APPLIED SPORTS SCIENCE AND HIGH PERFORMANCE SPORT
Courses and Research
School of Exercise Science 2016
The School of Exercise Science is located on four campuses – Melbourne, Sydney (Strathfield), Brisbane and Canberra. Researchers, lecturers and clinical supervisors conduct research in the breadth of exercise science, ranging from sports science, elite athlete preparation and athlete career development, leadership, to the clinical applications of exercise in healthy populations, those with chronic disease, and/or injured populations.

The School of Exercise Science has one of the largest networks of industry partners in the country. These organisations provide professional (workplace) experiences to undergraduate students, industry internships for postgraduate coursework students, and industry-embedded research projects for higher degree research students. In the 2015 Excellence in Research for Australia awards, a government initiative that assesses research quality in Australian universities, ACU received the highest possible score, rated as well above world standard in the Human Movement and Sports Science field of research.

Staff and students of the School are committed to the ongoing development of unique programs which use sport and exercise as a vehicle for community development.

ELITE ATHLETE FRIENDLY UNIVERSITY

ACU is one of the original signatories to the Elite Athlete Friendly Universities scheme. Sponsored by the Australian Sports Commission, this scheme recognises the difficulties in combining a career as an athlete at the highest level, whilst at the same time pursuing an academic program contributing to the athletes’ personal and professional career development. The university is extremely proud of its students who manage to compete at the highest level while still pursuing their academic study. At the same time ACU is proving increasingly attractive to a large number of the nation’s best young athletes who are looking for a supportive and very professional environment within which to pursue their plans for further study.

POSTGRADUATE COURSES IN HIGH PERFORMANCE SPORT

The high performance sport industry is a global, multi-billion dollar entity that provides employment opportunities for a range of professions including sport scientists, coaches, athletes and managers. At the heart of this industry is the conditioning of the athlete with the aim of optimising individual and team performance for successful on-field outcomes, as well as sustainable operational success for the organisation.

ACU’s postgraduate courses in High Performance Sport develop the knowledge, understanding and skills for a career in high performance sport. Using cutting-edge interactive technologies for online delivery wherever you are in the world, cross-disciplinary study units bring together current and new knowledge from a range of professions within the industry. The curriculum of each course is developed and delivered by internationally-renowned experts, with a focus on world’s best practice, in an ethical manner characterised by a concern for respect, equity and social justice.

An intensive, on-campus component is incorporated as a one-week offering at the commencement of each course. This component allows students to interact directly with the curriculum and its staff, while providing the added opportunity to network directly with industry specialists and other students in the course.

HIGH PERFORMANCE SPORT DEGREES

- Master of High Performance Sport
- Graduate Diploma in High Performance Sport
- Graduate Certificate in High Performance Sport
- Graduate Certificate in Performance Analysis
- Graduate Certificate in High Performance Sport Leadership

All Graduate Certificates (above) are entry pathways into the Master of High Performance Sport and Graduate Diploma in High Performance Sport with full credit.

The courses are aimed at people already in the workforce as well as graduating students. With the majority of the course content online, this provides flexible learning pathways that accommodate professional employment commitments; internationally-based students; full-time or part-time enrolments; specific career and industry needs of individual students.

The courses prepare graduates for the following roles:

- Sports scientist
- High performance manager
- Strength and conditioning coach
- Professional coach
- Fitness coach
- Rehabilitation coach
- Performance analyst
- Fitness advisor
- Sports science manager
- Other leadership/management roles
MASTER OF HIGH PERFORMANCE SPORT

The Master of High Performance Sport includes relevant professional practice related learning, independent research and project work, and an opportunity for an industry-based internship. The Master of High Performance Sport can also provide a pathway into further research study (e.g. PhD).

