



განათლების ხარისხის განვითარების ეროვნული ცენტრი
NATIONAL CENTER FOR EDUCATIONAL QUALITY ENHANCEMENT

Accreditation Expert Group Report on Higher Education Programme

**Doctoral Programme in Computer Science
The University of Georgia**

Date of Evaluation: 17 October 2019

Report Submission Date: 3 December 2019

Tbilisi
2019

HEI's Information Profile

Name of Institution Indicating its Organizational Legal Form	The University of Georgia
HEI's Identification Code	205037137
Type of Institution	University

Higher Education Programme Information Profile

Name of the Programme	Computer Science
Level of Education	Doctoral
Qualification Granted Indicating Qualification Code	Doctor of Computer Science 0613
Language of Instruction	Georgian
Number of Credits	180
Programme Status (Authorized/ Accredited/New)	Accredited

Expert Panel Members

Chair (Name, Surname, University/organization/Country)	Donald Sannella, University of Edinburgh, Scotland
Member (Name, Surname, University/organization/Country)	Mikheil Rukhaia, Tbilisi State University, Georgia
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Accreditation Report Executive Summary

- **General information on the education programme**

A previously-accredited doctoral programme in the School of Science of Technology at the University of Georgia, which covered Mathematics, Physics and Computer Science, is being split into separate

specialised programmes in those three disciplines. The proposed doctoral programme under consideration is the one in Computer Science. There are currently 7 students studying on that part of the programme, and there are 2 alumni.

The specialised doctoral programme in Computer Science is a 180 ECTS programme taught in Georgian comprising 40 credits of compulsory courses, 20 credits of elective courses, and a 120 credit research project. The curriculum has been reduced from the existing doctoral programme in Mathematics, Physics and Computer Science, and a subject on research project management has been added.

- **Brief overview of the accreditation site-visit**

Before the accreditation site visit, all members of the Expert Panel were supplied with a 22-page self-evaluation report together with a specification of the proposed doctoral programme and the syllabi of the nine courses on the programme. Some of the statistical information in the self-evaluation report was missing or incorrect. The following further information was supplied in Georgian: documentation of the qualifications of staff involved with the programme, including information on staff development and job descriptions; a budget; memoranda concerning cooperation with other organisations; a list of recent doctoral graduates in Computer Science; documentation on quality assurance of doctoral programmes, including samples of questionnaires; the decision by the Academic Council of the University of Georgia to approve the Doctoral programme; and information about staff planning, appraisals, and quality improvement guidelines. The information provided did not adequately address some parts of the accreditation standards.

The Expert Panel visited the School of Science and Technology at the University of Georgia on 17 October 2019 and interviewed members of the university administration together with members of the Quality Assurance Office, the team responsible for the self-evaluation report together with the programme director, members of academic staff and invited staff, students and (by telephone) an alumnus, and were given a tour of facilities.

On request, near the end of the site visit the programme director supplied corrections to some of the statistical information at the beginning of the self-evaluation report, together with information about research projects. The Expert Panel requested a copy of the 2014 accreditation report for the doctoral programme in Mathematics, Physics and Computer Science, and this was received from EQE after the Expert Panel visit had concluded.

The Expert Panel expresses its thanks for the cooperation of all participants and their participation in discussions during the site visit.

- **Summary of education programme's compliance with the standards**

The programme complies with all standards apart from components 2.1, 2.3, 3.2, 4.1 with which it substantially complies.

- **Summary of Recommendations**

1. Relax the admission requirements to allow a Master's degree in closely related fields.
2. The course descriptions should include documentation of the knowledge that students need to have before they take the course.
3. A document defining the rights and obligations of the supervisor and the supervision process should be produced.
4. Involve more field-related active researchers in the programme.

- **Summary of Suggestions**

1. Consider including the mapping of classes of practical problems to the presented abstract methods in the "Theory of algorithms" course.

2. Consider involving an international reviewer for the PhD dissertation.
 3. Encourage academic staff to submit fundamental and applied research proposals to national and international funding bodies.
- **Summary of best practices (If Applicable)**

 - **In case of accredited programme, summary of significant accomplishments and/or progress (If Applicable)**

Compliance of the Programme with Accreditation Standards

1. Educational programme objectives, learning outcomes and their compliance with the programme

A programme has clearly established objectives and learning outcomes, which are logically connected to each other. Programme objectives are consistent with the mission, objectives and strategic plan of the institution. Programme learning outcomes are assessed on a regular basis in order to improve the programme.

