



CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

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**EVALUATION REPORT**  
**STUDY FIELD of BIOLOGY**  
at Lithuanian Sports University

**Expert panel:**

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4. Assist. prof. dr. Mirela Sertić Perić, *academic*;
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## Study Field Data\*

Title of the study programme	<b>Sports Physiology and Genetics</b>
State code	6211DX001
Type of studies	University
Cycle of studies	Second
Mode of study and duration (in years)	Full time, 2 years
Credit volume	120 ECTS
Qualification degree and (or) professional qualification	Master of Life Sciences
Language of instruction	Lithuanian, English
Minimum education required	Higher university's education of Bachelor degree
Registration date of the study programme	19 May 1997 (Title changed on 21 January, 2014)

*\* if there are **joint** / **two-fields** / **interdisciplinary** study programmes in the study field, please designate it in the foot-note*

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## I. INTRODUCTION

### 1.1. BACKGROUND OF THE EVALUATION PROCESS

The evaluation of study fields is based on the Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC) 31 December 2019 Order [No. V-149](#).

The evaluation is intended to help higher education institutions to constantly improve their study process and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: 1) *self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI)*; 2) *site visit of the expert panel to the higher education institution*; 3) *production of the external evaluation report (EER) by the expert panel and its publication*; 4) *follow-up activities*.

On the basis of this external evaluation report of the study field SKVC takes a decision to accredit study field either for 7 years or for 3 years. If the field evaluation is negative then the study field is not accredited.

The study field and cycle are **accredited for 7 years** if all evaluation areas are evaluated as exceptional (5 points), very good (4 points) or good (3 points).

The study field and cycle are **accredited for 3 years** if one of the evaluation areas was evaluated as satisfactory (2 points).

The study field and cycle are **not accredited** if at least one of evaluation areas was evaluated as unsatisfactory (1 point).

### 1.2. EXPERT PANEL

The expert panel was assigned according to the Experts Selection Procedure (hereinafter referred to as the Procedure) as approved by the Director of Centre for Quality Assessment in Higher Education on 31 December 2019 [Order No. V-149](#). The site visit to the HEI was conducted by the panel on *15 November, 2021*.

**Prof. dr. Mark S. Davies (panel chairperson)** *Professor Emeritus of Dep. of Life Sciences, University of Sunderland, U. K.;*

**Prof. dr. Trine Johansen Meza**, *Professor of Dep. of Health Sciences, Pro-rector of Research and Artistic Development, Kristiania University College, Norway;*

**Prof. dr. Jasna Štrus**, *Professor Emerita of Dep. of Biotechnologies, University of Ljubljana, Slovenia;*

**Assist. prof. dr. Mirela Sertić Perić**, *lecturer at Dep. of Biology, University of Zagreb, Croatia;*

**Mr Arūnas Leipus**, *Product Manager in Biomatter Designs Ltd., Business Development Consultant in UAB Baltymas, Ltd., Lithuania;*

**Dr. Marcel Tarbier**, *Postdoc in Computational Biology at Karolinska institutet and Science of Life Laboratory, PhD student in Molecular Bioscience at Stockholm University (PhD defended in 2021), Sweden.*

### 1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by SKVC. Along with the Self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site visit:

No.	Name of the document
1.	A list with additional evidence and answers to factual questions
2.	Annex 1. List of teaching staff and the events that contributed to the competence development for the last three years
3.	Annex 2. Study modules
4.	Annex 3. A sample of an examination test in Molecular biology of sport course

### 1.4. BACKGROUND OF THE STUDY FIELD/STUDY FIELD POSITION/STATUS AND SIGNIFICANCE IN THE HEI

Lithuanian Sports University (LSU) is a state higher education institution of the Republic of Lithuania. LSU educates professionals in the fields of sports coaching, physical education, physiotherapy and sports, and recreation management. One of the study programmes conducted at LSU is the *Sports Physiology and Genetics* programme in the field of Biology, which qualifies students for a Master of Life Sciences degree. The study programme is conducted by the following departments: Department of Health Promotion and Rehabilitation, Institute of Sport Science and Innovations, and research teams from the strategic research areas (Muscles, Motor Control and Health Promotion; Methodology of Sports and Exercise Training). Studies in Biology are closely related to the programmes in the fields of Sport (bachelor's and master's degree programmes), Rehabilitation (bachelor's and master's degree programmes), and Biology (doctoral degree programme) conducted at LSU. Bachelors of Sport and Rehabilitation often choose to pursue a Master's degree in Sports Physiology and Genetics as a continuation of their studies, while graduates of the programme *Sports Physiology and Genetics* (Master of Biology/Life Sciences) are more likely to choose a doctoral programme in the field of Biology at LSU. Studies in the field of Biology (including the study programme Sports Physiology) have been conducted at LSU since 1997. In part in response to broader recommendations of the previous external evaluation in 2013, and the conclusions of the 2013 self-evaluation, the University decided to change the title of the study programme Sports Physiology to Sports Physiology and Genetics (in 2014) and it was proposed to add the study of sports genetics to the programme. The final changes to the plan and curriculum of the second cycle *Sports Physiology and Genetics* programme were approved by the LSU Senate on May 29, 2019.

## II. GENERAL ASSESSMENT

*Biology* study field and second cycle at Lithuanian Sports University is given a **negative** evaluation.

*Study field and cycle assessment in points by evaluation areas*

No.	Evaluation Area	Evaluation of an Area in points*
1.	Intended and achieved learning outcomes and curriculum	1
2.	Links between science (art) and studies	2
3.	Student admission and support	2
4.	Teaching and learning, student performance and graduate employment	2
5.	Teaching staff	2
6.	Learning facilities and resources	3
7.	Study quality management and public information	3
	Total:	15

\*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;

2 (satisfactory) - meets the established minimum requirements, needs improvement;

3 (good) - the field is being developed systematically, has distinctive features;

4 (very good) - the field is evaluated very well in the national and international context, without any deficiencies;

5 (excellent) - the field is exceptionally good in the national and international context/environment.

### III. STUDY FIELD ANALYSIS

#### 3.1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

*Study aims, outcomes and content shall be assessed in accordance with the following indicators:*

*3.1.1. Evaluation of the conformity of the aims and outcomes of the field and cycle study programmes to the needs of the society and/or the labour market (not applicable to HEIs operating in exile conditions)*

*(1) Factual situation*

As stated in the SER, the second-cycle *Sports Physiology and Genetics* programme is the only programme in Lithuania that trains Masters of Life Sciences in Sports Physiology and Genetics. It trains specialists in sports physiology and professionals in the fields of sports coaching, physical education, physiotherapy, public health, sports and recreation management. From a detailed review of the various programs offered at LSU, it is evident that the MSc *Sports Physiology and Genetics* is the only programme that is in the field of biology and produces graduates with the Master of Life Sciences degree. One of the highlighted student competencies within the MSc *Sports Physiology and Genetics* programme is the analysis and synthesis of knowledge in sports biology. Graduates can work as professionals or managers in educational and research institutions (universities, research laboratories, research centres, training centres for athletes) and should be qualified to carry out research or applied activities in various public or private institutions (e.g. industrial and technological development companies, sports teams, health clubs) and in the creation of new companies. Graduates of the programme have access to doctoral studies in the field of biology conducted at LSU in collaboration with the University of Tartu (Estonia).

According to the SER, admission to the first year of the graduate study programme *Sports Physiology and Genetics* is open to those with a bachelor's degree. A prerequisite for enrolment in the MSc *Sports physiology and genetics* is Higher University education, for example a bachelor's degree in Sports, Rehabilitation/ Physiotherapy, public health or sports education. According to additional information provided by the SER's authors, all of these undergraduate programmes typically include modules in anatomy, biochemistry, sport and exercise physiology, sport biomechanics, motor control and learning, sports training theory and methods. Students who have obtained a Bachelor's degree in another field of study (e.g. social sciences, arts) must complete the study module Sports and Exercise Physiology (10 ECTS) in the first semester (also see 3.3.1.).

*(2) Expert judgement/indicator analysis*

The panel judges that the aims and outcomes of the *Sports Physiology and Genetics* study programme meet the needs of employers who search for/employ experts in sports physiology. During the site visit, LSU staff and alumni representatives confirmed that the programme is closely linked to the third study cycle at the LSU and that some of the graduates

of the programme are successfully engaged in research (as part of the doctoral programme in biology at LSU). Graduates are often employed as coaches in sports clubs and/or as specialists in their respective fields of practice (e.g. physical therapists, physical activity specialists).

During the site visit, LSU staff pointed out that they are aware that the number of students in the *Sports Physiology and Genetics* programme is low (below capacity, e.g., admission data for the programme show that fewer than 20 students enrolled in the programme each year from 2017 to 2020), but that this is also not in their interest – they want to educate a critical mass of well-trained professionals needed for the relevant sector (labour market) in Lithuania. The panel concluded that there are strong links between academic staff and employers and that the programme benefits from this.