A series of study units focus on the technological advances for athlete monitoring, advanced principles of strength and conditioning, and the relationships between fatigue, adaptation, performance and injury. The application of this knowledge to the planning and delivery of meaningful interventions for athletes to enhance performance and reduce the likelihood of injury and illness, using appropriate techniques of analysis to accurately interpret competition and training information, with advanced information literacy skills to communicate ideas and outcomes, are essential for a professional working in the high performance sport environment. Elective units include:

- Project Design for High Performance Sport
- Theoretical Foundations of Performance Analysis
- Application, Measurement and Evaluation in Performance Analysis
- Performing Under Pressure
- The Business of High Performance Sport
- Team Dynamics
- Athlete Development: Strategies, Capabilities and Wellbeing

Elective units delivered face-to-face on ACU’s Melbourne and Strathfield (Sydney) campuses include:

- Neurological Analysis, Prescription and Rehabilitation*
- Musculoskeletal Analysis, Prescription and Rehabilitation*
- CardioMetabolic Analysis and Rehabilitation*
- Occupational Assessment and Rehabilitation*
- Applied Anatomy for Clinical Exercise Physiologists*

Fulltime Program Map for Master of High Performance Sport

<table>
<thead>
<tr>
<th>SEMESTER 1</th>
<th>Strength and conditioning for the high performance athlete</th>
<th>Technology in high performance sport</th>
<th>Leadership and culture in high performance settings</th>
<th>Data analysis and interpretation for high performance sport</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEMESTER 2</td>
<td>Fatigue, recovery, adaptation and performance</td>
<td>Performance and injury prevention and management</td>
<td>Performance Nutrition</td>
<td>Elective</td>
</tr>
<tr>
<td>SEMESTER 3</td>
<td>Major Industry Project or Minor Industry Project and/or Industry Internship and/or elective units</td>
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GRADUATE CERTIFICATE IN PERFORMANCE ANALYSIS

Performance Analysis is a rapidly growing area of specialisation in the high performance sport industry, both nationally and internationally. Knowledge and skills in performance analysis are becoming an expectation for industry employment. An intensive, on-campus component is incorporated as a four-day offering at the commencement of the course.

<table>
<thead>
<tr>
<th>SEMESTER 1</th>
<th>Theoretical Foundations of Performance Analysis</th>
<th>Application, Measurement and Evaluation in Performance Analysis</th>
<th>Technology in High Performance Sport</th>
<th>Data Analysis and Interpretation for High Performance Sport</th>
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GRADUATE CERTIFICATE IN HIGH PERFORMANCE SPORT LEADERSHIP

The high performance sport industry is increasingly focused on developing employees and athletes with strong leadership skills and training in ethics. Proposed regulatory changes within the industry may make these skills a necessity. The Graduate Certificate in High Performance Sport Leadership has been designed specifically to address these industry demands. An intensive, on-campus component is incorporated as a four-day offering at the commencement of the course.

<table>
<thead>
<tr>
<th>SEMESTER 1</th>
<th>Leadership and Culture in High Performance Settings</th>
<th>Athlete development: Strategies, Capabilities and Wellbeing</th>
<th>The Business of High Performance Sport</th>
<th>Team Dynamics</th>
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For further information:
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Follow twitter.com/ACUMPHPS
In applied sports science and high performance sport, the research profile of the School of Exercise Science has grown in international reputation around its staff expertise, its collaborations with elite sporting organisations, and its expanding postgraduate student enrolments. In the 2015 Excellence in Research for Australia awards, ACU’s research in Human Movement and Sports Science received a top rating, ranked as well above world standard.

**STAFF PROFILES**

**DR CRAIG DUNCAN**

Course Coordinator (Graduate Certificate in Performance Analysis)

Craig is one of Australia’s leading sport scientists with a passion for safe, professional, and ethical standards in the industry. His innovative and holistic approach to player management has enabled high performance teams to maximise performance and lower injury rates in their professional athletes. Dr. Duncan was working with Sydney FC when they took out the A-League Championship with the Western Sydney Wanderers when they became the first Australian side to win the Asian Champions League in 2015, with the NSW State of Origin team for their drought-breaking series win in 2014, and with the Socceroos when they became Asian Champions in 2015. He was named Sport Scientist of the Year by Exercise and Sport Science Australia (ESSA) in 2014.

**DIRK MELTON**

Course Coordinator (Graduate Certificate in High Performance Sport Leadership)

Dirk has spent the last 10 years working as a senior executive within the sports, media and entertainment sector. Roles have included Commercial Director at Ticketek, Head of Marketing and Consumer at St George Illawarra Dragons, Chief Operating Officer at the Canterbury-Bankstown Bulldogs, CEO at Sydney FC, and GM Strategy at NSW Rugby League.