1.1 Programme Objectives
<p>Programme objectives define the set of knowledge, skills and competences the programme aims to develop in graduate students. They also illustrate the contribution to the development of the field and the society.</p>
<p>Descriptive summary and analysis of compliance with standard requirements</p> <p>The goal of the programme is to produce scientific research and to create new knowledge in the field of computer science, to develop scientific research skills, analytical thinking, problem solving skills for the purpose of planning, implementing and managing scientific projects. The graduates will be able to work in educational, scientific-research institutions in academic / scientific positions, or in the private and public sector in analytical, IT managerial and company development activity groups.</p> <p>The programme objectives are clear, realistic and achievable. They are included in the description of the programme and they can be easily accessed online on the university website. The programme objectives are consistent with the mission of GTU. They reflect HEI standards and are consistent with the descriptor of the Doctoral level of qualification in the higher education qualification framework.</p> <p>The programme offers high-quality education in the field of Computer Science and prepares graduates who can obtain employment as researchers or lecturers in Computer Science. Evidence from the University surveys among its alumni shows that the study process is comfortable for students. There is a need for graduates possessing the skills that the programme aims to develop, for example in the School of Science and Technology itself.</p>
<p>Evidences/indicators</p> <ul style="list-style-type: none"> ● Interview with head of the programme ● The programme description ● Learning Course syllabi ● Interview with alumnus ● University website
<p>Recommendations:</p>
<p>Suggestions for programme development:</p>
<p>Best Practices (if applicable):</p>
<p>In case of accredited programme, significant accomplishments and/or progress</p>
<p>Evaluation</p> <p style="text-align: center;">X Complies with requirements</p>

- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

1.2. Programme Learning Outcomes

- Programme learning outcomes describe knowledge, skills, and/or the sense of responsibility and autonomy, students gain upon completion of the programme;
- Programme learning outcomes assessment cycle consists of defining, collecting and analysing data;
- Programme learning outcomes assessment results are utilized for the improvement of the programme.

Descriptive summary and analysis of compliance with standard requirements

The description of the programme gives a list of 21 learning outcomes, classified into knowledge and understanding (5 learning outcomes), skills (13 learning outcomes), and responsibility and autonomy (3 learning outcomes). It gives a list of methods and activities for achieving learning outcomes, explains the operation of the Advisory Board which manages each doctoral student's activities, gives information about evaluation, and lists the mandatory and elective courses on the programme.

Although 21 is a large number of learning outcomes, meaning that there is probably scope for combination and consolidation, the learning outcomes are clear and explicit and are relevant to achieving the objectives of the programme. They are measurable, achievable and realistic and are consistent with the descriptor of the Doctoral level of qualification in the higher education qualification framework. They are relevant to the requirements for a member of academic staff at a higher education institution, which is the primary field of employment envisioned for graduates of the programme.

The learning outcomes of the programme are evaluated periodically at the stages of passing the study modules. Midterm and final exams are used to measure learning outcomes, and their results are analysed by the Advisory Board. The learning modules envisage oral and written exams and presentations, which imply the submission of a predefined topic in electronic form by the doctoral student.

Based on the analysis of the learning and research outcomes, the Advisory Board issues specific recommendations for further development of the doctoral student. Recommendations include the suggestion to prepare his/her results for presentation at a local or international conference, or in a scientific journal. Also, according to the experience gained, the Advisory Board discusses further improvement and development of the programme.

The Expert Panel considers that these measures for assessment and guidance are appropriate to the objectives of a programme at Doctoral level.

