

## Appendix 2

Educational and research components of doctoral programs and the procedure for their evaluation (changed / approved for doctoral programs from 2020)

(As amended by the decision of the Academic Council dated 20.08.2021 No. 01-05-04/135)

### 1. Purpose

1.1. This rule regulates the procedure for using the educational and research components of doctoral programs at the faculties of Georgian Technical University in accordance with the Law of Georgia "On Higher Education", "Regulations on the Legal Entity of Public Law – Georgian Technical University", approved by Order No. 133/N of the Minister of Education and Science of Georgia on September 9, 2013. "On the procedure for accruing loans for higher education programs" of the Minister of Education and Science of Georgia, Order No. 3 of January 5, 2007 "Regulations on Doctoral Studies of Georgian Technical University", approved by Resolution No. 01-05-04 / 44 of the Academic Council of the Georgian Technical University dated March 9, 2018, and In accordance with the "Regulations on the University Dissertation Council of Georgian Technical University ", approved by the Resolution No. 2324 of the Academic Council of Georgian Technical University of February 27, 2017.

1.2. The main purpose of the rule is to facilitate the doctoral student's work on the doctoral program, efficient time planning, rational use of academic resources, optimization of academic and research resources, availability of information on assessment methods and criteria.

### 2. Learning component of the educational program

#### 1. Purpose, elements and method of evaluation of the learning component

2.1.1. The purpose of the learning component of the educational program of doctoral studies is the development of a doctoral student in his/her field and in methodological competencies. This helps the doctoral student in completing the dissertation, in further pedagogical and scientific activities. The learning component of the doctoral program should not exceed 60 credits. (20.08.2021 No. 01-05-04/135)

2.1.2. The learning component of the educational program of doctoral studies, their sequence and the amount of credits are determined individually for each doctoral program. (20.08.2021 No. 01-05-04/135)

2.1.3. The learning courses provided for by the educational program of doctoral studies may include a series of lectures, group work, practical, laboratory work and other workload on a student.

2.1.4. Forms of assessment, criteria and their scales, based on the specifics of the learning course and learning objectives, are determined by the curriculum of the learning course (Syllabus) and are available to doctoral students. (20.08.2021 No. 01-05-04/135)

2.1.5. During the teaching of the course defined by the program, the student's progress is assessed in accordance with the assessment system approved by the order of the Minister of Education and Science of Georgia No. 3 of January 5, 2007 "On the rules for calculating credits for higher education programs."

2.1.6. Acquisition of issues (achievement of learning outcomes) defined by the educational program (syllabus) of the educational program is assessed according to 100-point system. In case of receiving at

least 30 points in the intermediate assessment, the doctoral candidate is allowed to take the final exam. A doctoral student is considered to have passed the course if, according to the results of intermediate assessments and the final exam (minimum 21 points), he scores at least 51 points. (20.08.2021 No. 01-05-04/135)

2.1.7. A positive assessment of the learning course determined by the educational program of doctoral studies is considered to be:

- (A) excellent - 91-100 points;
- (B) very good - 81-90 points;
- (C) good - 71-80 points;
- (D) satisfactory - 61-70 points;
- (E) