

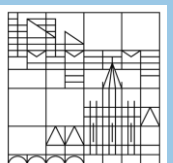
Module Manual

Master of Science *Sport Science for Health*

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Qualification aims of the study program

Noncommunicable diseases (NCD) are responsible for up to 70% of deaths worldwide. Physical inactivity and inadequate physical fitness are major risk factors for NCD's. With its various subdisciplines, Sport Science is ideally positioned to address physiological, psychological, and sociological barriers to effective, regular, and healthy sports and exercise. Consequently, Sport Science can make a crucial contribution to the global efforts aimed at improving individual and public health. The **Master of Science program "Sport Science for Health"** is designed to help students acquire the skills and knowledge that are required to do so. Specifically, the M.Sc. Sport Science for Health provides a

- **comprehensive** (from basic research to real-life applications)
- **multidiscipline** (e.g., Training & Movement Science, Sport Psychology, Social and Health Science)
- **multi-methods** (e.g., neuroscience, exercise physiology, neuromechanics, and psychometrics)

approach to Sport Science that allows students to specialize in their area of interest.

The objective of this program is to put graduates in an ideal position to pursue further post-graduate studies and/or to enter the job market straight away. Prototypical areas to work in with a M.Sc. in Sport Science for Health are the healthcare sector, government institutions, associations, or Olympic training centers. Representative positions are for example consultant, researcher, coach or project manager.

Module Descriptions

Module 1: Research Methods

Study Program					
M.Sc. Sport Science for Health					
Credits	16	Duration	2 Semester	Module's contribution to the final grade	15%
Module grade	Examinations in Unit 1.2 und 1.3				
Module units	1.1 Literature Research, Presenting & Publishing; 1.2 Advanced Research Methods I; 1.3 Advanced Research Methods II; 1.4 Data Analysis				
Qualification aims	<p>Students will be able to apply the research methods necessary to competently evaluate and produce scientific work. Specifically, they are</p> <ul style="list-style-type: none"> ▪ able to effectively retrieve academic information (e.g., journal articles), manage search results and process them. ▪ qualified to write and present academic work (term papers, papers, posters, presentations) on a M.Sc. level. ▪ competent at processing, analyzing, and presenting quantitative data by applying the statistical methods that are relevant for research in Sport Science for Health. ▪ competent in applying the standard research methods and practices that are required to conduct experimental and field research in Sport Science. 				

Module unit: 1.1 Literature Research, Presenting & Publishing	
Lecturer	Dr. Julia Everke, Dr. Stefanie Everke-Buchanan, Alexander Baetz
Teaching content	<p><u>In this unit, students will become proficient at researching literature, presenting scientific findings, and writing academic reports/theses/papers.</u></p> <p>To become proficient at researching literature, students get to know the services of the university library. Topics are: library and database handling; research strategies; interlibrary loan; online research in databases (SPORTDiscus, PubMed, PsycINFO etc.); open access; institutional repository; bibliographic management (Citavi, Endnote, etc.); web services: (Internet Archives; e-journals); alerts</p> <p>To become proficient in the <u>presenting and writing of research findings</u>, students will learn & practice techniques for presenting and</p>

	publishing scientific information. Contents are: Learn and apply the rules for academic work; develop and write a paper on a topic within Sport Science for Health according to the conventions of the discipline (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
Course completion	ungraded
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 Advanced Research Methods I	
Lecturer	Dr. Wanja Wolff
Teaching content	<p><u>In this unit, students will become proficient in the statistical analyses that are most important in Sport Science for Health.</u></p> <p>Statistics are the “grammar of science” (Pearson, 1892). Being competent in selecting, conducting, interpreting, and communicating statistical analyses is crucial. Here, the statistical tests that are most frequently used in sport science will be refreshed (e.g., testing differences between groups, testing relationship between variables) and their application will be discussed. In addition, more advanced statistical techniques and recent trends in data analysis will be explained and discussed.</p>
Forms of Teaching	Seminar
Amount of SWS	2
Credits	5
Course completion	Graded
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 Methods II	
Lecturer	Dr. Lorenz Assländer & Dr. Wanja Wolff
Teaching content	<p><u>In this unit, students will become proficient in using the key research methods and technologies that are most important in Sport Science for Health.</u></p> <p>Sport Science is an inherently interdisciplinary endeavor and this is reflected in the heterogeneity of research methods that sport science researchers employ. For aspiring sport scientists it is therefore crucial to be familiar with this diversity of methods and applications. Thus, here, the methods and tools that are frequently used in Sport Science for Health will be discussed with respect to their theoretical background and they will be demonstrated and practiced in applied lab and/or life settings. Methods, students will get familiar with come from a wide range of areas, such as neuroscience, biomechanics, physiology, and psychology. To facilitate a comprehensive understanding of these methods and tools, an additional focus will be on analyzing, interpreting, and presenting the results that are obtained with these measures.</p>
Forms of Teaching	Seminar including hands on sessions
Amount of SWS	2
Credits	5
Course completion	Graded
Prerequisites	None
Language	English
Time slot and frequency of the module	Summer Semester
Recommended Semester	2.
Compulsory / Compulsory Optional Subject	Compulsory
Module Unit: 1.4 Data Analysis	
Lecturer	Dr. Maik Bieleke