Evidences/indicators

- Interviews with head of the programme and with members of the Quality Assurance Office
- Self-evaluation report

<ul style="list-style-type: none"> • The programme description • Learning Course syllabi
Recommendations:
Suggestions for programme development:
Best Practices (if applicable):
In case of accredited programme, significant accomplishments and/or progress
Evaluation <input checked="" type="checkbox"/> Complies with requirements <input type="checkbox"/> Substantially complies with requirements <input type="checkbox"/> Partially complies with requirements <input type="checkbox"/> Does not comply with requirements

Programme's Compliance with Standard

Standard	Complies with Requirements	Substantially complies with requirements	Partially Complies with Requirements	Does not Comply with Requirements
Educational programme objectives, learning outcomes and their compliance with the programme	X			

2. Teaching methodology and organization, adequate evaluation of programme mastering

Programme admission preconditions, programme structure, content, teaching and learning methods, and student assessment ensure the achievement of programme objectives and intended learning outcomes.

2.1. Programme Admission Preconditions

Higher education institution has relevant, transparent, fair, public and accessible programme admission preconditions.

Descriptive summary and analysis of compliance with standard requirements

The programme admission preconditions take programme characteristics into consideration and ensure admission of students with relevant knowledge, skills and competences for mastering the programme. Students holding a Masters or equivalent degree in Information Technology / Computer Science / Informatics can be admitted to the doctoral program. In addition, they will be required to present a written concept of a relevant research topic for the doctoral program announced. The decision makers take into account the compliance of the concept presented by the candidate in written and oral form with the candidate's research skills, as well as with the subject and resources

of the School of Science and Technology. Admission to the programme is announced on the basis of research topics previously approved by the School Academic Board. The topics announced are in compliance with the School's scientific interests.

The programme admission preconditions and procedures are consistent with existing legislation.

The programme admission preconditions and procedures are publicly available at the web site of the university. The programme admission terms and research topics are publicly posted on the University and School website. Interested persons can address the head of the programme in person to get detailed information.

The programme's admission requirement that applicants hold a Master's or equivalent academic degree in Information Technology / Computer Sciences / Information science is a very strict requirement, as some universities graduate Masters in other disciplines with good mathematical and computer knowledge.

Evidences/indicators

- The programme description
- Provisions on Doctoral and Master Studies
- Web-site www.ug.edu.ge
- Interviews with administration and academic staff

Recommendations:

Relax the admission requirements to allow a Master's degree in closely related fields.

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

2.2 Educational Programme Structure and Content

Programme is designed according to HEI's methodology for planning, designing and developing of educational programmes. Programme content takes programme admission preconditions and programme learning outcomes into account. Programme structure is consistent and logical. Programme content and structure ensure the achievement of programme learning outcomes. Qualification to be granted is consistent with programme content and learning outcomes.

Descriptive summary and analysis of compliance with standard requirements

The programme is structured in accordance with Georgian legislation and the European Credit Transfer System. It is composed according to the university regulations, with the involvement of academic personnel, potential employers, the Quality Assurance Service and students.

The programme content, volume and complexity corresponds to the education level of a Doctoral degree.

The programme includes 60 ECTS learning and 120 ECTS research components, 180 ECTS in total.

A student obtains in-depth knowledge of the teaching methods and practice, academic writing, algorithms, issues of research project management and work on the research topic via the mandatory courses of the program.

Students are required to complete 20 ECTS in elective courses, which can be covered by passing the subjects of the specialty and related specialties.

The learning methods and components defined by the programme promotes and ensures the fulfillment of the goals set by the programme and achievement of learning outcomes. The teaching methods envisage conducting scientific research, critical analysis, critical evaluation of one's own and others' work, processing of scientific literature and presentations by a PhD student.

While performing the research component, the student is required to:

- submit two scientific publications for the defense;
- have prepared an oral presentation at an international scientific conference. The abovementioned requirement is an instrument for external evaluation and recognition of outcomes.

The Higher Education Institution ensures publicity and accessibility of programme related information.

The programme is modern and enhanced by courses such as “Modern strategies of teaching evaluating in higher education” and “Management of Research Projects”.

All academic and scientific personal, invited staff, students, graduates and employers are involved in designing the programme.

Evidences/indicators

- The programme description
- Instruction of continuous improvement of quality
- Interviews with administration and academic staff

Recommendations:**Suggestions for programme development:****Best Practices (if applicable):****In case of accredited programme, significant accomplishments and/or progress****Evaluation**

- Complies with requirements
- Substantially complies with requirements

- Partially complies with requirements
- Does not comply with requirements

2.3 Course

- Student learning outcomes of each compulsory course are in line with programme learning outcomes; Moreover, each course content and number of credits correspond to course learning outcomes;
- Teaching materials listed in syllabi are based on the core achievements in the field and ensure the achievement of intended programme learning outcomes.