However, from the discussions during the site visit, it was concluded that genetics is not sufficiently represented in the programme as would be expected from the title of the programme – *Sports Physiology and Genetics*. In coming to this conclusion the panel notes that the formal aim of the study programme does not include genetics. Instead, it is a specialized sport-oriented master's degree program that includes an in-depth orientation to the field of sport and exercise physiology. The University changed the title of the programme from *Sports Physiology* to *Sports Physiology and Genetics* (in 2014) and final changes to the programme's plan and curriculum were approved in 2019, but members of the current panel conclude that LSU has not satisfactorily implemented the previous recommendation concerning the issue of coherence between the aims of the programme and the intended learning outcomes. It would be expected that genetics is adequately represented in the curriculum of the programme, but the nine modules that shape the study programme (10 ECTS each) are very specialized, mostly focused on sports physiology, and genetics is under-represented and extremely specific. In addition, alumni indicated that they did not feel competent enough to incorporate genetic technology and/or counselling issues into their professional services. Senior management representatives acknowledged that they were aware of this problem and felt that not only their graduates' employers, but also LSU would benefit more by incorporating genetics more fully into their curriculum. Senior leaders expressed the opinion that Genetics should strategically remain in the title and curriculum of the programme. They also point out that they are aware that more collaboration with genetic specialists (e.g. from health care institutions, cardiology clinics, Vilnius University and other European universities) is needed in this regard.

The panel members concluded that the MSc of Life Sciences degree designation is inappropriate given the prior knowledge of the very diverse bachelors graduates (mostly non-biologists) admitted to the program. Although it is good that enrolment in this programme is open to all interested parties (students who have a bachelors degree from any field of study), the panel members consider that taking only one module in the first semester of study is not sufficient to compensate for the basic biological knowledge and skills required to obtain the MSc in Life Sciences. This sequence is unlikely to be in the interest of future employers who are interested in hiring an MSc in Life Sciences with all the competencies of a life sciences professional upon graduation. The compulsory course Sports and Exercise Physiology for non-biologists cannot provide the necessary background knowledge in biology.



Therefore, the panel concludes that the intended learning outcomes and basic biological competencies of the graduates are not achieved.

### *3.1.2. Evaluation of the conformity of the field and cycle study programme aims and outcomes with the mission, objectives of activities and strategy of the HEI*

#### *(1) Factual situation*

The SER emphasises that LSU's primary mission is: (i) to promote lifelong well-being of people, (ii) to provide professional support to recreational and professional athletes, (iii) to advise politicians and all interested institutions on the development of society and economy based on the promotion of physical activity, recreation and rehabilitation, (iv) to incorporate and develop modern research and technology in the fields of sport, exercise, nutrition and rehabilitation in Lithuania, taking into account the current and future needs of the labour market and democratic society.

According to SER, the aim of the study programme is to prepare Masters of Life Sciences qualified to creatively develop knowledge of sports biology, to organise and conduct research independently and to apply the research results in solving problems related to health and physical fitness. According to SER, the study of exercise physiology and genetics is based on the following principles: 1) responsibility, accountability, self-study, respect, collaboration, commitment to development within higher education, 2) mobility development, active teaching and learning, quality-assured education based on learning outcomes, 3) involvement of societal stakeholders in the design of the study programme and support of students' career plans.

#### *(2) Expert judgement/indicator analysis*

The panel concludes that the aims and outcomes of the *Sports Physiology and Genetics* programme are consistent with LSU's major mission, objectives, and strategy, which are listed in the SER. For example, conversations with students and alumni during the site visit provided solid evidence that the *Sports Physiology and Genetics* programme relies heavily on self-study and practice in exercise physiology. Alumni and social partners confirmed that graduates of the programme effectively apply their expertise in promoting physical activity, recreation and rehabilitation and/or in conducting independent research (as doctoral students). Social partners and LSU staff agreed that they collaborate successfully (particularly with national sports centres, clubs and federations), often involving students. In general, it was concluded that students would benefit more from being sent more intensively to specific social partners (e.g., health centres, hospitals, molecular labs) to acquire genetics-based skills that are not adequately taught in the current curriculum. LSU staff indicated that they strategically want to maintain the dual focus of the programme (1. Sports physiology and 2. Genetics) – not only to attract more students, but also to enhance the quality of the programme and the competencies of graduates.

The panel concluded that the programme would certainly benefit from the development of an effective and reasonable strategy to support LSU's mission to design a high quality, dual-

focused degree programme that proportionately includes both sports physiology and genetics. The strategy should also be supported by the curriculum and associated learning outcomes. On the other hand, if the current strategy and long tradition of teaching sports physiology is to be maintained, the title of the programme should necessarily be changed (i.e., Genetics should absolutely be excluded from the current title of the programme).

The panel members also consider that if there are no changes to the current structure of the programme in terms of improving learning outcomes and achieving the genetics learning outcomes, the programme, in addition to the removal of 'genetics' from the title, should be moved from the Life Sciences to the Health Sciences study field (Public health domain).

### *3.1.3. Evaluation of the compliance of the field and cycle study programme with legal requirements*

#### *(1) Factual situation*

LSU's undergraduate programme *Sports Physiology and Genetics* is approved by the University Senate and registered in accordance with the legal acts of the Republic of Lithuania. As stated in the SER, it is designed according to the requirements of the study field descriptions approved by the Ministry of Education, Science and Sport of the Republic of Lithuania and other relevant legal acts. The description of the study programme can be found in the Annex 1 of the SER. The SER states that the structure of the programme is based on the general objectives of the Life Sciences field of study and is supported by the Lithuanian Qualifications Framework and the European Qualifications Framework. The content of the study programme is updated according to the Procedure for Module Development and Accreditation at Lithuanian Sports University (approved by LSU Senate in 2015). The programme has been updated since 2014 (as shown in Table 1 of the SER), based on study monitoring and student feedback (surveys). The most recent changes to the plan and curriculum of the programme were approved by the LSU Senate in 2019. The current curriculum approved in 2019 is shown in Table 2 of the SER. The scope of the study programme is calculated using credits that measure student learning outcomes and workload (one credit equals 26 student work hours). The student workload is composed of contact hours (10-15% of the study module volume) and individual student work (85-90% of the study module volume) as specified in the Procedure for Workload Management and Reporting approved by the LSU Senate in 2017.

#### *(2) Expert judgement/indicator analysis*

The SER provides sources of basic legal documents that indicate that the *Sports Physiology and Genetics* study programme is tailored to meet specific legal requirements. However, the SER does not provide a clear and detailed presentation of the relevant legal parameters, programme indicators and how they align with the relevant legal documents/requirements. From the SER, it is evident that no less than 30 credits are appointed to the final thesis. However, the panel members consider that the *Sports Physiology and Genetics* study programme does not fully meet the legal requirement of covering at least 60 credits in the field of study (i.e., Life Sciences, Biology). Considering the programme description in Annex 1

of SER and its previous and current versions in Tables 1 and 2 of SER, the panel concluded that the programme still does not contain sufficient general/basic biology topics to justify the title M.Sc. in Life Sciences. Potentially helpful relevant information is missing from the additional evidence and factual information document (the response to Q4 of the document is incomplete) [sent additionally at the request of the panel before the site visit]. Some additional factual information indicates that the Minister of Education and Science approved a new list of study fields at HEIs in 2016. In addition, panel members noted that no other degree programmes, i.e., bachelor's and/or master's degrees, lead to a degree in life sciences at LSU, but instead lead to degrees in Health sciences, Sports, Business Management and Rehabilitation. Thus, if a student enrolls in the *Sports Physiology and Genetics* graduate study programme after completing a bachelor's degree programme at LSU, he or she will definitely not acquire sufficient basic biological knowledge to earn an M.Sc. in Life Sciences degree. The admission procedure with prerequisites is not well defined (the described prerequisites for the programme is Higher University education, Bachelor's degree in Sports, Rehabilitation/Physiotherapy, public health, educology) and the content/extent of bridging courses for bachelors graduates from other fields is not defined and not available at the webpage or information material for students.

In addition to the acquisition of insufficient competencies related to genetics within the current graduate programme in *Sports Physiology and Genetics*, the issue of the inappropriate placement of this programme within the field of life sciences is one of the main concerns identified by the panel members in relation to the first area of assessment (intended and achieved learning outcomes and curriculum). During the site visit, LSU staff and management showed awareness of these shortcomings as they provided evidence of changes made to the curriculum since 2013 to strengthen the structure of the programme of study. However, there is still much room for improvement in the strategy. Some of the shortcomings were already highlighted in the expert recommendations of the last external evaluation (presented in the SER), but were not fully considered by LSU management. The panel members concluded that the title of the MSc programme *Sports Physiology and Genetics* is misleading in terms of its content. The modules offer mainly physiology topics or very specialized topics on individual organic systems and their functions, especially muscles and tendons. The programme consists of 9 modules (7 basic/general and two alternative/elective), of which only five (50 ECTS) are from the field of biology. Due to compliance with legal acts, no less than 60 ECTS should be from field studies. Although there are some optional modules (e.g., Neuroscience) that could make up for the missing 10 ECTS from the field of biology, there is no indication in the SER of how many students choose these modules. In addition, Table 1 of the SER indicates that changes to the programme from 2014 removed the Sports Nutrition and Metabolism and Neuroscience modules from the list of required modules. While LSU staff does not consider these changes to be negative, the panel believes that these modules should have been retained as compulsory modules (as they are essential topics of the discipline).