Dirk is widely acknowledged within the sports industry for his capabilities in strategic thinking, research and analysis, planning and organizing, facilitating change, and brand management. Achievements associated with these competencies lead to achievements ranging from the turnaround of the Bulldogs brand and commercial program, record game day attendances for the Dragons in a losing season, the first person in sports marketing to gain access to both the Avatar and Star Wars brands and the second for the UNICEF brand, through to the NSW State of Origin team ending their series drought.

Currently, Dirk is HP strategic advisor to the Australian Rugby Union, and is completing his doctoral thesis on the importance of systems thinking and integration within professional sport.

**TANIA GALLO – PHD STUDENT**

Tania’s industry-based PhD is embedded with North Melbourne Football Club. She is exploring the effectiveness of commonly practiced methods for monitoring athletes in elite Australian Football. Her work aims to develop an analysis framework for use in high performance sport, for monitoring the fatigue-recovery cycle and its influence on athletic performance. Of her time at ACU “My experience as a student at ACU has only been positive. It was through ACU that I got my position at an AFL club that was looking for research students. As a result from this work, I was encouraged to continue my research with the club and begin a PhD. I feel very privileged to be in the position I am, working with an elite professional sports team and I credit ACU for that. I have been supported every step of the way, being given resources, scholarships and funding, and access to some of the leaders in my area of research.” Tania aims to continue working in the AFL or another elite team sport environment as a sport scientist.

She enjoys the physical preparation component of elite competitive sport, with a career aspiration of managing a high performance department of a professional team sport.

**RICH JOHNSTON – PHD STUDENT**

Rich’s PhD work concerns fatigue following rugby league training and competition, aiming to identify causes, implications, and potential methods of reducing postgame fatigue. His first industry-based project assessed the relationships between markers of fatigue and performance in rugby league, with his second and future projects assessing the influence that physical fitness and physical contact has on fatigue and muscle damage responses. Rich travelled from the United Kingdom to commence his PhD at ACU in 2012. What made him choose ACU? “Despite offers from the UK and other Australian institutions, I chose ACU in order to work with Dr. Tim Gabbett. Having the opportunity to work with a world leading sport scientist on a daily basis was too good an offer to turn down. The ACU campus is a great place to work, with its friendly staff and atmosphere.” Once Rich completes his PhD, he is aiming for a career as a sport scientist working within professional sport, either in Australia or the UK.

**JO CLUBB – MASTER OF HIGH PERFORMANCE SPORT STUDENT**

Jo enrolled as a student in the Master of High Performance Sport (MHPS) whilst working as a Sports Scientist at Chelsea Football Club in the UK. Whilst completing the MHPS, Jo also worked as the Senior Sports Scientist at Brighton and Hove Albion Football Club. ACU was Jo’s choice because of the dynamic online delivery of the course work and being able to study whilst continuing to work full-time in the industry. She travelled from the UK to Melbourne for the intensive week where she was awestruck by the number of quality presenters. She found that the range of units offered helped her develop a breadth of “real world” knowledge through her exposure to an abundance of industry experts, partaking in online student-led forums, and participating in conference calls with world class lecturers. Jo achieved her personal goal to improve her research skills working directly with Dr Stuart Cormack on a project and preparing it for publication. As Jo completes her MHPS, her reflection on the experience is extremely positive, and she attributes her latest career move to Buffalo Sabres in the National Hockey League (professional Ice Hockey League in the USA and Canada) in part to the opportunities and networks she created whilst completing the MHPS.
In recent years, the School of Exercise Science has worked with the following partners in sports science delivery, industry experience, and research collaborations:

- International Cricket Council
- Soccerroos
- Australian Institute of Sport Combat Centre of Excellence
- National Institute of Sport Malaysia
- Irish Rugby Union
- Tennis Australia
- Cricket Australia
- Australian Jockey Association
- Australian Rugby Union
- NSW Rugby League
- Gymnastics Australia
- Australian Ballet School
- Queensland Academy of Sport
- Victorian Institute of Sport
- New South Wales Institute of Sport
- NSW Racing
- Queensland Rugby League
- Melbourne Football Club
- North Melbourne Football Club
- St Kilda Football Club
- Port Adelaide Football Club
- Greater Western Sydney FC
- Brisbane Lions Football Club
- Collingwood Football Club
- Melbourne Rebels Rugby Union
- Melbourne Storm Rugby League Club
- Norths Devils Rugby League Football Club
- Western Sydney Wanderers FC
- Melbourne Victory FC
- Brisbane Roar FC