Descriptive summary and analysis of compliance with standard requirements

Student learning outcomes of each compulsory course are in line with programme learning outcomes.

The content of each course corresponds to the course learning outcomes.

Student learning outcomes of each course are in line with the descriptor of the appropriate level of Doctoral degree qualification.

The number of credits allocated for each course and the ratio between contact and independent hours is logical for a Doctoral degree qualification.

Course content and the number of credits for particular subjects correspond to the achievement of the learning outcomes specified in this subject.

Compulsory literature and other reading material listed in the syllabi are modern.

The teaching material indicated in the syllabus is based on the teaching methodologies and ensures the achievement of programme learning outcomes.

Every learning outcomes of each course is assessed.

The Expert Panel has some comments regarding the educational courses:

- There are no admission prerequisites listed for the following courses, despite the fact that prior knowledge is required to understand the content: Theory of algorithms, Machine learning algorithms for pattern analysis, Machine learning based on big data systems, Mathematical modeling, Structural analysis of complex systems.
- The realisation of the course “Machine learning based on big data systems” requires large computational resources, which the university does not possess. However, during the interview the management promised that it would find computing resources from outside the university for this course.

The course "Theory of algorithms" considers both theoretical issues and the practical implementation of algorithms. It would greatly strengthen the course to include the mapping of classes of practical problems to the presented abstract methods.

Evidences/indicators

- The programme description
- Learning Course syllabi
- Map of learning outcomes
- Interviews with administration and academic staff

Recommendations:

The course descriptions should include documentation of the knowledge that students need to have before they take the course.

Suggestions for programme development:

Consider including the mapping of classes of practical problems to the presented abstract methods in the “Theory of algorithms” course.

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

2.4 The Development of practical, scientific/research/creative/performance and transferable skills

Programme ensures the development of students’ practical, scientific/research/creative/performance and transferable skills and/or their involvement in research projects, in accordance with the programme learning outcomes.

Descriptive summary and analysis of compliance with standard requirements

The programme ensures that students have an opportunity to gain practical skills and/or are involved in scientific-research projects that correspond to the level of education and programme learning outcomes.

The university has blockchain laboratory, CISCO Academy, Oracle Academy, Microsoft IT Academy, Mikrotik Academy, the teaching center UG Lemondo Trainings, the center Internet Teaching and Researches. The University is involved in international research collaborations / projects with research centers, such as JINR, J-Park (COMET Collaboration), CERN. All these centers and the lab give the student ability to obtain more practical knowledge and skills.

The programme practice component is organized and planned according to programme learning outcomes. Training in transferable skills are provided by the following required courses: Modern strategies of teaching evaluating in higher education, Management of research projects, Reference and translation of the text.

In the framework of a practice component, and/or a scientific-research project, each student is supervised by a qualified person in the field who assesses/evaluates student’s activity.

Evidences/indicators

- The programme description
- Participation in scientific projects
- Self-evaluation report
- Interview with students

Recommendations:

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

2.5 Teaching and learning methods

Program is implemented using student centered teaching and learning (SCL) methods. Teaching and learning methods correspond to the level of education, course content, student learning outcomes and ensure their achievement.

Descriptive summary and analysis of compliance with standard requirements

The programme is implemented using student-centered teaching and learning methods. Programme teaching methods are mainly based on the independent work of a PhD student with involvement in the topic of the research together with a scientific supervisor. The learning format envisages periodic meetings with the lecturers of the relevant course.

The teaching-learning methods ensure achieving the programme objectives. While performing both the learning components and the research component, the student is accustomed to presenting his / her own research from the very beginning and presenting the results in the form of a scientific discussion.

Lecture and consulting meetings are provided within the course. During lecture meetings, the student is provided with the key topics of the syllabus topic, as well as literature for independent processing.

Teaching and learning methods of each course correspond to the level of education, course content, intended learning outcomes and ensure their achievement.

Teaching and learning methods are flexible and take student's individual background and requirements into consideration. If necessary, an individual programme is created and utilised in accordance with the interest and academic readiness of the student.