### *3.1.4. Evaluation of compatibility of aims, learning outcomes, teaching/learning and assessment methods of the field and cycle study programmes*

#### *(1) Factual situation*

The aims, learning outcomes, teaching/learning and assessment methods of the field and cycle study programme are outlined in Annex 1 and Tables 3 and 4 of SER. The student workload consists of contact hours (10-15% of the study module volume) and individual student work (85-90% of the study module volume). 21 objectives of the study programme are divided into General competencies and Subject-specific competences. The General competencies are divided into: 1) Diverse knowledge and idea management, 2) Critical thinking, logical and heuristic problem solving, 3) Creativity, leadership and self-management, 4) Cooperation and communication, 5) Lifelong learning. The Subject-specific competences are divided into: 6) Analysis and synthesis of knowledge in sports biology, 7) Research activities, 8) Applied research activities. According to Table 3 of SER, most of the subject-specific competencies are acquired through the modules Skeletal Muscles and Motor Control (8 out of 13 subject-specific learning outcomes), Physiology of Aerobic Capacity (6/13 subject-specific learning outcomes) and Master's Thesis (8/13 subject-specific learning outcomes). Other modules, including Molecular Sports Biology and Sports Genetics, covered only up to 3 (out of 13) of the subject-specific learning outcomes of the programme (as provided in the Annex 1 of the SER, table entitled Consistency of the learning outcomes of the second cycle study programme *Sports Physiology and Genetics* with the learning outcomes of the modules). According to Table 4 of SER, the achievement of each of the programme learning outcomes is supported by a range of teaching/learning methods. The most common are: lectures (traditional/interactive), seminars, case study analysis, literature review, laboratory work, consultations (i.e. methodological support and advice to students from the lecturer). As stated in the SER, students are exposed to a high proportion of individual student work (85-90%) and quite low proportion of contact hours (currently 10-15%). Students are assessed according to the Procedure for the Assessment of Learning Outcomes at Lithuanian Sports University, approved by the Senate in 2018. According to SER, students are assessed mainly by written and oral examinations, but also by assessment of seminars, presentations and laboratory reports. A cumulative index system is used, where the final grade is derived from interim assessments with a certain weighting factor.

#### *(2) Expert judgement/indicator analysis*

In reviewing SER, panel members noted several inconsistencies in SER. For example, the table titled Consistency of the learning outcomes of the second cycle study programme *Sports Physiology and Genetics* with the learning outcomes of the modules presented in Annex 1 of the SER and Table 3 in the SER (titled Matrix of modules and competences of the second cycle study programme *Sports Physiology and Genetics*) should contain the same information, but the information differs in the two tables. In addition, the information on teaching/learning methods and assessment methods differs between Annex 1 and Table 4 of SER. Therefore, the data presented in the SER (especially those related to the coherence of learning outcomes, teaching/learning and assessment methods within the study programme (also addressed in

3.4.)) are questionable. During the site visit, no credible explanation for this situation was given.

The panel members agree that the nine modules are spread evenly over 4 semesters. However, considering the factual information from SER, which indicates that the Molecular Sports Biology and Sports Genetics modules cover only up to 3 (out of 13) subject specific learning outcomes of the programme, panel members concluded that genetics- based competencies are not being achieved at an appropriate level within the current programme (e.g., from the course descriptions of Molecular Sports Biology and Sports Genetics it is evident that the few general topics in genetics – i.e. DNA structure, gene and protein expression, signalling – are supported by applied research (laboratory work) in Molecular Sports Biology, whereas the other specific topics of Sports Genetics – i.e., epigenetics, genotype and muscle/training response, DNA isolation – are taught only theoretically in lectures and several seminars, but without laboratory work). Therefore, panel members concluded that genetics is not adequately represented in the compulsory part of the programme (as the title of the programme - *Sports Physiology and Genetics* - suggests). There are only two compulsory courses (Molecular Sports Biology and Sports Genetics) that cover the basic knowledge of genetics, and they achieve only an extremely small number of learning outcomes specific to the field of study in which this programme is located. Thus, instead of providing in-depth knowledge and skills in the particular area of study (as would be expected of a second-cycle programme), the current programme provides only a very basic, low-level knowledge of tasks related to genetics. This conclusion was further supported by feedback from alumni and students during the site visit - some of their responses indicated that genetic research data and molecular biology methods (e.g. PCR, DNA analysis) were not well represented in their laboratory exercises at LSU. They found it interesting and useful to visit a cardiology clinic to gain insight into DNA analysis procedures, and were excited by the comprehensiveness of the exercises that dealt with physiological topics. Thus, during the site visit, the panel was not told much about the reasons for the unsatisfactory acquisition of competencies in genetics. All of this led the panel to conclude that the structure of the programme of study is not well aligned with the intended learning outcomes and is not supported by appropriate teaching/learning methods.

Descriptions and learning outcomes of the curricula of universities/faculties from the webpage FindAMasters show that comparative MSc programs in Kinesiology, Sports performance, Sport and exercise physiology, Sport management, Sport and sustainability, European Master in health and physical activity etc. comprise extensive biology topics including biochemistry, cell biology and genetics. The courses in Sport and exercise genetics apply the newest molecular genetic knowledge and techniques to sport and exercise. In addition to traditional exercise physiology data obtained in the laboratory and recent genetic data are used to indicate subcellular processes and tissue composition that exist in given individuals, identify individuals with greater potential to achieve elite athletic performance, identify individuals with greater risk of disease and injury, and prescribe exercise training on a personalised basis. Key laboratory skills as well as microscopy is frequently used in molecular exercise physiology to visualise tissues, cells and molecules. These examples could be regarded as best world practises for interdisciplinary second level programs in sport and

health sciences. The panel agrees that substantial knowledge and practical/laboratory work from the biology field is missing in the MSc programme *Sports Physiology and genetics* to justify the graduate title Master of Life Sciences.

Furthermore, the content of the subjects studied in the second cycle of the life sciences programme must be of a higher academic level than in the first cycle. The study contents should be based on responsible academic and creative freedom and the unity of science and study, which is expected to achieve the desired learning outcomes. In summary, second cycle studies must provide in-depth knowledge and skills in the respective field of study. The requirements for the genetics major are profound knowledge and understanding of various areas of genetics, including genetic research methods and the latest genetic theories and technologies in practical situations. Appropriate learning and teaching methods to reinforce practical skills must be offered during the course of study. The panel members noted that this important component is lacking in the *Sports Physiology and Genetics* programme. Thus, the panel members concluded that the learning outcomes of the programme do not fully satisfy the level of the second study cycle as described in the Descriptor of Study Cycles. This is an essential shortcoming that should be eliminated.

Moreover, the aim of the programme [see 3.1.2] refers neither to sports physiology or genetics, but to the broader term 'sports biology' and the panel considered that this misalignment between the programme's title and its aim was confusing not only to the panel but probably also to teaching staff and, most importantly, to prospective students and employers. Although most students expressed during the site visit that they were very satisfied with the quality of the study programme and their professional development/mobility options, some students indicated that they would prefer more group work with other students and more presence and support from their teachers during their studies, i.e. three first year students expressed their interest for more contact lectures and practicals. This suggests that the high proportion of individual student work during study (85-90%) could be reduced, while the proportion of contact hours (currently 10-15%) could be increased. And this was an additional indication that the structure of the study programme is not well supported by appropriate teaching/learning methods. However, it is important to note that the second year students were not present at the interviews with the panel.

Table 1 of the SER indicates that changes to the programme of study from 2014 removed Sports Nutrition and Metabolism and Neuroscience from the list of compulsory modules. While LSU staff do not consider these changes to be negative (because students can choose these modules as alternatives, i.e. electives), the panel considers that these modules should have been retained as compulsory modules (because they are essential topics to the subject). Based on the information gathered at the SER and during the site visit, the panel members concluded that the title of the study programme (*Sports Physiology and Genetics*) did not reflect its content. Moreover, as stated above, the aim of the programme refers neither to sports physiology or genetics, but to the broader term 'sports biology'. Whilst the sports physiology topics and associated learning outcomes are well represented and well covered, the genetics topics / learning outcomes are poorly/inadequately represented and not covered at a satisfactory level (e.g., according to the information provided in the SER, there is not even

a single master's thesis on genetics). This problem becomes even greater if we take into account that students of different study profiles enrol in this programme, many of whom do not have basic biological knowledge, and eventually obtain the title of MSc of Life Sciences. The panel members conclude that students on this study programme should be exposed to genetics in a broader sense, including current genetic topics and techniques, such as the use of genetics in the treatment of disease and in training plans, genetic predisposition to certain diseases, etc. Actually, students enrolling in this study programme should have a basic knowledge of biology (students should enrol in this programme only if they have taken a comprehensive biology module and/or passed the differential exam, which gives them a background in biology that they can augment with specific knowledge of genetics in the Sports Physiology and Genetics programme).

### *3.1.5. Evaluation of the totality of the field and cycle study programme subjects/modules, which ensures consistent development of competences of students*

#### *(1) Factual situation*

SER indicates that the second-cycle *Sports Physiology and Genetics* programme enables students to achieve the intended learning outcomes of the programme as outlined in Tables 3 and 4 of SER. The programme of study is arranged in a logical sequence. The scope of the programme of study is 120 credits. Nine study modules are indicated in SER, including the Alternatives (electives, totaling 20 credits) and the Master's thesis (totaling 30 credits). The remaining seven modules (Molecular Sports Biology, Sports Genetics, Skeletal Muscles and Motor Control, Physiology of Aerobic Capacity, Methodology and Statistic in Biomedical Research, Mechanical Properties of Biological Tissues, Innovation and Research Projects) contribute 10 credits each to the programme. The modules are evenly distributed over 4 semesters (30 credits each) and are accredited according to the Procedure for Module Development and Accreditation at the Lithuanian Sports University, which is approved by the Senate in 2020. Some modules of the study programme focus on the acquisition of general competences, while other modules are more focused on subject-specific competences. Most modules include laboratory exercises focused on the development of practical skills and consolidation of theoretical knowledge. Based on SER and interviews during the field visit, the compulsory modules cover the main general and subject-specific competences, while a certain degree of further specialisation/student interest is offered through elective modules (Alternatives).