Teaching content	<p><u>In this unit, students will become proficient in pre-processing, post-processing, analyzing, and visualization of quantitative data.</u></p> <p>Advanced data analyses skills have become increasingly important for researchers in recent years. The advent of more powerful statistical methods (some of which are discussed in 1.2) and research technologies (some of which the students have experienced in 1.3) calls for a more comprehensive approach to data analyses. This starts with pre-processing of intensive data (e.g., filtering, artifact correction), post-processing (e.g., calculating variables of interest for further statistical analysis), analysis and visualization (e.g., presenting raw data along with aggregate scores in one Figure). Thus, here, students will acquire advanced data analysis skills using specialized software, thereby complementing the theoretical knowledge students have acquired in 1.2 and 1.3.</p>
Forms of Teaching	Seminar
Amount of SWS	2
Credits	3
Course completion	Ungraded
Prerequisites	None
Language	English
Time slot and frequency of the module	Summer Semester
Recommended Semester	2.
Compulsory / Compulsory Optional Subject	Compulsory

Module 2: Topics and theoretical fields in Sports Science for Health

Study Program					
M.Sc. Sport Science for Health					
Credits	12	Duration	1 Semester	Module's contribution to the final grade	11%
Module grade	Examinations in Unit 2.1, 2.2 and 2.3.				
Module units	2.1 Physical Performance, Training and Health; 2.2 Public Health; 2.3 Exercise Psychology & Health				
Qualification aims	<p>This module will provide a comprehensive foundation that will put students in a position to adopt and employ a truly multidisciplinary approach to Sport Science for Health. Thus, here, students develop the fundamentals that enable their specialization in subsequent modules. The lectures will provide this foundation by approaching Sport Science for Health from three different disciplinary angles to highlight the multidisciplinary nature of Sport Science: Through the lens of health, lectures will focus on Training & Movement Science, Sport and Exercise Psychology, and Public Health. After this module, the students know the</p> <ul style="list-style-type: none"> ▪ theories & concepts that shaped – and are currently shaping – the field. ▪ seminal studies and findings that have advanced the field. ▪ most relevant applications that have brought findings from basic science from “lab to life”. ▪ Most salient and pressing open questions and promising future research trends in the field. 				

Module unit: 2.1 Physical Performance, Training and Health	
Lecturer	Prof. Dr. Markus Gruber
Teaching content	<p><u>In this unit, students learn about the benefits of physical activity and exercise in the prevention and treatment of multiple health conditions, diseases and their associated risk factors.</u></p> <p>The first part of the lecture covers the theories of training and testing based on the fundamental concepts of human physiology. The second part deals with health screening, pre-exercise evaluation, health related fitness testing and clinical exercise testing methods. The third part covers exercise prescription for healthy populations, for individuals at risk and for patients with chronic diseases and health conditions. After the lecture the students can explain the physiological prerequisites of aerobic, anaerobic, balance and flexibility performance. They are able to describe the state-of-the-art testing procedures and diagnostic tools to determine</p>

	physical performance and health-related physical fitness in the above-mentioned dimensions and populations. They are aware of the literature and can explain important and recent findings in the field of training and testing with a special focus on health-related aspects of physical activity and exercise.
Forms of Teaching	Lecture
Amount of SWS	2
Credits	4
Course completion	Graded
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 Public Health	
Lecturer	Prof. Dr. Martina Kanning
Teaching content	<p><u>In this unit, students learn to approach health from a macro perspective, that highlights the importance of conceiving and tackling exercise and health behavior not only on an individual level but also from a scalable public health point of view.</u></p> <p>The lecture imparts relevant methodological skills and basic theoretical foundations of public health science with respect to prevalence and health effects of physical activity as well as risks associated with inactivity. It focuses on a social-ecological approach. Students learn to explain population-based concepts of prevention and health promotion. They study methods of epidemiology and are able to interpret epidemiological health data to identify health indicators and health risks of different population groups. Students know how to search for population-based measures and interventions to identify and change physical activity, they can evaluate them and are able to critically discuss the results.</p>
Forms of Teaching	Lecture
Amount of SWS	2
Credits	4