**HIGH PERFORMANCE SPORT INDUSTRY PARTNERS**

**A SELECTION OF RECENTLY PUBLISHED WORKS IN APPLIED SPORTS SCIENCE BY ACU STAFF**

Bachelor of Exercise and Sports Science
Bachelor of Physical Activity and Health Science
Bachelor of Exercise and Sports Science (Honours)
Bachelor of Exercise Science
Bachelor of Business Administration
Bachelor of Public Health
Bachelor of Teaching
Bachelor of Exercise Science*

LOCATION:
Offered in Melbourne, Strathfield (Sydney) and Brisbane
*Offered in Melbourne, Brisbane and Canberra.

Enquiries:
Dr Doug Whyte, National Honours Coordinator
Tel: (03) 9953 3557
E: doug.whyte@acu.edu.au

OTHER POSTGRADUATE COURSES OFFERED BY THE SCHOOL

Master of Clinical Exercise Physiology
The course sequence provides advanced professional preparation in the discipline of exercise science, in particular exercise prescription in a variety of settings. Students will gain knowledge and appropriate skills in screening, assessment and provision of exercise intervention in multiple applications across the lifespan, including prevention and management of chronic disease(s), workplace conditioning and sport injury rehabilitation. (*Not offered in Brisbane). This course has “Exercise Physiology” accreditation with ESSA.

Enquiries:
Strathfield (Sydney) NSW
Dr Michael Baker, Course Coordinator
Tel: (02) 9701 4333
E: michael.baker@acu.edu.au

Melbourne VIC
Dr Vanessa Rice, Course Coordinator
Tel: (03) 9953 3032
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HIGHER DEGREE RESEARCH OFFERINGS:
- PhD
- Master of Health Science (Exercise Science)
- MPhil

Enquiries:
Professor Geraldine Naughton
Tel: (03) 9953 3034
E: geraldine.naughton@acu.edu.au

UNDERGRADUATE COURSES OFFERED BY THE SCHOOL

Bachelor of Exercise and Sports Science
The course focuses on the roles and benefits of exercise and healthy lifestyles. These are explored in the contexts of elite sport to recreational physical activity as well as community health and wellbeing. Qualify with a strong academic base in exercise prescription, sports performance analysis and physical activity across the lifespan, in the context of the scientific principles of fitness and health and their application. Students have the opportunity to specialise by choosing from a range of elective choices including advanced studies in biomechanics, motor control, sports psychology, exercise rehabilitation, and athlete preparation and programming.

This course has “Exercise Science” accreditation with ESSA.

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Melbourne VIC
Dr Vanessa Rice, Course Coordinator
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E: vanessa.rice@acu.edu.au

Bachelor of Physical Activity and Health Science
The course focuses on the role and benefits of exercise and healthy lifestyles. Qualify with a strong academic base in the exercise and health science disciplines of exercise physiology and nutrition, biomechanics, motor control and skill acquisition, and psychology of sport and exercise. Students have the opportunity to specialise in a range of elective choices including athlete preparation and programming, outdoor recreation, health promotion, sports management, or advanced units in exercise science disciplines.

Further information:
www.acu.edu.au/exercise-science

Bachelor of Exercise and Sports Science (Honours)
This course is designed to provide an in-depth academic program in the discipline of exercise science. It provides the opportunity to develop skills in undertaking research, and to prepare for higher degree studies at the masters and doctoral level. Students will also be required to attend and participate in graduate seminars organised by the School.

Enquiries:
Dr Doug Whyte, National Honours Coordinator
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Further postgraduate courses offered by the school...
For further information contact:

High Performance Sport Degrees
Tel: (03) 9230 8256
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Web: www.acu.edu.au/high_performance_sport
Twitter: twitter.com/ACUMHPS

Research Degrees
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Email: geraldine.naughton@acu.edu.au