

SPOR H8013: Load Monitoring in Exercise and Sport

Module Details	
Module Code:	SPOR H8013
Full Title:	Load Monitoring in Exercise and Sport APPROVED
Valid From::	Semester 1 - 2019/20 (June 2019)
Language of Instruction:	English
Duration:	1 Semester
Credits::	5
Module Owner::	Michael McCorry
Departments:	Unknown
Module Description:	This module examines some current and emerging technologies and techniques used to monitor and analyse external and internal training loads experienced by athletes during physical performances. The module integrates theory and practical application to advance the knowledge and experience of students in this area.

Module Learning Outcome	
On successful completion of this module the learner will be able to:	
#	Module Learning Outcome Description
MLO1	Critically evaluate the concept of load monitoring in sports and exercise.
MLO2	Discuss new and emerging techniques used to assess training load in exercise and sport.
MLO3	Collect, analyse and interpret commonly used performance monitoring techniques using a flexible and user-friendly interface
MLO4	Apply statistical techniques to understand relationships within quantitative data
MLO5	Apply the practical aspects of data management and data governance in accordance with General Data Protection Regulations (2018)
Pre-requisite learning	
Module Recommendations <i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named DkIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
No recommendations listed	

Module Indicative Content
Introduction to Athlete Monitoring Technology History, development and application of athlete performance monitoring technology.
Energy Systems and Fatigue Mechanisms Physiological underlying principles associated with the use of energy for exercise and the mechanisms underlying acute and chronic fatigue in exercise and sport.
Monitoring Load in Athletes Use of GPS, accelerometry and internal load monitoring techniques in individual and team sports. Theoretical concepts in internal and external load measurement and monitoring in exercise and sport.
Data collection Practical application - ethical collection, processing and presentation of human performance data to monitor and improve sport and exercise performance
Data Management Students employ commonly used statistical methods to interpret quantitative data.
Data Governance Analysis of collected data and contextual application to training and performance. Dissemination of results in accordance with ethical principles and GDPR (2018).

Module Assessment	
Assessment Breakdown	%
Project	100.00%
Module Special Regulation	

Assessments

Full Time On Campus			
No Course Work			
Project			
Assessment Type	Project	% of Total Mark	100
Marks Out Of	100	Pass Mark	40
Timing	S1 Week 12	Learning Outcome	1,2,3,4,5
Duration in minutes	0		
Assessment Description Students will be given an anonymised data set, based on a team performance. Students must use research literature and analytical techniques to extract, analyse, interpret and communicate this data in a meaningful way.			
No Practical			
No Final Examination			

Part Time On Campus			
No Course Work			
Project			
Assessment Type	Project	% of Total Mark	100
Marks Out Of	0	Pass Mark	40
Timing	n/a	Learning Outcome	1,2,3,4,5
Duration in minutes	0		
Assessment Description Students will be given an anonymised data set, based on a team performance. Students must use research literature and analytical techniques to extract, analyse, interpret and communicate this data in a meaningful way.			
No Practical			
No Final Examination			
Reassessment Requirement			
No repeat examination <i>Reassessment of this module will be offered solely on the basis of coursework and a repeat examination will not be offered.</i>			
Reassessment Description Students who do not meet the learning outcomes will be required to resubmit the assignment with revisions.			

Module Workload

Workload: Full Time On Campus					
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Face to face and web-based lectures and workshops on load monitoring techniques used in sport and exercise.	Every Week	2.00	2
Lecturer Supervised Learning	Contact	Face to face and lab-based data analysis	Every Week	0.50	0.5
Practical	Contact	Practical application of load monitoring in an exercise setting	Every Week	1.50	1.5
Directed Reading	Non Contact	Compulsory reading associated with each topic allocated weekly.	Every Week	2.00	2
Independent Study	Non Contact	Independent reading and use of analytical software packages	Every Week	1.00	1
Independent Study	Non Contact	Unsupervised, lab-based use of statistical tools	Every Week	1.00	1
Total Weekly Learner Workload					8.00
Total Weekly Contact Hours					4.00

