SPORT SCIENCE AND COACHING PROGRAMME (180 CREDITS) .................. 1

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SPORT SCIENCE AND COACHING PROGRAMME (180 CREDITS)

Courses and modules

Autumn semester

Sports science and coaching (30 credits)

Introduction (1.5 credits)
Basic scientific approach and methods.

Anatomy and physiology I (7.5 credits)
Medical terminology, general cell and tissue studies, anatomy of the skeleton and muscles, anatomy and physiology of the nervous system, training science (mobility and weight training), injuries to the musculoskeletal system.

Anatomy and physiology II (7.5 credits)
Cell physiology, metabolism, anatomy and physiology of the circulatory and respiratory system, endocrinology, digestion, kidney physiology and muscle physiology.

Sports history and sports in society (6 credits)
Sports actors (active, leaders, stars, sex, class, ethnicity), structures (organisations, facilities, events), cultures (Ling gymnastics, Olympic sport, elite sports, the popular sports movement, traditional sports), practices (training, commercialism, professionalism, doping).

Sports didactics and applied sports science (7.5 credits)
Analysis and interpretation of diverse special sports regarding their construction, concepts, objectives, design and concept system in practical performance. Integration of sports science and proven experience in various sporting environments and during outdoor activities. Scientific methodology in the sports lab, special sports in different sports organisations and in the field.

Sports specific methodology (30 credits)

Theory and methodology of training I (7.5 credits)
Key concepts in training didactics, physical testing in theory and practice, information searching in scientific publication databases, the theory of requirements and capacity profiles with examples from different sports disciplines. Drawing up a requirements profile for a special sport.

Theory and methodology of training II (7.5 credits)
Theory and practice in video and data-based analysis of techniques and tactics, basic methods in technique training. Includes drawing up an analysis of techniques or tactics within a special sport.

**Theory and methodology of training III (7.5 credits)**
Age-adapted training and training planning for children and young people. Theory and practice in training methods for general physical partial capacities. Theory in training planning on scientific grounds for elite athletes. Special sports training methods and training planning with integration of knowledge from scientific literature and proven experience.

**Sports medicine (7.5 credits)**
Injuries and illnesses in the musculoskeletal system related to sports and physical activity, rehabilitation programmes and preventive measures for specific sports injuries. Basic knowledge of massage, taping, doping and pharmaceutical products.

**Sports science and coaching III (30 credits)**

**Subject specialisation (7.5 credits)**
The module will provide in-depth knowledge in the subject of sports from a sports science perspective; literature review within a specific research field connected to special sports. The structure of a scientific report, the writing process, information source evaluation and reference management, information searching and research ethics.

**Research methods (7.5 credits)**
Scientific theories, methods and traditions, problem formulation process for the writing of memos. Descriptive and analytical statistics, basic qualitative content analysis based on observations, interviews and surveys.

**Degree work (15 credits)**
Dissertation at the basic level, on a scientific basis both theoretically and empirically. In-depth work on the scientific approach, methods and theory construction in the area of sports science.

**Spring semester**

**Sports science and coaching II (30 credits)**

**Applied physiology (7.5 credits)**
Energy metabolism during rest and physical activity, measurement of energy metabolism and substrate choices, basic training science and the adaptation of the human body to aerobic and anaerobic training and weight training, effects of high altitude and different ambient temperatures during physical exercise and physical performance, the importance of nutrition for different types of physical activity, training and performance in sports, physical activity as illness prevention and treatment of illnesses in people of all ages, with and without various common illnesses such as overweight/obesity, cardiovascular diseases and diabetes.

**Sports didactics and applied sports science 2 (7.5 credits)**
The application of video technology in the context of sports analysis, methods for learning techniques and tactics. Produce a descriptive project paper on techniques in your own special sport.
Biomechanics and motor control (7.5 credits)
Power interplay between bodies in equilibrium, the relationship between force and movement, neuromotor control of movements and principles of motor development and learning. The application of biomechanical and neuromotor principles in the analysis of strength training, rehabilitation and working techniques.

Sports psychology (7.5 credits)
Explain and discuss the basic meaning of key psychological concepts and theories in sports in the context of personality, motivation, stress and arousal, group, leadership, communication and feedback, over-training and well-being. Analysing case studies of sport psychology based on literature, previous research and your own experience of sports.

Sports specific methodology II (30 credits)

Organisation and leadership I (7.5 credits)
Introduction to occupational and organisation psychology, and Acceptance and Commitment Therapy (ACT). The application of occupational and organisation psychology and ACT to your own special sport and the role of the coach. Leadership, group processes and communication in practice, in groups and in the mountain environment (outdoor activities).

Sports pedagogy (7.5 credits)
The role of elite sports as a value-conveyor in society; the leader's/coach's role as a norm-conveyor. Children and young people's sports as a development environment; the function of sports as a culture carrier and identity creator. Scientific reporting, the research process and qualitative methodology.

Sports psychology (7.5 credits)
Psychological characteristics (self-confidence and related concepts; nervousness and performance anxiety; concentration). Psychological skills training (objectives, stress management, visualisation, internal dialogue, learning by observation). Sports psychology methodology and practical sports psychology work in the field.

Organisation and leadership II (7.5 credits)
Understanding of the concept of Organisational Behaviour Management (OBM). Leadership and its connections to occupational and organisation psychology. Practical application of leadership and OBM on your own special sport and role as a coach.

Sports coaching III (30 credits)

Coach retention (7.5 credits)
Sustainable leadership in the long term and during a championship. Prevention of stress-related problems, promotion of recovery, vitality and well-being. Reflective diary writing and applied in-depth work, focused on the coach's situation and needs.

Coaching at championships (7.5 credits)
Championship competencies as psychological skills. Leadership, communication, selection and decision-making. The interplay between the head coach, leadership teams and athletes. Debriefing and evaluation. Applied specialisation work.

Optimal performance from a nutritional perspective (7.5 credits)
The structure, function and metabolism of nutrients in the body; energy metabolism and nutritional needs during sports performance at the elite level. Nutritional analysis of food, planning and preparation of meals with the help of computer programmes, food tables and diet investigation methods. Laboratory experiments for determining body composition and metabolism at rest.
Peak performance from a multidisciplinary perspective (7.5 credits)
Multidisciplinary, theoretical basis for tapering and peaking. Tapering and peaking in different sports, monitoring systems, multidisciplinary support functions. This module involves a project dissertation.