the hormonal responses to exercise; examples of important techniques in biochemistry

Module Assessment:

Coursework 50%

Exam 50%

### **Introduction to Science Communication**

**34036 (LC) Sem 2**

**20 credits**

Module Leader: Prof. Vikki Burns

Module Description:

This module will support students to develop their skills in science communication, through an immersion in the school research environment. Students will hear presentations from research experts in the School, and how our work connects to global challenges, as well as exploring specific research areas with their personal tutors. They will produce written and oral pieces, based on these experiences, including writing in exam conditions. In addition, they will be examined on the content of the research presentations. To support their coursework, they will critically examine existing examples of effective and less effective written and oral practice, and use this insight to develop their own skills. The module includes experience in self- and peer-assessment, responding to feedback, plagiarism, and referencing. Students will be required to work in groups, and will receive training in group work skills.

Module Assessment:

Group recorded presentation 30%

Individual short essay 40%; 500 words

Exam 30%

### **Introduction to Sport Science**

**36180 (LC) Sem 2**

**20 credits**

Module Leader: Neil Dallaway

Module Description:

This module will introduce students to the fundamental concepts of sports science related to exercise physiology and metabolism. Students will apply the theoretical concepts to sports coaching and teaching practice. Topics will include cardiorespiratory, musculoskeletal, and neuroendocrine physiology and their adaptations to exercise and training. It will also include nutrition and energy systems.

Module Assessment:

MCQ - 1 30%

MCQ - 2 30%

Exam: short answer questions 40%

# **Year 2 Modules**

## **Semester 1 Modules**

### **Sport Development**

**23864 (LI) Sem 1**

**20 credits**

Module Leader: Dr Shushu Chen

Module Description:

The module focuses upon the sport development industry and the provision of opportunities, processes, systems and structures that enable and encourage people to take part in sport for recreation or to improve their performance, or to achieve wider social outcomes. It will develop students’ knowledge and understanding of youth sport development, community sports development (social inclusion and health), mass participation and elite sport development and sporting events. By the end of the module students should occupy a sound understanding of both the national and international processes at work within sport development, as well as develop a critical knowledge of the various issues involved in both the development-of-sport, and sport-for- development.

Module Assessment:

Coursework 50%

Exam 50%

### **Exercise Metabolism**

**17172 (LI) Sem 1**

**20 credits**

Module Leader: Dr Andy Blannin

Module Description:

This module examines the metabolic events that occur during and in response to exercise, from the whole body to the molecular level. You will learn the mechanisms that activate fuel mobilisation, transport and oxidation during exercise. You will discover the metabolic interactions of different organs and the mechanisms for the response to exercise and adaptations to exercise training. You will also explore the health benefits of regular activity and the underlying mechanisms.

Module Assessment:

Coursework 50%

Exam 50%

### **Control of Human Movement**

**28749 (LI) Sem 1**

**20 credits**

Module Leader: Dr Raymond Reynolds

Module Description:

The module will cover brain structure and function - including neural pathways - that control voluntary movement, posture, locomotion and sensation. The course will also introduce aspects of the psychology of sensation-action coupling and motor control. Applications to pathology and sport will be covered.

Module Assessment:

Coursework 50%

Exam 50%

### **Innovation and Professional Practice**

**23862 (LI) Sem 1**

**20 credits**

Module Leader: TBC

Module Description:

The module adopts a model-based approach to sports instruction. Drawing from theories of learning, students will be encouraged to consider critically a range of instructional models (e.g. TGFU, Sport Education) and how these might be applied. A model based approach offers a framework within which to consider pedagogical approaches to sport, and students will be expected to identify, plan, adapt and apply teaching/coaching models to a variety of sporting contexts.

Module Assessment:

Essay 70%

MCQ 30%

## **Semester 2 Modules**

### **Applied Exercise Physiology**

**35288 (LI) Sem 2**

**20 credits**

Module Leader: Dr Sam Lucas

Module Description:

This module will study physiological function during acute exercise stress - from the level of the cell to the whole body - with some consideration for the influence of different intensities, durations and modes of exercise upon physiological function. We will also study the physiological response to repeated exercise training sessions, so as to characterise the training adaptations to different forms of exercise (e.g. aerobic, anaerobic, strength). This will also involve us briefly considering exercise prescription guidelines and the structure of training programs. The implications and effects of exercise in adverse environments (e.g., heat and hypoxia) will also be examined, along with responses and considerations for specific populations (e.g. elderly, spinal cord injured, female athletes).