In case there are foreign students involved in the programme, academic, scientific and invited staff take their cultural and/or other needs into account while establishing teaching and learning, and assessment methods.

The university has a clear policy regarding assessment of students as stated in its Educational Process Regulations: "The University is obligated to ensure a fair and unbiased assessment of the student's knowledge, for which it develops appropriate procedures." The Expert Panel is satisfied that this policy is fully materialised.

General evaluation criteria, which are described in the programme description document, are tailored to each course and explained in exhaustive detail in that course's syllabus. For each assessment element, the criteria corresponding to different levels of achievement are listed clearly. It is the Expert Team's opinion that this is as transparent as it

could possibly be. The faculty and teaching staff should be commended for presenting the assessment system in a very transparent way.

During the interviews, it became evident that these criteria are transparent to students and are presented and explained to them at the first teaching week of each course.

The teaching staff provides feedback to students after each assignment. Students reported that the teaching staff is easily accessible to discuss any questions they might have about their grades and provide clarifications. According to teaching staff, students are most of the time satisfied with the feedback they receive from their teachers, and the students interviewed shared this view.

In case a student's complaint is not resolved after informal contact with the teacher of the course, he/she can follow a formal procedure defined in Regulations for Educational Process: Discuss the exam paper with the lecturer and receive feedback and object to examination results after the grades are submitted to SIS (Student Information System). Students are fully aware of their rights to do so, although no instances of exercising them was reported by the interviewed students.

Personal fixed consultation hours are available for all members of the teaching staff. Students also participate in the surveys where they can express their opinion on the evaluation criteria and methods. The information is passed to the teaching staff and the programme manager.

Evidences/indicators

- The programme description
- Learning Course syllabi
- Teaching methods manual
- Interviews with administration and academic staff
- Self-evaluation report

- Interview with students

Recommendations:

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

2.6. Student Evaluation

Student evaluation is conducted in accordance with established procedures. It is transparent and complies with existing legislation.

Descriptive summary and analysis of compliance with standard requirements

Students are evaluated according to the procedures established by legislation. Evaluation is transparent and described in each particular syllabus.

Evaluation results are analysed and the results are utilized for the improvement of the teaching process.

Evaluation forms, components and methods are fair, published and known to students in advance.

The evaluation has a dual function; on the one hand, it is used to measure student achievement and on the other, it is used as a means of improving the results achieved.

For this purpose, the university ensures the mechanism for improvement of students' learning outcomes through professors' feedback on students' work. The supervisor periodically assesses the doctoral student's progress. That means an individual review of the results and instructions for the purpose of improving the existing deficiencies in the future.

The evaluation criteria are to monitor students' achievement. Exceeding the threshold indicates the achievement of the learning outcomes.

The evaluation of the research component is performed during the defense of the doctoral dissertation.

If possible, an international evaluator should be involved in evaluating the PhD dissertation, for the sake of maintaining high standards.

The dissertation thesis defence is conducted according to the HEI's dissertation evaluation and defence procedures with the participation of the defence commission. It is a public event.

Evidences/indicators

- The programme description
- Learning Course syllabi
- Provisions on Doctoral and Master Studies
- Interviews with administration and academic staff
- Self-evaluation report

- Interview with students

Recommendations:**Suggestions for programme development:**

Consider involving an international reviewer for the PhD dissertation.

Best Practices (if applicable):**In case of accredited programme, significant accomplishments and/or progress****Evaluation**

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

Programme's Compliance with Standard

Standard	Complies with Requirements	Substantially complies with requirements	Partially Complies with Requirements	Does not Comply with Requirements
Teaching methodology and organization, adequate evaluation of programme mastering		X		

3. Student achievements and individual work with them

HEI creates student-centered environment by providing students with relevant services; programme staff ensures students' familiarity with the named services, organizes various events and fosters students' involvement in local and/or international projects.