#### *(2) Expert judgement/indicator analysis*

Annex 1 of SER, together with additional evidence and factual information (module descriptions in Additional annex 2) provided by the staff responsible for writing SER, provides an overview of the 7 compulsory and 8 optional modules (Alternatives) within the *Sports Physiology and Genetics* programme. The structure of all modules is consistent with 30 contact hours and 230 hours of individual work. The contact hours are mainly lectures and seminars with a very small amount of laboratory work (only 42 hours in the entire



programme). The objectives and content of the Sports Genetics (SG) and Molecular Sports Biology (MSB) modules overlap. This is evident from the following aims and summaries, which can be found in the module descriptions in the SER.

The SG Aim: **Introduce** master students to the achievements in genetics and its application in sports sciences; the SG Summary: Modern genetics tightly integrate molecular research methods which have been the primary driving force in the recent development of **health sciences**, including medicine, biology, physiology, and exercise/sport physiology. **Master students of health sciences at LSU therefore require basic understanding** in modern genetics as well as principles of its research methods and possibilities of their implementation into the field of sports and exercise physiology.

The MSB Aim: **Introduce** master students to the achievements in molecular biology and its application in sports sciences; The MSB Summary: Modern biology and physiology tightly integrate molecular research methods, which have been the primary driving force in the recent development of **health sciences**. Master students of **health sciences** at LSU therefore also require basic understanding in modern biology as well as principles of its research methods and possibilities of their implementation into the field of sports and exercise physiology.

These objectives and content (of both the SG and MSB modules) clearly refer to "master's students in health sciences" (rather than master's students in biological sciences, as would be expected from the expected qualification degree of the *Sports Physiology and Genetics* programme), and the main objectives refer to the **introduction** to study-specific areas (which would be expected for the first cycle of study, but not for the second study cycle, which is supposed to provide in-depth knowledge and skills in the respective field of study). Thus, even the main objectives of the courses that should cover the genetic learning outcomes within the programme are not aligned with the qualification degree and level of the second cycle of study. This is an essential shortcoming that should be eliminated.

The content of the modules supports the statement made by SER that the programme is designed to train specialists in sports physiology and professionals in the fields of sports coaching, physical education, physiotherapy, public health, sports and leisure management. Therefore, the panel considers that the *Sports Physiology and Genetics* study programme at LSU provides consistent development of student competencies necessary for employers who search for/employ experts in sports physiology (but not in biological/life sciences, as the title of the degree suggests). This comment also supports the findings of the panel members already mentioned under criterion 3.1.1. According to SER and discussions with LSU staff during the site visit, the primary goal of the programme is to prepare qualified Master of Life Sciences students to creatively develop knowledge of sports biology, organise and conduct research independently, and use research findings in solving problems related to health and physical fitness using both sports physiology and genetics tools. However, by comparing the title and curriculum (modules and associated learning outcomes) of the degree programme and considering responses from multiple stakeholders (students, alumni, social partners, LSU staff) during the site visit, the panel concluded that the degree programme's focus on genetics was not appropriate and this is an essential shortcoming that should be eliminated. If the title



of the programme indicates that the programme aims to educate graduates in both sports physiology and genetics, then all traditional (basic) and modern (emerging) topics in classical and modern physiology and genetics should be covered by the curriculum/study plan/learning outcomes.

The University admits that 'improvement of the structure of the study programme taking into account the relationship between the aim (of the whole programme and each module separately), the intended learning outcomes, and teaching/ learning and assessment methods' is an area of improvement. The panel agrees entirely with this statement.

### *3.1.6. Evaluation of opportunities for students to personalise the structure of field study programmes according to their personal learning objectives and intended learning outcomes*

#### *(1) Factual situation*

LSU students have the opportunity to choose from the eight elective modules offered (i.e. Education of Social Skills and Values in Sports, Nutrition and Obesity Prevention, Sports Nutrition and Metabolism, Biology and Genetics of Skeletal Muscle, Methodology for the Development of Motor and Cognitive Functions, Neuroscience, Information Technology in Sport, Personal and Public Health, Psychology of Sport, and Physical Education) as provided in the Additional annex 2 of SER. Students choose elective modules in accordance with the Procedure for Selection of Optional Modules, approved by the Senate in 2020. Elective modules (Alternatives) are part of the programme of study in the second (spring) and third (autumn) semesters. In each of the two semesters, the elective modules contribute 10 credits to the programme of study. LSU also has The Regulations for the Preparation of Individual Study Plans (ISP) regulation approved by the 2019 LSU Senate. The ISP is a list of required and elective modules that a student will study, arranged according to a specific programme of study and the student's interests. Under the ISP regulations, advanced full-time and part-time students may study under special conditions agreed between a student and the director of the study programme.

#### *(2) Expert judgement/indicator analysis*

The panel judges that the *Sports Physiology and Genetics* programme at LSU offers students clear opportunities to shape the structure of their studies according to their personal goals. Eight elective modules within the programme of study and the opportunity to design an ISP provide students with good opportunities to achieve their personal learning goals. SER does not provide evidence/list of elective modules (Alternatives), although there are descriptions of the 8 extra modules in Additional annex 2 [sent at request of the panel before the site visit], suggesting that these are offered as Alternatives. Discussions with senior LSU staff revealed that students can choose/take any module from other LSU study programmes. During the site visit, students were unable to list any elective modules (they could not recall), but they claimed that they were completely satisfied with the alternatives offered. Judging from the alumni and social partners' (employers') statements during the site visit, the elective modules

seem to be well matched to student demand and labour market requirements. The panel members are of the opinion that some elective modules (e.g., Sports Nutrition and Metabolism, Biology and Genetics of Skeletal Muscle, Neuroscience) should be part of the compulsory modules in the *Sports Physiology and Genetics* programme.

### *3.1.7. Evaluation of compliance of final theses with the field and cycle requirements*

#### *(1) Factual situation*

The master's thesis contributes 30 study credits to LSU's *Sports Physiology and Genetics* study programme. SER does not specify the number of (self)study hours required to prepare and defend the thesis. However, it is noted that the master's thesis should be based on independent analytical work by the student and should be directed toward meeting the intended competencies and learning outcomes of the programme of study, as shown in Table 4 of SER. The selection of master's thesis topics and supervisors, as well as the procedures for the preparation, defence, and evaluation of the master's thesis, are specified in the Regulation for Final Master's Thesis Preparation and Defence approved by the LSU Senate in 2016 (and revised in 2019). Thesis topics may also be proposed by LSU's social partners (depending on the topics relevant to them) and by students (depending on their personal interests). Annex 2 of SER contains the list of master's theses defended in 2018-2020.

#### *(2) Expert judgement/indicator analysis*

The panel judges that the Master Thesis at the *Sports Physiology and Genetics* programme at LSU moderately meets the requirements of the field and the cycle. Reviewing the list of theses defended in the programme since 2018 (Annex 2 of SER), the panel members noted that all theses are related to the topics of sports physiology (there is not a single master's thesis related to genetics). During the site visit, senior management staff explained this as a result of the Covid pandemic - apparently there are some theses related to genetics, but students were unable to complete them because of the pandemic. The final theses available in the supplemental materials of SER are evidence that students are conducting independent research during the thesis process that is at a satisfactory level in terms of the scope of research tasks and the quality of statistical data processing. According to information in SER and while speaking with alumni and social partners, panel members also noted that while there is an opportunity for LSU social partners to propose topics for master's theses, there were no such topics in 2018-2020. However, students, LSU staff, and social partners indicated that there are opportunities for them to work with social partners to select the thesis topic. In addition, student interviews revealed that graduates do not use any genetics in their work although they find it "very important for new findings". Therefore, the panel members concluded that: 1) thesis topics could be better coordinated with social partners; and 2) LSU staff should: a) create the conditions and faculty support for students to work on MSc topics related to genetics; b) introduce interesting, modern teaching content in modules that include genetics topics that would encourage students to apply different genetic tools in their master's theses.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. Unique sport science oriented programme with strong ties to sport physiology research.
2. Successful collaboration between programme faculty and social partners (national sports centres, clubs, and federations), with exception that thesis topics could be better coordinated with social partners.
3. Clear opportunities for students to shape the structure of their studies according to their personal goals, including students with special needs.

#### ***(2) Weaknesses:***

1. The structure of the study programme is not aligned with the intended learning outcomes and is not supported by appropriate teaching/learning methods.
2. The study programme lacks general/basic topics in biology that would justify the title M.Sc. in Life Sciences.
3. The *Sports Physiology and Genetics* study programme does not fully meet the legal requirement of covering at least 60 credits in the field of study (i.e., Life Sciences, Biology).
4. The current title of the study programme (Sports Physiology and Genetics) does not reflect its content.
5. Contemporary genetic topics and techniques are inadequately covered by the current curriculum.
6. The amount of individual student work during the programme is not balanced with the number of contact hours with students.
7. Inadequate networking among social partners, faculty, and students with the aim of jointly producing and supervising students' master's theses, especially those with topics in genetics.

### **3.2. LINKS BETWEEN SCIENCE (ART) AND STUDIES**

***Links between science (art) and study activities shall be assessed in accordance with the following indicators:***

*3.2.1. Evaluation of the sufficiency of the science (applied science, art) activities implemented by the HEI for the field of research (art) related to the field of study*

#### ***(1) Factual situation***

The research activities have increased over the last five year both in quantity and quality. The research focus is mainly in brain and neuromuscular adaptations and was evaluated in 2018 as strong with limited international recognition. The research at LSU is carried out in five

strategic areas, and most of the research carried out in the strategic research area Muscles, Motor Control and Health Promotion within several different research projects are linked to the modules in the program. The same is the case for some research performed in the connection with the area Methodology of Sports and Exercise Training.