Course completion	Graded
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 Exercise Psychology & Health	
Lecturer	Prof. Dr. Julia Schüler
Teaching content	<p><u>In this unit, students learn about theories of physical activity and exercise. The focus is on health behavior change (promoting physical activity) and interventions that support it.</u></p> <p>Other topics include self-regulation of physical activity, sport and mental well-being (emotional well-being, anxiety, depression, self-esteem, cognitive functioning), sport and stress, and personal and social health resources.</p>
Forms of Teaching	Lecture
Amount of SWS	2
Credits	4
Course completion	Graded
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester
Recommended Semester	1.
Compulsory / Compulsory Optional Subject	Compulsory

Module 3: In-depth study of current research fields in Sports Science for Health

Study Program					
M.Sc. Sport Science for Health					
Credits	12	Duration	2 Semester	Module's contribution to the final grade	11%
Module grade	Examination in Unit 3.3				
Module units	3.1 Advanced Seminar I; 3.2 Advanced Seminar II				
Qualification aims	Building on Module 2, the students will dive deeper into specific topics that are relevant and current for Sport Science for Health. In specialized seminars, students will develop in-depth expertise by reading, discussing and presenting theories and findings that pertain to the topic of the seminar. Thus, while Module 2 offers a broad foundation, Module 3 is much narrower and has the goal to allow students acquire expertise in topics of their interest. To pass the module, two seminars (from two different disciplines, as per the differentiation of the disciplines introduced in Module 2) have to be completed.				

Module unit: 3.1 Advanced Seminar I	
Lecturer	Lectures will rotate between different experts from the three groups of the Konstanz Sport Science Department.
Teaching content	<u>In this unit, students will acquire in-depth knowledge of a specific research topic from Sport Science for Health.</u> Typically, the seminar will be on a topic where the Konstanz group is actively pursuing research and the lecturer will be the “resident expert” in this field. This will allow students to expand on the fundamentals acquired in module 2 and become an expert regarding the state-of-the-art in a clearly defined research field. In doing so, this unit can also function as a preparatory segue way into potential topics for subsequent Project Seminars and the Master Thesis.
Forms of Teaching	Seminar
Amount of SWS	2
Credits	6
Course completion	Graded
Prerequisites	None
Language	English

Time slot and frequency of the module	Winter Semester
Recommended Semester	1.
Compulsory/compulsory elective	Compulsory
Module Unit: 3.2 Advanced Seminar II	
Lecturer	Lectures will rotate between different experts from the three groups of the Konstanz Sport Science Department.
Teaching content	<p><u>In this unit, students will acquire in-depth knowledge of a specific research topic from Sport Science for Health.</u></p> <p>Typically, the seminar will be on a topic where the Konstanz group is actively pursuing research and the lecturer will be the resident expert in this field. This will allow students to expand on the fundamentals acquired in module 2 and become an expert regarding the state-of-the-art in a clearly defined research field. In doing so, this unit can also function as a preparatory segue way into potential topics for subsequent Project Seminars and the Master Thesis.</p>
Forms of Teaching	Seminar
Amount of SWS	2
Credits	6
Course completion	Graded
Prerequisites	None
Language	English
Time slot and frequency of the module	Summer Semester
Recommended Semester	2.
Compulsory / Compulsory Optional Subject	Compulsory

Module 4: Discussing and debating about sport-scientific research

Study Program					
M.Sc. Sport Science for Health					
Credits	14	Duration	4 Semester	Module's contribution to the final grade	11%
Module grade	Examination in Unit 4.3				
Module units	4.1 Current Research in Sport Science for Health; 4.2 Journal Club; 4.3 Research Workshop, 4.4 Colloquium				
Qualification aims	<p>Sport Science for Health is a dynamic and ever-changing scientific field. To become an expert in this diverse field, one needs to keep up to date with current topics, to critically discuss extant and emerging research, and to use this knowledge to plan and design experiments and studies that are timely, sound, and relevant. This module will equip students with these skills. Specifically, students will</p> <ul style="list-style-type: none"> ▪ attend academic talks, where experts on current topics in Sport Science for Health will present their work and are available for discussion. ▪ read and critically analyze & discuss current papers. ▪ develop and present their own ideas for research in Sport Science for Health 				