3.1. Student support services
Students receive appropriate consultations and support regarding the planning of learning process, improvement of academic achievement, employment and professional development.
<p>Descriptive summary and analysis of compliance with standard requirements</p> <p>Each student periodically meets for consultation with the lecturers of the courses he/she is taking. The Advisory Board meets once a semester to evaluate and plan each PhD student's teaching and research activities. At these meetings, the PhD student receives advice on his/her further development. The School, together with the IT and Financial Departments, provides assistance to students in administrative, financial and technical questions.</p> <p>Students have the ability to get information about projects and events using the schools' online system.</p> <p>The department provides funding for students to attend conferences and for other research costs. Supervisors are in charge of monitoring their student's conference attendance. Funding is half of the tuition fee, that is 1500GEL per year at this moment. Funding covers travel and accommodation. Besides that, it can be used to purchase new books and other necessary items for research purposes. They also have the ability to participate in international exchange programmes.</p> <p>Academic and scientific staff workload includes hours for advising students.</p>
<p>Evidences/indicators</p> <ul style="list-style-type: none"> ● Interviews with head of programme, students and alumnus ● Documentation confirming international cooperation ● Self-evaluation report
Recommendations:
Suggestions for programme development:
Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

3.2. Master's and Doctoral Student supervision

Master's and Doctoral students have qualified thesis supervisors.

Descriptive summary and analysis of compliance with standard requirements

Students choose a topic from the list which is announced in advance by the school. The topics announced are the ones which are currently the most interesting for the school and academic staff. Members of academic staff are responsible for their topics and supervising students during their research work. If a topic is complex and requires experience from another field, the school allows students to have a co-supervisor.

Each supervisor is in constant communication with their students. Upon a student's request, they can plan consultation regarding his/her research topic. The research process is led by the supervisor; as an advisor, he/she points in the right direction and helps to publish papers in peer-reviewed research journals.

Upon the review of past PhD theses, the content was clear, understandable and met technical requirements.

Students can meet their supervisor as frequently as they require. Most communication is face-to-face but meetings can take place remotely. Each topic is in the field of the supervisor's interest and they are involved in the research.

The Expert Panel found no evidence that the HEI has a document defining the rights and obligations of the supervisor and the supervision process.

Evidences/indicators

- Interviews with head of programme, members of the Quality Assurance Office, students and alumnus
- Self-evaluation report

Recommendations:

A document defining the rights and obligations of the supervisor and the supervision process should be produced.

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

Programme's Compliance with Standard

Standard	Complies with Requirements	Substantially complies with requirements	Partially Complies with Requirements	Does not Comply with Requirements
Student achievements and individual work with them	X			

4. Providing teaching resources

Programme human, material, information and financial resources ensure programme sustainability, its effective and efficient functioning, and achievement of intended objectives.

4.1 Human Resources

- Programme staff consists of qualified people who have necessary competences in order to help students achieve programme learning outcomes;
- The number and workload of programme academic/scientific and invited staff ensures the sustainable running of the educational process and also, proper execution of their research/creative/performance activities and other assigned duties. Balance between academic and invited staff ensures programme sustainability;
- The Head of the Programme possesses necessary knowledge and experience required for programme elaboration. He/she is personally involved in programme implementation;
- Programme students are provided with an adequate number of administrative and support staff of appropriate competence.

Descriptive summary and analysis of compliance with standard requirements

There are 5 professors and 3 associate professors involved in the programme. 6 of them are field-related (coming from informatics, mathematics and physics). Only 3 of them are active researchers (having recent publications) and only 2 out of these 3 are field-related. For the other professors, no publication information were provided since 2016. In total they have 2 running projects and only one is a research project (the other one is an Erasmus+ exchange project). These facts are strange, since professors' contracts include research obligations, and part of their salary is given for research duties. According to these contracts, they must have at most 10 teaching hours per week, with the rest devoted to research.

Nevertheless, the programme coordinators have sufficient knowledge and experience for programme elaboration.

Programme students are provided adequate administrative support by the school's staff.

Evidences/indicators

- Personnel documentation
- Self-evaluation report
- Interviews with administration and academic staff

Recommendations:

Involve more field-related active researchers in the programme.

Suggestions for programme development:

Encourage academic staff to submit fundamental and applied research proposals to national and international funding bodies.

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

4.2 Professional development of academic, scientific and invited staff

- HEI conducts the evaluation of programme academic, scientific and invited staff and analysis evaluation results on a regular basis;
- HEI fosters professional development of the academic, scientific and invited staff. Moreover, it fosters their scientific and research work.