The master students participate in the research in the teams during laboratory works as well as during their master thesis. Students have the possibility to participate in conferences and write scientific articles in addition to taking the module Methodology and Statistics in Biomedical Research.

The researchers in the field are collaborating with international researchers from several different countries and some projects have had external funding. In addition, the university allocates funding for the purchase of equipment.

### *(2) Expert judgement/indicator analysis*

There are research activities in the field of study and there is some evidence of projects with external funding. The research conducted in the study field is sufficient and has some international recognition. There is collaboration nationally and internationally.

The research activities have increased in recent years. However, genetics is poorly represented in the research outputs of the staff, this contributes to the unsatisfactory judgement in Evaluation Area 1.

### *3.2.2. Evaluation of the link between the content of studies and the latest developments in science, art and technology*

#### *(1) Factual situation*

The SER gives examples of the research performed by the scientific staff, and gives examples on how the dissemination of the research projects (e.g. international symposium) give the students the opportunity to participate in such activities. The courses in the study programme are often based on analysis and presentation of the latest scientific articles. The students have the possibility to be involved in research through activities such as laboratory work and master thesis. The university has established laboratories for performing research and the students can use these facilities when performing the research in connection with their master thesis.

#### *(2) Expert judgement/indicator analysis*

The content of the study programme is updated based on the latest developments in science. This is done by application of new methods in this field to the study programme. The participation of the researchers in projects also ensures such updates as the teacher in the programme is conducting research in the field. However, specific examples of such updates were not given. During the site visit, the students elaborated on how the staff used their

research in the subjects, and it is evident that the staff use examples of new research in the subjects. However, genetics is poorly represented in the research outputs of teaching staff and this lack of underpinning research activity is a weakness, particularly for a programme with 'genetics' in its title, and this contributes to the unsatisfactory judgement in Evaluation Area 1. The lack of equipment to support the genetics part of the programme also means that the link between the content of the studies and science is only satisfactory.

### *3.2.3. Evaluation of conditions for students to get involved in scientific (applied science, art) activities consistent with their study cycle*

#### *(1) Factual situation*

The teachers at LSU must involve the students in research. Students have the opportunity to be involved in projects under the EU fund programme "Development of Scientific Competences of Scientists by Brain and Gain and Regeneration" and submit their projects together with LSU scientist or supervisor. The students have the possibility to be involved in research activities through preparation of laboratory works and master thesis and they are then a part of the research group.

#### *(2) Expert judgement/indicator analysis*

From the SER and the interviews, it is clear that the students have good opportunities to be involved in research. The students are an integrated part of the research groups and have the possibility to use the laboratories for research. The fact that equipment available is mostly for research in sports and exercise physiology, mean that the possibility for students to be involved in research is only satisfactory. There is evidence that students have co-authors on both journal articles and conference papers as evident from the supplementary documentation.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. Students have the possibility to engage in research.
2. Staff is changing the content of the subjects based on new development in the field.

#### ***(2) Weaknesses:***

1. New equipment mostly for research in the field of sports and exercise physiology.

### 3.3. STUDENT ADMISSION AND SUPPORT

*Student admission and support shall be evaluated according to the following indicators:*

#### *3.3.1. Evaluation of the suitability and publicity of student selection and admission criteria and process*

##### *(1) Factual situation*

Anyone with a Bachelors degree can apply to the programme, including those with degrees in social sciences, humanities, and management. Though there are no comprehensive requirements of competencies or knowledge, students who lack the content of 'Sports and Exercise Physiology' need to additionally read said course (10 credits in ECTS).

Selection is based on a 'competitive score' that mainly reflects the weighted average marks of modules listed in the transcript of records of the applicants. In addition students can improve their score through exceptional performance such as research articles or presentations, or outstanding sports activities.

The number of applicants fluctuated in recent years with a remarkable drop in average scores of non-state funded applicants, which LSU explains by an increase in foreign applicants in said category.

##### *(2) Expert judgement/indicator analysis*

The panel deems the student selection and admission criteria unsuitable for a masters programme in life sciences. To achieve the learning outcomes required for a second cycle degree in life sciences requires a base of competencies and knowledge that cannot possibly be acquired through any first degree and one 10 credit point course (see also other sections of this report).

If this programme were to achieve appropriate outcomes it would require applicants to bring an extensive set of prerequisites that cannot be accomplished through every bachelors programme. Programmes would need to have a significant overlap with this comprehensive set of competencies and knowledge. Only a small fraction of lacking requirements could be made up by additional courses taken in parallel to the programme itself.

There is an imperative to limit the scope of degrees that allow for entrance to the programme. These limitations should to be driven by the clear and transparent definition of competencies and knowledge expected. More additional courses should be recommended based on the difference in students competencies and knowledge from their previous degree and those expected.

#### *3.3.2. Evaluation of the procedure of recognition of foreign qualifications, partial studies and prior non-formal and informal learning and its application*

*(1) Factual situation*

The equivalence of foreign degrees is based on the judgement of SKVC. There are procedures in place for the acknowledgement of partial studies. Exchange studies are regulated by learning agreements between LSU and the respective partner. Decisions are made by the director of studies and the director of the study division. Informal and non-formal learning can be recognized through defined procedures. Few students so far have taken the opportunity to get external credits recognized.

*(2) Expert judgement/indicator analysis*

Processes are clearly defined and there is no indication of problems with the application of said procedures. Recognition of foreign qualifications is in line with the Lisbon convention and for student mobility learning agreements are put in place. Decisions are made by suitable commissions with input from teachers and other university offices. While there were no cases regarding non-formal and informal learning outcomes, all cases of students participating in mobility programs were handled according to the pre-defined procedures.

*3.3.3. Evaluation of conditions for ensuring academic mobility of students.*

*(1) Factual situation*

Exchanges are organized through the Erasmus+ mobility programs. LSU has over 90 partner universities in 27 European countries. Students receive information and consultation for these opportunities. Since 2019 few students in the programme have gone abroad and few foreign students enrolled in the English programme. The former is partially explained by the working status of many students as well as the global pandemic.

*(2) Expert judgement/indicator analysis*

The number of foreign students in the programme has increased over the last years from no incoming students in 2017-2018, to one student in 2019 and five students in 2020. The number of outgoing students on the other hand decreased from 4 in 2018 to one in 2019 and none in 2020. The absence of outgoing students in 2020 may reflect the impact of the global pandemic. The panel recognizes existing efforts, including the option to take the programme in English, but encourages the programme to increase mobility of students once external circumstances improve or through distance learning opportunities.

*3.3.4. Assessment of the suitability, adequacy and effectiveness of the academic, financial, social, psychological and personal support provided to the students of the field*

*(1) Factual situation*



Students receive academic and organizational support through the director of the study programme and the studies division. Scholarships are available to students based on academic performance, exceptional achievements, social needs or disability. Study loans are generally available. Further support, i.e. for international students (through the international relations department) or sport and mental health (via the sport and leisure center and the university's psychologist respectively), is provided.

*(2) Expert judgement/indicator analysis*

The university offers a range of support on many different issues. The panel considers the support adequate. The students are aware of the support that is offered, make use of the support structures and consider the support to be good overall.

### *3.3.5 Evaluation of the sufficiency of study information and student counselling*

*(1) Factual situation*

Students are provided all relevant information including module descriptions (which include among others the aims, outcomes, and assessment), relevant regulations, the use of the universities IT system, the availability and access to literature, and the administrative structure of the unit. Comprehensive additional information is provided during an introductory day by the study division and the director of the study programme. Course specific information is provided in the first lecture of each module by the responsible teacher.

*(2) Expert judgement/indicator analysis*

All relevant information for students, including module descriptions and schedules, are available to the students, among others through the university's website and the e-learning platform Moodle. Additional information is provided by responsables and teachers, and consultations are offered. The panel, in accordance with the feedback of the students, considers the information provided sufficient.

### ***Strengths and weaknesses of this evaluation area:***

***(1) Strengths:***

1. LSU offers a diverse range of support structures including physical and mental health.

***(2) Weaknesses:***

1. The student selection and admission is inadequate to achieve the outcomes necessary for a second cycle degree in life sciences. The prerequisite basic knowledge from the life sciences for the admission to the programme is not defined. Basic knowledge in biology of non-biology BSc graduates admitted is very low and the content and extent of the



bridging course Sports and exercise physiology is not available at the faculty website. In either case, however, these students could not possibly reach the expected outcomes required to achieve a M.Sc. in Life Sciences, especially given the nature of the programme described in the other sections.

### **3.4. TEACHING AND LEARNING, STUDENT PERFORMANCE AND GRADUATE EMPLOYMENT**

***Studying, student performance and graduate employment shall be evaluated according to the following indicators:***

*3.4.1. Evaluation of the teaching and learning process that enables to take into account the needs of the students and enable them to achieve the intended learning outcomes*

#### *(1) Factual situation*

As stated in the SER “the study process of the programme *Sports physiology and Genetics* includes complex tasks and research activities that are applied in sports business, industry or other fields related to physical activity and health”. Organization of study activities enables students to actively participate in the study process. The study assessment system based on clearly formulated criteria provides students with feedback on their achievements and learning outcomes and competences.

