

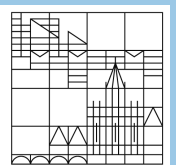
Module Manual

Master Program Sport Science

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Qualification aims of the study program

The objective of this master course is to prepare the students for pursuing a dissertation program (natural science focus) in sport science. With this academic and experience level of the M.Sc. in sport science they are also able to start a carrier in various sports related occupations (Olympic training centers, fitness studios, developers of sport equipment, associations, government etc.) instantaneously.

The graduates are familiar with the spectrum of sport science and have acquired advanced scientific research skills. They have gained a solid understanding of natural science as the basis for sport science and know the different aspects of movement and training focusing on human performance and health. They are able to assess scientific publications and transfer concluding knowledge into practical applications. The graduates of this degree program are qualified to do research in sport science institutions and facilities. They are prepared for an extended scientific post-graduation program (Doctorate), which qualifies them for holding academic positions.

Module Descriptions

Module 1 Methodology

Study Program/ Usability					
M.Sc. Sport Science					
Credits	16	Dura- tion	2 Semester	Module's contribution to the final grade	15%
Module grade	Examinations in Unit 1.3 und 1.4				
Module units	1.1 Information and Database management; 1.2 Publishing and Presenting 1.3 Advanced Research methodology I; 1.4 Advanced Research methodology II				
Qualification aims	The Students are able to retrieve academic information and handle it. They are capable to apply software tools for literature management. Students are qualified to write and present academic work (term papers, papers, posters, presentations) on a Master level. They are adept to use and apply the methodical principles of natural science and work with standard methods in sport science to conduct an experiment and collect data.				

Module unit: 1.1 Information and Database management	
Lecturer	N.N. – staff of the library.
Teaching content	Information, library, and internet based scientific resource management. Contents are: get to know the offers of the university library; library and database handling; research strategies; interlibrary loan; online research in databases (SPORTDiscuss, PubMed, PsycINFO etc.); open access; institutional repository; bibliographic management (endnote, BibTEX etc.); web services: (Internet Archives; e-journals); alerts
Forms of Teaching	Seminar
Amount of SWS	2
Credits	3
Examination/Unit completion	Unit completion
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester
Recommended Semester	1.

Compulsory / Compulsory Optional Subject	Compulsory
Module Unit: 1.2 Publishing and Presenting	
Lecturer	Dr. Sabrina Gerland, N.N.
Teaching content	Techniques for presenting and publishing scientific information. Contents are: Learn and apply the rules for academic work; develop a written paper on a sport studies related project according to the conventions (structure, methods and formatting); conduct literature research; utilize office software for scientific application; learn how to create a presentation.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	3
Examination/Unit completion	Unit completion
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester
Recommended Semester	1.
Compulsory / Compulsory Optional Subject	Compulsory
Module Unit: 1.3 Advanced research methodology I	
Lecturer	apl. Prof. Dr. Manfred Vieten
Teaching content	The methodical principles of natural science; basic statistics revisited (F-, χ^2 -, t-test, ANOVA, correlation); data management; data conditioning (filtering, spline approximation); transforms (Fourier, Wavelet). For each topic the theoretical background will be presented and all students have to master a practical application using specialized software.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	5
Examination/Unit completion	Examination
Prerequisites	None

Language	English
Time slot and frequency of the module	Winter Semester
Recommended Semester	1.
Compulsory / Compulsory Optional Subject	Compulsory
Module Unit: 1.4 Advanced Research methodology II	
Lecturer	apl. Prof. Dr. Manfred Vieten
Teaching content	Equipment (Motion capture, force plate, accelerometer, spirometer); experimental setup, data analysis, presenting the results.
Forms of Teaching	Seminar including experiments
Amount of SWS	2
Credits	5
Examination/Unit completion	Examination
Prerequisites	None
Language	English
Time slot and frequency of the module	Summer Semester
Recommended Semester	2.
Compulsory / Compulsory Optional Subject	Compulsory

Module 2 Selected Topics and Fields of Sport Science

Study Program/ Usability					
M.Sc. Sport Science					
Credits	12	Dura- tion	1 Semester	Module's contribution to the final grade	10%
Module grade	Examinations in Unit 2.1, 2.2 and 2.3.				
Module units	1.1 Sports and Health; 1.2 Sports and Movement; 1.3 Training and Diagnostics				
Qualification aims	The students know the current literature and recent findings in Sport Science dealing with human performance and health related aspects of movement and exercise in sport and rehabilitation.				