Descriptive summary and analysis of compliance with standard requirements

The university Quality Assurance Office collects feedback from students about academic and invited staff every semester; based on this, their teaching performance is evaluated. Every year each member of academic staff submits a self-evaluation report on their scientific work. After analysing the feedback results, academic and invited staff are offered training, if needed.

The university funds doctoral students to participate in conferences and scientific events. Doctoral students can request up to half of the tuition fee for this reason. The administration encourages academic staff to participate in

various academic exchange programs. There is also an addition to the salary for publications in journals or conferences with impact factor.

Evidences/indicators

- Interviews with administration, quality assurance and academic staff
- Self-evaluation report

Recommendations:

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

4.3. Material Resources

Programme is provided by necessary infrastructure and technical equipment required for achieving programme learning outcomes.

Descriptive summary and analysis of compliance with standard requirements

The university provides all the necessary infrastructure and technical equipment for the research (computer labs). The programme under evaluation does not have any special requirements - there is no need for specific equipment or software - but the administration is ready to discuss and purchase equipment or software in future if required. The library has all the main literature specified in the course syllabi. Students and academic staff have access to JSTOR, ScienceDirect and the Scopus databases.

Evidences/indicators

- A tour of the institution facilities – library, classrooms, offices, etc.

Recommendations:

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

4.4. Programme/faculty/school budget and programme financial sustainability

The allocation of financial resources stipulated in programme/faculty/school budget is economically feasible and corresponds to programme needs.

Descriptive summary and analysis of compliance with standard requirements

The presented programme budget includes only study fees as income and funding for students to participate in conferences or scientific events as expenses. As the administration explained, there is a school budget to cover all the common expenses of the study programmes (not calculated separately for each one). The administration explained that they would need approximately 10 students per year for the programme to be self-sufficient. Currently, they have only 5 PhD students and only 2 of those are active students (3 students are on suspended status, because they need more time to do research and finish their thesis), so this PhD program is subsidised by the Bachelor and Masters programmes.

A compulsory course on the programme is “Management of research projects”, which includes writing of project proposals. After this course, students will have enough knowledge to submit high quality project proposals for PhD grants to SRNSFG.

Evidences/indicators

- Programme budget
- Interview with administration, academic staff and doctoral students
- Self-evaluation report

Recommendations:

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements

- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

Programme's Compliance with Standard

Standard	Complies with Requirements	Substantially complies with requirements	Partially Complies with Requirements	Does not Comply with Requirements
Providing teaching resources	X			

5. Teaching quality enhancement opportunities

In order to enhance teaching quality, programme utilizes internal and external quality assurance services and also periodically conducts programme monitoring and programme review. Relevant data is collected, analysed and utilized for informed decision making and programme development on a regular basis.

5.1 Internal quality

Programme staff collaborates with internal quality assurance service(s) available at the higher education institution when planning the process of programme quality assurance, creating assessment instruments, and analysing assessment results. Programme staff utilizes quality assurance results for programme improvement.

Descriptive summary and analysis of compliance with standard requirements

The University of Georgia operates a mechanism for the evaluation of the quality of its education programmes, under which consistent and regular evaluation is carried out. The purpose of the evaluation is to ensure the success of the learning outcomes, the success and continuous quality improvement of the programmes, and the graduates' competitiveness in the employment market.

The internal quality assurance mechanisms are carried out with the collaboration of programme staff, and they use the results of the evaluation for programme improvement.

Internal quality assurance mechanisms involve measurement of student achievements, on the level of individual courses and on the programme as a whole, as well as regular requests for student feedback, using qualitative and quantitative techniques.

Members of the Quality Assurance Office indicate that there is 100% student response to surveys, because of the small numbers of students. Students interviewed confirmed that they are asked for and provide feedback.

Internal quality assurance mechanisms also include reports from mentors of educational courses on the challenges identified in the process of learning for the student, teaching methods, difficulty of the course, workload, and comprehension of the material.

The self-evaluation report for the doctoral programme was prepared by a group which included all of the academic staff involved in the programme, the School Director, and Quality Assurance Office staff.

Evidences/indicators

- Interviews with members of the Quality Assurance Office and students
- Self-evaluation report

Recommendations:

Suggestions for programme development:

Best Practices (if applicable):

In case of accredited programme, significant accomplishments and/or progress

Evaluation

- Complies with requirements
- Substantially complies with requirements
- Partially complies with requirements
- Does not comply with requirements

5.2 External quality

Programme utilizes the results of external quality assurance on a regular basis.