The methods of teaching/learning as presented in table 11 of the SER are very diverse and are based on modern educational approaches such as problem-based learning, case studies, group discussions, laboratory practice and project work. Assessment of students’ learning outcomes is based on the individual cumulative index system with the final grade being derived mostly from intermediate examinations. The methods of assessment are mostly written examinations/tests, reports on laboratory work, seminars and project reports.

The ratio of total contact and independent workload during the two years of the second cycle programme is 1:8, where contact hours represent less than 20% (actually 11% in two years) of the total workload, the rest is self-study workload.

It is reported that graduates continue their studies at the third level mostly in the PHD programme of biomedical sciences. Currently 19% of the graduates of the programme are studying at the third level and 71% are employed.

#### *(2) Expert judgement/indicator analysis*

A detailed analysis of individual study modules (7 obligatory basic/general and 2 alternative/elective) showed that teaching/learning methods are mostly based on formal lectures (90 contact hours) and seminars (81 contact hours) with very few laboratory classes (39 contact hours).

It is also very problematic that electives do not comprise any lab work. So study programme is mostly based on theoretical knowledge and literature analysis which are also the main criteria for the assessment. The basic topics in genetics overlap in the modules Sports genetics and Molecular Biology of Sports and the sections and themes described in the course descriptions are similar. Individual work by students makes up an overwhelming proportion of their activity, and there are no clearly defined criteria for its assessment. Basic assessment methods are written exams and seminars. The criteria for the evaluation of students' achievements are not clearly defined as stated in the SER.

As the MSc programme *Sports physiology and Genetics* is mostly focused to studies of muscular systems it cannot offer a solid base for further studies in biomedical sciences which is one of the exposed issues in the response concerning the great potential of graduates for PhD studies in biology.

The panel members consider that appropriate learning/teaching methods to consolidate practical skills have to be provided during the studies.

#### *3.4.2. Evaluation of conditions ensuring access to study for socially vulnerable groups and students with special needs*

##### *(1) Factual situation*

As evident from the webpage of LSU the faculty takes care of the students with special needs. With the aim to increase students' communication competences, awareness about the needs of students with disabilities and to create a friendly environment for students with disabilities, the LSU has recently implemented a project „*Studies without obstacles: integration of students with special needs into the University community*“. The University campus and its premises are fully or partly adapted to the needs of disabled students and students with reduced mobility, including reserved parking spaces, wheelchair elevators, disabled ramp access, adapted dormitory rooms, etc.

In the link <https://www.lsu.lt/en/studies/support-services/special-needs/> it is described that at the request of students, the University is willing to design an individual study plan adapted to individual needs of the disabled students. Various sports, physical education and recreational activities for LSU students with special needs have been organized by Kaunas Recreation and Sports Club for People with Disabilities since 1994.

##### *(2) Expert judgement/indicator analysis*

The panel judges that access to studies is good for both socially vulnerable students and students with special needs. It was not clear from the SER and discussions with students how the individual plans for students are prepared and who supervises the students' achievements.

### *3.4.3. Evaluation of the systematic nature of the monitoring of student study progress and feedback to students to promote self-assessment and subsequent planning of study progress*

#### *(1) Factual situation*

At the end of each semester, the Department of Studies conducts student surveys on study modules. The summarized results of the surveys are presented at the Rector's Office and Student Representation. The assessment of each module is submitted to the head of the department and to the teacher coordinating the module. In a case of excessive student complaints during the evaluation of the module, the module coordinator must submit a plan for the improvement of the module, which is discussed in the Study Quality Supervision Committee. Module coordinators are responsible for monitoring student achievements, informing and providing feedback to students and improving the quality of teaching. Feedback includes student consultations, discussions after examinations and presentations, explanations of mistakes and opportunities for students to express their opinions about the teaching of the module during the semester. Feedback data is used for study quality assurance and improvement of academic and non-academic services as well as strategic planning and other purposes. Ensuring feedback from students is regulated by the Procedures for Organizing and Evaluating Students' Attitudes to the Quality of Studies.

According to the SER, the quality of teaching is ensured by the fact that during the semester teachers constantly evaluate the students' study results, whereby a consistent multi-stage examination of study results prevails. Most study modules use an individual cumulative index system to assess students' knowledge and skills, with the final grade being derived from intermediate examinations, which are given certain weighting factors. The study assessment system should provide students with feedback on the validity of the assessment of their learning outcomes and completed assignments, so the study results' assessment is based on clearly formulated criteria.

Schedule of individual work tasks and their influence on final grade is defined for each module, and a ten grade criterion scale and summative evaluation system are applied.

The semester's individual work tasks are evaluated by grades, which are included in the final grade after examination.

According to discussions with students, their independent, individual workload within the module is too large (30 contact hours and 230 individual work). They would like to have more lectures and laboratory work and prefer group work. Students are not happy about extensive surveys about study modules, as they do not find them helpful in improving the study process.

#### *(2) Expert judgement/indicator analysis*

Students' study progress is monitored by lecturers and module coordinators at the end of semesters and during exams. The feedback to students about their achievements is mostly provided by frequent grading of their success through exams and seminars. The student's

individual workload is too large and does not enable the study progress, teamwork and self-assessment. It is necessary to differentiate the individual student workload and add more efficient teaching and learning forms (e.g laboratory work, practical training, individual consultations, team work, case studies) that would enable the students to play a more active role in the study process. More diversified and clearly defined assessment methods should be applied to ensure a continuous feedback to students, which would efficiently identify difficulties during their studies, and to ensure the real assessment of students' achievements.

#### *3.4.4. Evaluation of employability of graduates and graduate career tracking in the study field.*

##### *(1) Factual situation*

In the SER it is stated that "Information on graduates' and employers' opinions on graduates' professional training and acquired competencies after graduation is not collected." From 21 graduates during the four years (2017-2020), 15 (71%) were employed and 4 (19%) continued their studies at the third cycle.

##### *(2) Expert judgement/indicator analysis*

Feedback from employers concerning the employability of graduates and graduate career tracking in the study field is lacking. LSU should intensify communication with the labor market stakeholders, in order to gain a better insight into the employability of their graduates, and to better align the programme outcomes to the labor market. It is true that 17% of graduates continue their doctoral studies at University and are later employed there, but this does not solve the question of the overall perspective of graduate employability. Reports on graduates' employability and competences should be followed systematically during a longer period. The panel members assess that there were no improvements concerning contacts with graduates and employers since the last external evaluation.

#### *3.4.5. Evaluation of the implementation of policies to ensure academic integrity, tolerance and non-discrimination*

##### *(1) Factual situation*

According to the University Regulation of Studies and Code of Academic and Professional Ethics, the assessment of the student competencies should be fair, honest, in accordance with the aims and description of the module taught or final thesis. For fraudulent conduct, the student is not allowed to take the exam or interim assessment. The teacher submits an official report on the unfair student behavior to the Department of Studies head, which may result in a penalty. In such cases, students are required to retake the module.

##### *(2) Expert judgement/indicator analysis*

As it is evident from the SER and interviews during site visit, students are aware of the policies for the assurance of academic integrity, tolerance and non-discrimination. There have been no cases of violation of the principles of academic integrity, tolerance and non-discrimination during the last 3 years of studies.

#### *3.4.6. Evaluation of the effectiveness of the application of procedures for the submission and examination of appeals and complaints regarding the study process within the field studies*

##### *(1) Factual situation*

The application of the submission and examination procedures of appeals and complaints regarding the study process is described in the Regulations of Study Appeals of LSU. During the three year period, no complaints and appeals were submitted by the students of the study program.

##### *(2) Expert judgement/indicator analysis*

The panel finds that the procedures for appeals are well prepared and students are aware of their rights for complaints and procedures for the submission of appeals about final grades of final examinations and Final Theses.

#### *Strengths and weaknesses of this evaluation area:*

##### *(1) Strengths:*

1. LSU offers excellent studying opportunities for socially vulnerable students and students with special needs.
2. The implementation of academic integrity and non-discrimination policy is good.

##### *(2) Weaknesses:*

1. The teaching/learning methods for achievement of students' learning outcomes are mostly based on lectures and seminars, with very little laboratory practice. This is not a good approach as the contact hours within modules represent less than 20% of workload and criteria for self-studies/assessment are not clearly defined.
3. The quality and procedures of student assessment and feedback are too uniform and not transparent.
4. No official/supporting data are available on the employability and employers' opinions in relation to professional training and competencies of graduates. The procedures for communication with employers and graduates regarding the professional aspects of the programme and acquired competencies of graduates are not developed.

### 3.5. TEACHING STAFF

*Study field teaching staff shall be evaluated in accordance with the following indicators:*

*3.5.1. Evaluation of the adequacy of the number, qualification and competence (scientific, didactic, professional) of teaching staff within a field study programme(s) at the HEI in order to achieve the learning outcomes*

*(1) Factual situation*

All regular teachers of the programme have been employed by the University for at least three years. Of 14 teachers, eight are full professors and the remainder are associate professors. All have a PhD degree and seven work at the Institute of Sports Science and Innovations, where they undertake research directly related to the programme. All are experienced teachers and are active in research. The University supplied a list of the three most significant research papers per person in the last 5 years. This revealed that almost all staff had produced at least three papers in this period, most of which were in high quality international refereed journals. Sports physiology featured heavily, but very few papers showed convincing links to genetics. Workloading hours are in line with the University's requirements. Doctoral students are occasionally deployed to teach certain aspects, such as practical classes; and guest lecturers from overseas are occasionally deployed. All except two staff (B1) have English language competency graded at B2 or above.