Module Assessment:

Coursework 50%

Exam 50%

### **Sport Nutrition**

**29267 (LI) Sem 2**

**20 credits**

Module Leader: Dr Gareth Wallis

Module Description:

This module, Sports Nutrition, is concerned with the study and practice of nutrition and diet as it relates to athletic performance. The module covers the key principles of sports nutrition: carbohydrates for training and competition, fluid and electrolyte needs, dietary protein for athletes, dietary fat and performance, micronutrients and supplements. A particular focus is given to the science behind nutritional recommendations for athletes, as a good scientific understanding is critical to be able to carefully interpret new advances in Sports Nutrition and offer evidence-based advice to sports performers. A further focus is given to the communication of sports nutrition science, as effective and accurate scientific communication is key to ensuring athletes and the wider public receive and can understand credible information.

Module Assessment:

Coursework 50%

Exam 50%

### **Data science and statistical analyses**

**34035 (LI) Sem 2**

**10 credits**

Module Leader: Dr Sang-Hoon Yeo

Module Description:

This module introduces the key principles and approaches to data science and statistical analysis. It will cover data management, presenting data, choosing and performing analytic tests.

Module Assessment:

Course work 50%

Exam 50%

### **Sport and Performance Psychology**

**35289 (LI) Sem 2**

**20 credits**

Y1 Sport, Exercise and Health Psychology has to be taken as a pre-requisite to this module

Module Leaders: Dr Sarah Williams

Module Description:

This module examines key topics in the psychology of sport and performance. It includes relevant theories, evidence and interventions designed to understand how athletes learn, optimize and robustify their performance, especially under pressure to perform, as well as how performance can break down. The theories could include anxiety theory, processing efficiency theory, reinvestment theory, theory of challenge and threat, social interdependence theory, neural efficiency theory, constrained action and self-invoking trigger theories of attentional focus, perceptual and kinematic/postural theories of gaze control. The interventions to protect against performance failure under pressure could include: implicit learning, quiet eye training, neurofeedback training, imagery training, goal setting training, self-regulation training, and self-talk training.

Module Assessment:

Individual infographic 50%

Group report 50%; 1500 words

# **Year 3 Modules**

## **Semester 1 Modules**

### **Moral Behaviour and Doping in Sport & Exercise**

**35280 (LH) Sem 1**

**20 credits**

Module Leader: Dr Maria Kavussanu

Module Description:

This module will examine moral behaviour (i.e., a collective term representing actions that have either positive or negative repercussions for others) and doping (i.e., use of illicit image and performance enhancing substances and methods) in sport and exercise. We will consider individual difference and social-environmental factors that may lead athletes to act in a prosocial or antisocial manner when they take part in sport, as well as the consequences of such actions for the recipient. With respect to doping, psychological predictors of doping in sport and exercise will be discussed including aesthetic (i.e., body image) and performance (i.e., strength, power, and endurance) motives. Relevant contemporary theory and research will be discussed, and interventions aimed at promoting prosocial and reducing antisocial behaviour (including doping) will be critically evaluated. In sum, this module will integrate theory and evidence from a range of relevant disciplines to develop students’ knowledge and understanding on key modern-day issues relevant to moral behaviour and doping in physical activity contexts.

Module Assessment:

Course work 50%

Exam 50%

### **Exercise as Medicine**

**27534 (LH) Sem 1**

**20 credits**

Module Leaders: Dr Jet Veldhuijzen van Zanten

Module Description:

By the end of this module, students should be able to: discuss and design exercise regimes for (clinical) populations; discuss and design exercise promotions for (clinical) populations; discuss the physiological and psychological benefits of exercise; discuss the associations between physiological and psychological benefits of exercise.

Module Assessment:

Course work 50%

Exam 50%

### **Analysis of Motor Performance**

**35271 (LH) Sem 1**

**20 credits**

Module Leaders: Dr François-Xavier Li

Module Description:

This module provides a comprehensive course in analysis of motor performance. Motor control is the basis of any movement, being in sport or in daily life. In most cases we aim to improve and optimise our movements to be more efficient. In order to improve it is essential that we can record and analyse our performance. Utilising scientific movement analysis methods to acquire reliable data for analysis we can understand where progress can be made. This can then inform strategies to enhance motor performance and learning. Case studies and data analysis will form the backbone of the assessment.