Workload: Part Time On Campus					
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Face to face and web-based lectures and workshops on load monitoring techniques used in sport and exercise.	Every Week	2.00	2
Lecturer Supervised Learning	Contact	Face to face and lab-based data analysis	Every Week	0.50	0.5
Practical	Contact	Practical application of load monitoring in an exercise setting	Every Week	1.50	1.5
Directed Reading	Non Contact	Compulsory reading associated with each topic allocated weekly.	Every Week	2.00	2
Independent Study	Non Contact	Independent reading and use of analytical software packages	Every Week	1.00	1
Independent Study	Non Contact	Unsupervised, lab-based use of statistical tools	Every Week	1.00	1
Total Weekly Learner Workload					8.00
Total Weekly Contact Hours					4.00

Module Resources

Recommended Book Resources

O'Donoghue, P.. (2015), An Introduction to Performance Analysis of Sport, 1st. Routledge, UK, [ISBN: 978-0-415-739].

McGarry, T. (Ed.), O'Donoghue, P. (Ed.), Sampaio, J. (Ed.). (2013), Routledge Handbook of Sports Performance Analysis, Routledge, London, [ISBN: 978-0415673617].

Eston, R., Reilly, T., and Reilly, T.. (2008), Kinanthropometry and Exercise Physiology Laboratory Manual: Tests, Procedures and Data: Volume One: Anthropometry, 3rd ed.. Routledge, New York, [ISBN: 978-0415437202].

Eston, R., Reilly, T., and Reilly, T.. (2008), Kinanthropometry and Exercise Physiology Laboratory Manual: Tests, Procedures and Data: Volume Two: Physiology, 3rd. Routledge, New York, [ISBN: 978-0415437233].

O'Donoghue, P.. (2012), Statistics for Sport and Exercise Students, 1st. Routledge, UK, [ISBN: 978-0-415-595].

Supplementary Book Resources

Carling, C., Reilly, T. and Williams, A.M.. (2009), Performance Assessment for Field Sports: Physiological, Psychological and Match Notational Assessment in Practice, Routledge, New York, [ISBN: 978-0415426855].

National Strength and Conditioning Association. (2012), Nsca's Guide to Program Design (Science of Strength and Conditioning Series), Human Kinetics, Champaign Illinois, [ISBN: 978-0736084024].

Recommended Article/Paper Resources

Pitre C. Bourdon, Marco Cardinale, Andrew Murray, Paul Gastin, Michael Kellmann, Matthew C. Varley, Tim J. Gabbett, Aaron J. Coutts, Darren J. Burgess, Warren Gregson, and N. Timothy Cable. (2017), Monitoring Athlete Training Loads: Consensus Statement, International Journal of Sports Physiology and Performance, 12, p.161.

Halsen, S.. (2014), Monitoring Training Load to Understand Fatigue in Athletes, Sports Medicine, 44, p.139.

Torbjørn Soligard, Martin Schwellnus, Juan-Manuel Alonso, Roald Bahr, Ben Clarsen, H Paul Dijkstra, Tim Gabbett, Michael Gleeson, Martin Häggglund, Mark R Hutchinson Christa Janse van Rensburg, Karim M Khan, Romain Meeusen, John W. (2016), How much is too much? (Part 1) International Olympic Committee consensus statement on load in sport and risk of injury, British Journal of Sports Medicine, 50, p.1043.

Martin Schwellnus, Torbjørn Soligard, Juan-Manuel Alonso, Roald Bahr, Ben Clarsen, H Paul Dijkstra, Tim J Gabbett, Michael Gleeson, Martin Häggglund, Mark R Hutchinson, Christa Janse Van Rensburg, Romain Meeusen, John W Orchard, Babett. (2016), How much is too much? (Part 2) International Olympic Committee consensus statement on load in sport and risk of illness, British Journal of Sports Medicine, 50, p.1043.

Measurement in Physical Education and Exercise Science.

Journal of Strength and Conditioning Research.

Research Quarterly for Sport and Exercise.

Medicine and Science in Sport and Exercise.

This module does not have any other resources