*(2) Expert judgement/indicator analysis*

In terms of numbers of staff, there is adequate to support the programme; indeed there is a very favourable staff:student ratio that may allow for close supervision. There is considerable stability in the staffing base. Research outputs are consistently strong across the teaching staff, giving collectively a rich vein of experience in research across a broad range of subjects of relevance to sports physiology to draw upon in teaching duties. However, genetics is poorly represented in the research outputs of teaching staff and this lack of underpinning research activity is a weakness, particularly for a programme with 'genetics' in its title, and this contributes to the unsatisfactory judgement in Evaluation Area 1. Nonetheless, all except one of the outputs cited are multi-author showing that strong research networks have been forged. Doctoral students receive limited exposure to teaching duties, which enhances their career prospects and ensures a supply of higher education teachers. Students view lecturing staff as researchers first and teachers second. Although there has been no staff turnover during the evaluation period, the University offers a commendably broad range of training to new lecturing staff in both pedagogy and personal development. English language competency is sufficient to support delivery in English.

*3.5.2. Evaluation of conditions for ensuring teaching staffs' academic mobility (not applicable to studies carried out by HEIs operating under the conditions of exile)*

*(1) Factual situation*

Outgoing mobility is competitive, with two rounds of competition per year. Criteria relate to the subject of the proposed delivery and its fit with the host programme, and proficiency in language of instruction. Preference is given to those who are teaching into a consortium-based or joint study programme, who have agreed the details of the teaching, who have committed to a bilateral agreement, who have not (or less frequently than others) participated before, and who commit to additional cooperative duties during the exchange, for example in research. The teaching must be of at least eight-hours duration. During the last three academic years, almost half of the teachers of the programme were successful in the competition and participated in fifteen outgoing teaching staff mobility events. However, incoming mobility is rare: since 2017/18 there have only been two instances.

### *(2) Expert judgement/indicator analysis*

The University has sound arrangements for selecting staff for mobility programmes, including robust criteria. The programme staff have been keen participants in outgoing mobility, endeavours that will have enriched their knowledge, understanding and teaching performance, though there is scope for even greater involvement. There is also scope for addressing the very low incoming mobility to ensure that students get to experience a broad range of teachers with different perspectives, methods and cultures.

### *3.5.3. Evaluation of the conditions to improve the competences of the teaching staff*

#### *(1) Factual situation*

The University's 'Procedure for Preparation and Attestation of Study Modules' specifies requirements for teaching staff according to the level of study. The requirements include teaching experience, research performance, foreign language competency, initiatives in developing more efficient teaching and learning methods, and participation in competence development programmes. The SER mentioned that teachers' competence had been developed through a variety of means, including teaching exchanges, cooperation projects, foreign language classes, scientific conferences and IT training. The Panel requested a list showing each member of teaching staff and the events that contributed to their competence development over the last three years. This list contained only 10 staff members and the Panel can only conclude that four teachers did not participate in any development activity in the last three years. For the remainder developmental events were indicated, but only in a minority of persons were any of these in relation to higher education learning and teaching, including training on adoption of virtual learning methods in response to the pandemic. While teaching staff indicated that they had been trained in assessment in higher education they were unable to recall the details of the training. Further both senior management and teaching staff reported good levels of participation in pedagogic development, but the panel was not able to reconcile this position with the data presented to it.

#### *(2) Expert judgement/indicator analysis*



Since all staff are active in research, considerable professional development will accrue by virtue of maintaining a strong research presence. However, the means by which staff are developed was indicated in the self-evaluation only in very general means and conspicuous by its absence was any training in learning and teaching, despite this being a feature in determining the competence of staff to teach modules. This omission is even more troublesome since some students have indicated that some teaching quality was insufficient, and the study programme committee discussed the matter and presented a report to the Head of Department. A more detailed analysis revealed a lack of attention to systematic development in the learning and teaching competencies of teachers.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. Impressive research profile in sports physiology.
2. Good level of outgoing staff mobility.

#### ***(2) Weaknesses:***

1. A lack of significant underpinning research activity in genetics.
3. Low occurrence of incoming staff mobility.
4. Lack of attention to the professionalism of teaching staff in relation to learning and teaching.

## **3.6. LEARNING FACILITIES AND RESOURCES**

***Study field learning facilities and resources should be evaluated according to the following criteria:***

*3.6.1. Evaluation of the suitability and adequacy of the physical, informational and financial resources of the field studies to ensure an effective learning process*

#### ***(1) Factual situation***

The SER describes the infrastructure of the study field. The programme is implemented in several rooms in the university, with special rooms for seminars and practical exercises, computer classrooms as well as laboratories and the library. Classrooms are equipped with information equipment such as desktop computers, multimedia, projectors, loudspeakers etc. The SER gives an overview of the laboratory equipment used for the study program. The university has set up a mobile laboratory.

The students may use the Library that is renovated and reconstructed and there are working places for the students in the library. The library has subscribed to different databases since 2016 and subscribes to relevant e-scientific journals. During the pandemic increased access to



e-scientific journals have been given through the publishers. Online users have access to the library.

*(2) Expert judgement/indicator analysis*

The panel had the opportunity to review a video tour of the university facilities. This gave an overview of the equipment available for implementing the programme. The material in the SER and the video show that the university has equipment relating to sport physiology. During the site-visit it became evident that there is a request for more equipment for molecular biology and genetics, as the research they would like to do may be restricted by the lack of access to relevant equipment. This lack of equipment for genetics research and teaching to support a programme with 'genetics' in its title also contributes to the unsatisfactory judgement of Evaluation Area 1. The students were not familiar with the opportunities that the library had for access to electronic journals.

*3.6.2. Evaluation of the planning and upgrading of resources needed to carry out the field studies*

*(1) Factual situation*

The process of study implementation planning, and renewal is carried out according to University Rector's order (2010-01-04, No 9K) confirmed by a budget construction procedure. The budget is formed per financial year and includes funds for the acquisition of short-term and long-term property of studies and research. Each department of the university provides the needs for funds for its unit for the acquisition of study aids and professional development and the needs for update of information technology and scientific literature is submitted to the relevant departments. The study programme has been given economical support for upgrading of equipment and running costs. The plan for improvement of the infrastructure required for the studies are related to the strategy of the university.

*(2) Expert judgement/indicator analysis*

There is evidence that the university has procedures for planning and upgrading of equipment. The SER and the material provided for the infrastructure show the facilities.

***Strengths and weaknesses of this evaluation area:***

***(1) Strengths:***

1. Procedure for planning and upgrading of equipment.
2. Mobile laboratory gives new opportunities for research.

***(2) Weaknesses:***

1. Students not aware of the access to e-journals.

2. Genetics laboratories are not developed enough.

### **3.7. STUDY QUALITY MANAGEMENT AND PUBLIC INFORMATION**

*Study quality management and publicity shall be evaluated according to the following indicators:*

#### *3.7.1. Evaluation of the effectiveness of the internal quality assurance system of the studies*

##### *(1) Factual situation*

At LSU, the department, and in particular the study programme committee, is responsible for the organization and quality of the programme. They are supported by various actors at the university level, such as the study department and the international relations office. LSU's quality assurance is based on a study quality assurance system, which was introduced in 2013 and updated in 2021. The primary responsibility for quality at the institutional level rests with the university's senate. Governance, administration, decision-making, and quality assurance are described in a number of official documents, including the Statute of LSU, the Study Quality Assurance regulations, and many more.

Quality is assured and improved through internal assessments, certification of study modules, and monitoring of feedback. At the study programme level, the study programme committee, which includes students and stakeholders, performs quality work under the leadership of the study programme director, who also represents the study programme externally, organizes continuous revision, and ensures dissemination of information. A quality assessment is organized at regular intervals and specific modules are reviewed each semester. The programme committee presents proposals for improvement, which are ultimately approved by the university's senate. Once a year the results of theses and defences are discussed and recommendations for improvement are formulated.

##### *(2) Expert judgement/indicator analysis*

LSU has defined its decision-making and administrative processes in various documents. The key players are the Study Programme Committee, the programme director, the head of the department, and the university's senate. However, there is no information on the exact resources and facilities used for quality work. In the SER there is also no information on the frequency of internal evaluations and certifications, other than the module surveys that occur each semester.

From the SER, the structure for implementing changes seems to be partially at odds with the descriptions in section 7.3. of the SER and it is not clear when and how the senate, the department of health promotion and rehabilitation and the academic departments are involved.

### *3.7.2. Evaluation of the effectiveness of the involvement of stakeholders (students and other stakeholders) in internal quality assurance*

#### *(1) Factual situation*

Stakeholders are part of the programme committee and other working groups and provide comments and suggestions. Social partners also participate in the preparation and defences of master's theses. LSU has close relationships with its graduates as they often continue their doctoral studies at LSU or work in LSU departments.

#### *(2) Expert judgement/indicator analysis*

The SER provides little information about stakeholder involvement beyond attendance at committee meetings. While LSU appears to have good connections with employers and alumni, many of whom still work or study at LSU, student involvement in internal quality assurance remains rather unclear.

### *3.7.3. Evaluation of the collection, use and publication of information on studies, their evaluation and improvement processes and outcomes*

#### *(1) Factual situation*

LSU conducts surveys of students, lecturers, graduates, and employers. The programme committee provides conclusions and recommendations for module improvement. Quantitative and qualitative information about the programme is regularly posted on the university's website, including self-assessment results, students and other stakeholder comments, and graduate career indicators. Study programmes and module descriptions are placed in the academic information system (AIKOS) and published on the website by the department of studies.