Module Assessment:

Course work 40%; 1,250 words

Course work 60%; 2,000 words

### **Global Challenges in Sport and Physical Education**

**36174 (LH) Sem 1**

**20 credits**

Module Leaders: Dr Frank Herold

Module Description:

This module will explore some of the global challenges which influence and impact upon the practice of teaching and coaching in Sport, Physical Education and Physical Activity contexts. The module is relevant for students considering a career in teaching, coaching, sport or health, and will help students to (a) evaluate and understand key factors that impact upon and individual’s and society’s engagement in sport, coaching and physical activity, (b) evaluate and critique pedagogical experiences to overcome challenges and extend or enhance physical activity engagement, and (c) critically appraise some of the key theories/practice models using sociological and pedagogical concepts. Overall, students will explore current global challenges, reflect upon their own individual experiences, and explore innovative approaches to pedagogical practice and personal development as global citizens of the future.

Module Assessment:

Course work 50%

Exam 50%

### **Performing in Extreme Environments**

**35282 (LH) Sem 1**

**20 credits**

Module Leader: Dr George Balanos

Module Description:

The physiological adaptations that take place due to exposure to challenging environmental conditions provide clear insight into normal physiology and homeostatic mechanisms. The module will cover three main areas: altitude, pressure (diving, g-force, weightlessness) and cold/hot environments. In each section of the module the physiological adaptations that occur in challenging environmental conditions will be described before exploring the cost that is imposed on the human body during exercise in these conditions. The module will also cover the strategies that are commonly employed to protect human performance in these conditions and how, in some instances, environmental conditions are exploited to enhance sporting performance. Each section will have seminars and a practical component.

Module Assessment:

Course work 50%

Exam 50%

## **Semester 2 Modules**

### **Athletic training and conditioning**

**35274 (LH) Sem 2**

**20 credits**

Module Leader: Dr Andy Blannin

Module Description:

This module will extend students’ knowledge of applied exercise physiology. Students will critically assess the scientific evidence around athletic training and conditioning programme design in order to critique common practice, established ‘knowledge’ and innovative approaches. A particular focus will be given to the development of both theoretical and practical expertise.

The following key training principles will be covered:

- Assessment/evaluation

- Periodization

- Injury prevention/overtraining

- Rehabilitation

- Specific populations

Module Assessment:

Coursework 40%; group presentation

Coursework 60%; 1,500 words

### **Clinical Neuroscience and Rehabilitation**

**35277 (LH) Sem 2**

**20 credits**

Module Leaders: Dr David Punt

Module Description:

Neurological diseases (e.g. stroke, Parkinson’s disease) and brain injury are major causes of disability, typically affecting how people move and function.  Healthcare provision in the area is dominated by rehabilitation.  The field of neuroscience has developed rapidly in recent years and our improved related knowledge should offer hope and promise for individuals affected by neurological disease.  However, the challenges of translating promising findings from the neurosciences into real world benefits for individuals has proved difficult and represents a major current and future challenge for research and practice.  This module responds directly to this challenge, introducing students to the behavioural (e.g. how movement is affected) and neural (e.g. how the brain adapts) consequences of neurological damage and how an understanding of these can and has led to progress.  In doing so, the focus of the module will be on how behaviour and the nervous system is affected by disease or injury and how it responds and adapts as a result of time (e.g. natural recovery, degeneration) and interventions (e.g. specific forms of exercise).

Module Assessment:

Lab report 50%; 1500 words

Exam 50%

### **Sport and Mental Health**

**35285 (LH) Sem 2**

**20 credits**

Module Leader: Prof. Jennifer Cumming

Module Description:

Mental health problems are the largest single source of disability (23%) in the UK and is a major cause of disease burden worldwide. Participating in sport offers opportunities for developing good mental health and well-being, but elite athletes can be susceptible to mental health problems and are less likely to seek support for these issues. The aim of this module is to examine how the culture and pressures of competitive sport contributes to poor mental health and the specific risk factors faced by elite athletes, coaches, and sport officials. We will also explore the protective factors available through sport and critically appraise the evidence-based of sport-specific interventions for improving athletes’ optimal functioning and well-being.

Module Assessment:

Course work 50%

Exam 50%

### **Metabolic Perspectives in Exercise and Nutrition**

**35279 (LH) Sem 2**

**20 credits**

Module Leader: Dr Leigh Breen

Module Description:

This module will present current, cutting edge research to offer students the opportunity to explore metabolic perspectives in exercise and nutrition.

Students will engage with research studies across a broad range of topics to understand how exercise and nutrition can impact upon metabolic aspects of health and performance.

Specifically, topics will include: exercise performance and adaptation, ageing, obesity, cardiovascular and brain health.

Learning and development will be supplemented with snapshots of research, where staff will present details of their own research studies, to explore elements of study design, data analysis and conclusion.

Module Assessment:

Course work 50%

Exam 50%