Descriptive summary and analysis of compliance with standard requirements

One recommendation of the 2014 accreditation of the doctoral programme in Mathematics, Physics and Computer Science was to split it into separate programmes in the three disciplines. The new doctoral programme is a result of implementing that recommendation.

Another recommendation from the previous accreditation report was to clarify the application criteria. This has been done. This accreditation report suggests a further refinement, see Section 2.1.

Indirect evaluations of the programme are conducted periodically as a source of feedback from the perspectives of parties that are interested in the programme. These evaluations include information on alumni employment, feedback from alumni, surveys of employers, feedback from academic and invited staff, and a comparison with similar programmes elsewhere.

<p>Evidences/indicators</p> <ul style="list-style-type: none"> • 2014 accreditation report for the doctoral programme in Mathematics, Physics and Computer Science • Interview with head of programme • Self-evaluation report
<p>Recommendations:</p>
<p>Suggestions for programme development:</p>
<p>Best Practices (if applicable):</p>
<p>In case of accredited programme, significant accomplishments and/or progress</p>
<p>Evaluation</p> <p><input checked="" type="checkbox"/> Complies with requirements</p> <p><input type="checkbox"/> Substantially complies with requirements</p> <p><input type="checkbox"/> Partially complies with requirements</p> <p><input type="checkbox"/> Does not comply with requirements</p>

<p>5.3. Programme monitoring and periodic review</p>
<p>Programme monitoring and periodic review is conducted with the involvement of academic, scientific, invited, administrative staff, students, graduates, employers and other stakeholders through systematically collecting and analysing information. Assessment results are utilized for programme improvement.</p>
<p>Descriptive summary and analysis of compliance with standard requirements</p> <p>The mechanisms for evaluation of the quality of the programme outlined in Section 5.1 of this report, and indirect evaluations mentioned in Section 5.2, are designed for and are appropriate for use in the development of the programme in the future, in order to sustain and improve its quality.</p> <p>The internal quality assurance mechanisms outlined in Section 5.1 obtain feedback from students on the programme and programme academic staff, while the indirect evaluations outlined in Section 5.2 obtain feedback from alumni, employers, academic staff. In this way, all stakeholders are reached.</p> <p>The scientific publications produced by doctoral students will be used to benchmark the quality of the programme against national and international doctoral programmes.</p>
<p>Evidences/indicators</p> <ul style="list-style-type: none"> • Interview with members of the Quality Assurance Office • Self-evaluation report
<p>Recommendations:</p>

Suggestions for programme development:
Best Practices (if applicable):
In case of accredited programme, significant accomplishments and/or progress
Evaluation <input checked="" type="checkbox"/> Complies with requirements <input type="checkbox"/> Substantially complies with requirements <input type="checkbox"/> Partially complies with requirements <input type="checkbox"/> Does not comply with requirements

Programme's Compliance with Standard

Standard	Complies with Requirements	Substantially complies with requirements	Partially Complies with Requirements	Does not Comply with Requirements
Teaching quality enhancement opportunities	X			

Enclosed Documentation (If Applicable)

HEI's Name: The University of Georgia

Higher Education Programme Name: Doctoral Programme in Computer Science

Number of Pages of the Report: 25

Programme's Compliance with the Standard

Standard	Complies with Requirements	Substantially complies with requirements	Partially Complies with Requirements	Does not Comply with Requirements
1. Programme objectives are clearly defined and achievable; they are consistent with the mission of the HEI and take into consideration labour market demands	X			
2. Teaching methodology and organization, adequate evaluation of programme mastering		X		
3. Student achievements and individual work with them	X			
4. Providing teaching resources	X			
5. Teaching quality enhancement opportunities	X			

Expert Panel Chair's

Name, last name, signature

Donald Sannella



Expert Panel Members'

Name, last name, signature

Mikheil Rukhaia



Name, last name, signature

Zurab Bosikashvili



A handwritten signature in blue ink, appearing to be 'Merabi Kutalia', written in a cursive style.

Name, last name, signature Merabi Kutalia