The programme committee is responsible for the content of the study programme and its improvement, implementation and continuous monitoring of quality. It provides the department of health promotion and rehabilitation with a development plan and suggestions for improvement. It also reviews and approves the list of elective modules annually. Together with the department of studies it analyses changes in the course of studies and makes suggestions for improvement based on indicators such as employment of graduates and feedback from employers.

#### *(2) Expert judgement/indicator analysis*

The SER describes how basic information about the programme is published on the website and the system AIKOS. This includes quantitative and qualitative information that is not

described in detail and it remains unclear what it includes and how detailed it is. Supposedly, this includes self-assessment results and comments from students and other stakeholders.

#### *3.7.4. Evaluation of the opinion of the field students (collected in the ways and by the means chosen by the SKVC or the HEI) about the quality of the studies at the HEI*

##### *(1) Factual situation*

The most recent internal survey results (2019-2020) indicate that the overall teaching quality was good to very good. However, some students indicated that the quality of teaching was inadequate for some lectures, that some modules lacked practical components, and that the alignment between teaching and assessment was not optimal for some courses. These issues were subsequently discussed in the programme committee and the conclusions were forwarded to the head of the department. If these findings persisted, the head of the department could forward this information to the lecturer admission commission and arrange for extraordinary certification.

##### *(2) Expert judgement/indicator analysis*

Although the SER contained information about survey results and the mechanism to deal with them, it provided no information on how the University had responded to the significant concerns of students.

#### ***Strengths and weaknesses of this evaluation area:***

##### ***(1) Strengths:***

1. There is an internal system in which information on studies, their evaluation and improvement processes and outcomes are publicly available.

##### ***(2) Weaknesses:***

1. Even when taking into account the quality management handbook it remains unclear how continuous improvement is achieved, and if and how follow-ups are organised. The panel saw no documentation showing a closed loop in quality assurance.
2. The current system seems to identify and address acute issues, but it remains unclear if and how student feedback also leads to incremental improvements. If this was the case, again, the documentation is lacking.

#### IV. MAIN ARGUMENTS FOR NEGATIVE EVALUATION\*

The table below indicates the main arguments for negative evaluation as points for action. Those formulated with the word ‘must’ should be completed to assure that students admitted before study field’s non-accreditation will gain knowledge and skills at least at minimum level.

Evaluation Area	Points for Action for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	<p>The classification of the <i>Sports Physiology and Genetics</i> programme as a Life sciences programme <b>must</b> be revised because the programme lacks general/basic topics in biology that would justify the title of M.Sc. in Life Sciences.</p> <p>Students enrolling in this study programme must normally have a comprehensive knowledge of biology. If students do not have such knowledge they must take and pass a comprehensive biology module, to be taken alongside their other modules, that gives them the required knowledge.</p> <p>Since the title of the study programme does not reflect its content, the title <b>must</b> be changed to exclude the word <i>Genetics</i> <b>OR</b> Contemporary genetic topics and techniques <b>must</b> be included in the curriculum, e.g, the use of genetics in the treatment of disease and in training plans, genetic predisposition to certain diseases, etc., in substantial amount.</p> <p>Reconsider the list of required and elective modules. Some elective modules (e.g., Sports Nutrition and Metabolism, Biology and Genetics of Skeletal Muscle, Neuroscience ) could become compulsory modules.</p> <p>Improve networking between social partners, faculty and students with the aim of jointly producing and supervising students' Masters theses, especially those dealing with genetics topics.</p> <p>Introduce interesting, modern teaching content in modules that include genetic topics to encourage students to use different genetic tools in their Master's theses.</p>
Links between science (art) and studies	<p><b>IF the title of the study programme is retained</b>, research in both sports physiology and genetics <b>must</b> be sufficient to support a strong link between the science performed and the title of the programme.</p>
Student admission and support	<p>The range of degrees that allow for entrance to the programme <b>must</b> be limited. These limitations <b>must</b> be driven by the clear and transparent definition of competencies and knowledge expected.</p> <p>Increase mobility of students once external circumstances improve or enhance distance learning opportunities.</p>

Evaluation Area	Points for Action for the Evaluation Area (study cycle)
Teaching and learning, student performance and graduate employment	<p>To improve student performance and meet the intended outcomes of the programme especially in the field of genetics these steps <b>must</b> be taken: revise the curriculum, update the course descriptions, and introduce diversified methods of teaching and assessment.</p> <p>Reduce students' individual workload and increase feedback and student self-assessment in the teaching and learning process.</p> <p>The majority of contact hours are lectures and seminars, and laboratory work and practical training should be increased.</p> <p>Improve communication with graduates and employers to increase the interest of students for the programme.</p> <p>The content and the extent of the bridging course for non-biology graduates should be clearly defined and accessible on the website.</p>
Teaching staff	<p><b>IF the title of the study programme is retained</b>, the scientific underpinning through research in genetics <b>must</b> be increased.</p> <p>Increase incoming staff mobility.</p> <p>Re-evaluate the whole approach to ensuring that teaching staff are competent to perform their duties. This involves ensuring that all staff are adequately and professionally trained for her/his role as a teacher and assessor in higher education, including in the use of modern pedagogic techniques.</p>
Learning facilities and resources	<p><b>IF the title of the study programme is retained</b>, the equipment for the genetics part of the programme <b>must</b> be upgraded.</p> <p>Enhance the marketing of the library services to students.</p>
Study quality management and public information	<p>The degree of responsibility of the various stakeholders (including, but not limited to senate, department head, study programme committee, students, faculty, alumni) in the internal quality assurance system of the studies should be clearly defined.</p> <p>Examine, analyse, discuss and formulate actions arising from the results of student surveys in the internal quality assurance system of the programme.</p>

\*If the study field is going to be given negative evaluation (non-accreditation) instead of RECOMMENDATIONS main **arguments for negative evaluation** (non-accreditation) must be provided together with a **list of “must do” actions** in order to assure that students admitted before study field's non-accreditation will gain knowledge and skills at least on minimum level.

## V. SUMMARY

### **Main positive and negative quality aspects of each evaluation area of the study field *Biology* at Lithuanian Sports University:**

The report on the overall evaluation of the BSc programme in Sports Physiology and Genetics is negative as there are essential shortcomings that must be eliminated. The panel has received information necessary for evaluation of the programme. Based on the SER and virtual meetings with various stakeholders, as well as additional documentation kindly provided by LSU, the panel highlights the main positive and negative quality aspects of the programmes' evaluation as follows.

#### Negative quality aspects of evaluation:

In evaluation area 1, there are essential shortcomings that must be eliminated. The structure of the study programme is not aligned with the intended learning outcomes and is not supported by appropriate teaching/learning methods. The study programme lacks general/basic topics in biology that would justify the title M.Sc. in Life Sciences. The current title of the study programme (*Sports Physiology and Genetics*) does not reflect its content. The programme does not fully meet the legal requirement of covering at least 60 credits in the field of study. The amount of individual student work during the programme is not balanced with the number of contact hours with students. Contemporary genetic topics and techniques are inadequately covered by the current curriculum and there is not enough research in this part of the field to support the programme. As the report shows, the lack of consistency between the title and the content of the programme is also reflected in other evaluation areas. There is also a low occurrence of incoming staff mobility and a lack of attention to the professionalism of teaching staff in relation to learning and teaching. Inadequate networking among social partners, faculty, and students with the aim of jointly producing and supervising students' master's theses, especially those with topics in genetics. The new equipment provided is mostly for research in the field of sports and exercise physiology. The student selection and admission is inadequate to achieve the outcomes necessary for a second cycle degree in life sciences. The prerequisite basic knowledge from the life sciences for the admission to the programme is not defined. Basic knowledge in biology of non-biology BSc graduates admitted is very low and the content and extent of the bridging course Sports and exercise physiology is not available at the faculty website. The teaching/learning methods for achievement of students' learning outcomes are mostly based on lectures and seminars, with very little laboratory practice. This is not a good approach as the contact hours within modules represent less than 20% of workload and criteria for self-studies/assessment are not clearly defined. The quality and procedures of student assessment and feedback are too uniform and not transparent. No official/supporting data is available on the employability and employers' opinions in relation to professional training and competencies of graduates. The procedures for communication with employers and graduates regarding the professional aspects of the programme and acquired competencies of graduates are not developed. The



level of responsibility of the different stakeholders (senate, department head, study programme committee, students, teachers, alumni) in the internal quality assurance system of the studies is not clearly defined. In the internal quality assurance system of the studies, too little importance is attached to the opinion of the students and the results of student surveys.

#### Positive quality aspects of the evaluation

There is a demand for such a programme among the stakeholders, although the current programme does not ensure that the students graduating are getting the skills and competencies in Sports Physiology and Genetics. This is a unique sport science-oriented programme with strong ties to sport physiology research. There is successful collaboration between programme faculty and social partners (national sports centres, clubs, and federations), with the exception that thesis topics could be better coordinated with social partners. Clear opportunities for students to shape the structure of their studies according to their personal goals exist, including students with special needs. Students have the possibility to engage in research. Staff change the content of the subjects based on new development in the field. LSU offers excellent studying opportunities for socially vulnerable students and students with special needs. The implementation of academic integrity and non-discrimination policy is good. Considering the staff, there is an impressive research profile in sports physiology as well as a good level of outgoing staff mobility. LSU has a procedure for planning and upgrading of equipment. The new mobile laboratory gives new opportunities for research. LSU has an internal system in which information on studies, their evaluation and improvement processes and outcomes are publicly available.

Signature of expert panel chairperson:

Prof. dr. Mark S. Davies