Module unit: 2.1 Sports and Health	
Lecturer	Dr. Louis-Solal Giboin, N.N.
Teaching content	Neural aspects of movement, motor control and motor learning, neural basis of force production and coordination, hierarchical organization of postural control, gait and voluntary movement. Health related aspects of sensorimotor coordination and performance in sport and rehabilitation.
Forms of Teaching	Lecture
Amount of SWS	2
Credits	4
Examination/Unit completion	Examination
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester
Recommended Semester	1.
Compulsory / Compulsory Optional Subject	Compulsory
Module Unit: 2.2 Sports and Movement	
Lecturer	apl. Prof. Dr. Manfred Vieten
Teaching content	Biomechanics as an interdiscipline; kinematics; anthropometry; kinetics; mechanical work; energy; power; synthesis of human movement: three-dimensional kinematics and dynamics. Health related applications of biomechanics in sport and rehabilitation.
Forms of Teaching	Lecture
Amount of SWS	2
Credits	4
Examination/Unit completion	Examination
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester

Recommended Semester	1.
Compulsory / Compulsory Optional Subject	Compulsory
Module Unit: 2.3 Training and Diagnostics	
Lecturer	Prof. Dr. Markus Gruber
Teaching content	The lecture explains the theories of training and testing based on the fundamental concepts of human physiology. After the lecture the students can explain the physiological prerequisites of aerobic, anaerobic, balance and flexibility performance in top athletes, recreational athletes and patients. Moreover, the students are able to describe the state of the art testing procedures that are used to determine physical performance in the above-mentioned populations. They are aware of the literature and can explain important and recent findings in the field of training and testing especially with regard to health related aspects of exercise in sport and rehabilitation.
Forms of Teaching	Lecture
Amount of SWS	2
Credits	4
Examination/Unit completion	Examination
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester
Recommended Semester	1.
Compulsory / Compulsory Optional Subject	Compulsory

Module 3 Intercultural Competence & Theory and Practice of Sport

Study Program/ Usability					
M.Sc. Sport Science					
Credits	14	Dura- tion	2 Semester	Module's contribution to the final grade	10%
Module grade	Examination in Unit 3.3				

Module units	3.1 Intercultural Project Management; 3.2 Communication and Behavior in Intercultural Teams, 3.3 Theory and Practice of Sports
Qualification aims	The students have a common understanding of project objectives, can structure work packages and tasks, are able to setup projects in an international and cultural context and are aware of team roles and responsibilities

Module unit: 3.1 Intercultural Project Management	
Lecturer	Gabriele Knödler-Bittner
Teaching content	Basics of Project Management as project definition, project phases and project roles, tasks and responsibilities. Time and resource planning (staff capacity, milestones, documentation and knowledge transfer in teams). A high focus is on the intercultural aspects and special demands of intercultural teams, influences of culture differences on working in teams and the development of common rules. Models to describe cultures and culture differences are provided e.g G. Hofstede's culture dimensions, A. Thomas culture standards, the culture onion model, and linguistic approaches. Positive aspects and risks of using stereotypes. Dealing with conflicts in intercultural context.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	4
Examination/Unit completion	Unit completion
Prerequisites	None
Language	English
Time slot and frequency of the module	Summer Semester
Recommended Semester	2.
Compulsory/compulsory elective	Compulsory
Module Unit: 3.2 Communication and Behavior in Intercultural Teams	
Lecturer	Gabriele Knödler-Bittner
Teaching content	Theory and practice of team work, team development and the Tuckman team phases (forming, storming, norming, performing), and the later added phase adjourning. Communication in teams, verbal and nonverbal aspects with special

	consideration of intercultural differences and different interpretation of behavior. Presentations, information sharing, building trust and dealing with conflicts. Consideration of the special demands of virtual teams: e.g. lack of nonverbal communication and technological aspects as choice of appropriate tools and technology and how to use them.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	4
Examination/Unit completion	Unit completion
Prerequisites	None
Language	English
Time slot and frequency of the module	Summer Semester
Recommended Semester	2.
Compulsory / Compulsory Optional Subject	Compulsory
Module Unit: 3.3 Theory and Practice of Sports	
Lecturer	Different lecturers of sport sciences
Teaching content	One sport in depth (practice, theory, teaching)
Forms of Teaching	Seminar
Amount of SWS	3
Credits	6
Examination/Unit completion	Examination
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester or Summer Semester
Recommended Semester	1. or 2.
Compulsory / Compulsory Optional Subject	Compulsory

Module 4 Sport Science Research in Scientific Debate

Study Program/ Usability					
M.Sc. Sport Science					
Credits	12	Dura- tion	4 Semester	Module's contribution to the final grade	10%
Module grade	Examination in Unit 4.1				
Module units	4.1 Current Scientific Research in Sport Science; 4.2 Journal Club, 4.3 Colloquium				
Qualification aims	The students are able to listen to scientific oral presentations and to read scientific articles and extract the important knowledge and conclusions. They are able to ask question and be involved in a scientific discussion. Moreover, they are able to give a scientific presentation on their own and answer questions appropriately.				