Module unit: 4.1 Current Scientific Research in Sport Science	
Lecturer	Dr. Wanja Wolff
Teaching content	<p><u>In this unit, students will experience the diversity and depth of current research in Sport Science for Health by attending high-level and in-depth presentations from experts of the Konstanz Sport Science group, as well as from external speakers.</u></p> <p>To best prepare for the invited talks, students will read selected scientific articles on the speakers' topic prior to attending the talk.</p>
Forms of Teaching	Lecture
Amount of SWS	1
Credits	2
Course completion	Ungraded
Prerequisites	None
Language	English

Time slot and frequency of the module	Winter Semester
Recommended Semester	1.
Compulsory / Compulsory Optional Subject	Compulsory
Module unit: 4.2 Journal Club	
Lecturer	Prof. Dr. Markus Gruber
Teaching content	<p><u>In this unit, students will discuss and critically evaluate recent scientific contributions to Sport Science for Health.</u></p> <p>The papers presented and discussed in the Journal Club will range from original articles, to reviews and research reports on important topics in Sports Science for Health. Here, the students will develop and hone their skills in efficiently reading scientific articles, and in extracting the important knowledge and conclusions.</p>
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 Optional Subject	Compulsory
Module unit: 4.3 Research Workshop	
Lecturer	Prof. Dr. Markus Gruber
Teaching content	<p><u>In this unit, students will further develop their reading skills and develop and practice additional skills that enable them to structure their own ideas towards the development of a new research project.</u></p> <p>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.</p>

Forms of Teaching	Seminar
Amount of SWS	2
Credits	6
Examination/Unit completion	Unit completion
Prerequisites	None
Language	English
Time slot and frequency of the module	Winter Semester
Recommended Semester	3.
Compulsory Optional Subject	Compulsory
Module unit: 4.4 Colloquium	
Lecturer	Prof. Dr. Markus Gruber
Teaching content	<p><u>In this unit, students will present their own research and discuss their ideas and results with fellow students from all Semesters of the Sport Science for Health Master program.</u></p> <p>Here, the students will 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 are competent at answering content-specific questions.</p>
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

Module 5: Research Project I

Study Program					
M.Sc. Sport Science for Health					
Credits	12	Duration	1 Semester	Module's contribution to the final grade	11%
Module grade	Examination				
Qualification aims	<p><u>In this module, students will be able to utilize the skills and knowledge they have acquired in the prior modules and be a vital part of real research project.</u></p> <p>Here, the students perform a study in a small team and under close supervision. This implies proficiency in collecting and processing of scientific data, displaying of results, and discussion of results in a report.</p>				
Lecturer	Varying researchers from the Konstanz Sport Science group				
Teaching content	<p><u>Students work together as a team and take personal responsibility for a specific part of the project.</u></p> <p>They conduct a research project in a small group and conduct a study, collect and process data, display the results and discuss the implications in an appropriate way.</p>				
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 6: Research Project II

Study Programme					
M.Sc. Sport Science for Health					
Credits	12	Duration	1 Semester	Module's contribution to the final grade	11%
Module grade	Examination				
Qualification aims	<p><u>This module directly builds on the prior module, and students will take an even deeper dive into everything that goes into a successful research project, thereby fine-tuning the skills they have honed in the previous module.</u></p> <p>After this module, students have learned to conduct 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 report in relation with the contemporary literature.</p>				
Lecturer	Varying researchers from the Konstanz Sport Science group				
Teaching content	<p><u>The students conduct a small research project on their own.</u></p> <p>Together with the lecturer, 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.</p>				
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 7: Internship

Study Program					
M.Sc. Sport Science for Health					
Credits	12	Duration	2 months	Module's contribution to the final grade	0%
Module grade	Written report				
Qualification aims	The students can apply their theoretical and methodological knowledge. They get into contact with workplaces or research institutions potentially important for their future career.				
Lecturer	The internship is carried out in a self-reliant fashion and in consultation with the respective partner				
Teaching content	<p><u>The students work together with e.g. a company, a clinic or another university on a topic that is relevant for Sport Science for Health.</u></p> <p>Here, students find applications for their theoretical and methodological knowledge. They get into contact with workplaces or research institutions potentially important for their future career.</p>				
Forms of Teaching	Internship				
Amount of SWS	The volume of work is defined in consultation with the partner of the internship				
Course completion	Ungraded (written internship report)				
Prerequisites	None				
Language	English				
Time slot and frequency of the module	Winter Semester				
Recommended Semester	3.				
Compulsory / Compulsory Optional Subject	Compulsory				

Module 8: Master Thesis

Study Program					
M.Sc. Sport Science for Health					
Credits	30	Duration	4 months	Module's contribution to the final grade	30%
Qualification aims	The student showcases his/her ability to do scientific research within the given 6 months. The supervised research work is supposed to be on a scientific level that should be fit for subsequent publication in a peer-reviewed journal.				