Module unit: 4.1 Current Scientific Research in Sport Science	
Lecturer	Prof. Dr. Markus Gruber, Dr. Louis-Solal Giboin
Teaching content	Lectures and oral presentations of current scientific research outcomes and topics in the field of sports science mainly related to human performance and health. The students are able to listen to scientific oral presentations and extract the important knowledge and conclusions.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	6
Examination/Unit completion	Examination
Prerequisites	None
Language	English
Time slot and frequency of the module	Summer Semester
Recommended Semester	1. - 2.
Compulsory / Compulsory Optional Subject	Compulsory

Module unit: 4.2 Journal Club	
Lecturer	Prof. Dr. Markus Gruber, Dr. Louis-Solal Giboin
Teaching content	Original articles, reviews and research reports in the field of sports science mainly related to human performance and health. The students are able to read scientific articles and extract the important knowledge and conclusions.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	4
Examination/Unit completion	Unit completion
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter and Summer Semester
Recommended Semester	2.-3.
Compulsory Optional Subject	Compulsory
Module unit: 4.3 Colloquium	
Lecturer	apl. Prof. Dr. Manfred Vieten, Prof. Dr. Markus Gruber
Teaching content	Seminar presentations of external and internal personal and advanced students on recent sport science related topics. The students can listen to scientific presentations and discuss the important features on the basis of their knowledge in the field. They are able to give a scientific presentation on their own and answer questions appropriately.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	2
Examination/Unit completion	Unit completion
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter and Summer Semester
Recommended Semester	1.-4.

Compulsory Optional Subject	Compulsory
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Module 5a Research Project I

Study Program/ Usability					
M.Sc. Sport Science					
Credits	12	Dura- tion	1 Semester	Module's contribution to the final grade	10%
Module grade	Examination				
Qualification aims	The students are able to perform a study in a small team under close supervision. They can collect and process scientific data, display the results and discuss the results within a written report.				
Lecturer	Prof. Dr. Markus Gruber, apl. Prof. Dr. Manfred Vieten, Dr. Louis-Solal Giboin				
Teaching content	The students conduct a research project in a small group. They can work together as a team and take personal responsibility for a specific part of the project. They perform a study, collect and process data, display the results and discuss the consequences in an appropriate way.				
Forms of Teaching	Seminar				
Amount of SWS	4				
Examination/Unit completion	Examination				
Prerequisites	None				
Language	English				
Time slot and frequency of the module	Summer Semester				
Recommended Semester	2.				
Compulsory / Compulsory Optional Subject	Compulsory				

Module 5b Research Project II

Study Program/ Usability					
M.Sc. Sport Science					
Credits	12	Dura- tion	1 Semester	Module's contribution to the final grade	10%
Module grade	Examination				
Qualification aims	The students are able to perform a study on their own under supervision. They can collect and process scientific data, use appropriate statistics, display the results and discuss the results within a written report in relation with the contemporary literature.				
Lecturer	Prof. Dr. Markus Gruber, apl. Prof. Dr. Manfred Vieten, Dr. Louis-Solal Giboin				
Teaching content	The students conduct a small research project on their own. They develop a research aim and a hypothesis for a study. They set up a research design and propose a methodological framework. After presentation and feedback from the supervisor they perform the study or part of the study, collect and process data, use appropriate statistics, display the results and discuss the results in relation to the contemporary literature.				
Forms of Teaching	Seminar				
Amount of SWS	4				
Examination/Unit completion	Examination				
Prerequisites	None				
Language	English				
Time slot and frequency of the module	Winter Semester				
Recommended Semester	3.				
Compulsory / Compulsory Optional Subject	Compulsory				

Module 6 Internship

Study Program/ Usability

M.Sc. Sport Science

Credits	12	Dura- tion	2 months	Module's contribution to the final grade	0%
Module grade	Examination				
Qualification aims	The students can apply their theoretical and methodological knowledge. They get into contact with work places or research institutions potentially important for their future career.				
Lecturer	Different lecturers of sport sciences				
Teaching content	The students work together with e.g. a company, a clinic or another university in the field of Sport and/or Movement Science. The students are able to find applications for their theoretical and methodological knowledge. They get into contact with work places or research institutions potentially important for their future career.				
Forms of Teaching	Internship				
Amount of SWS	4				
Examination/Unit completion	Unit completion				
Prerequisites	None				
Language	English				
Time slot and frequency of the module	Winter Semester				
Recommended Semester	3.				
Compulsory / Compulsory Optional Subject	Compulsory				

Master Thesis

Study Program/ Usability					
M.Sc. Sport Science					
Credits	25	Dura- tion	4 months	Module's contribution to the final grade	30%
Qualification aims	The student proves his/her ability to do scientific research within the given 4 months. The supervised research work is supposed to be on a scientific level ready for publication.				

Oral Exam

Study Program/ Usability					
M.Sc. Sport Science					
Credits	5	Dura- tion	1 hour	Module's contribution to the final grade	5%
Qualification aims	The student defends his/her master thesis by presenting the main outcome of the thesis and discusses the results in the context of the contemporary scientific literature.				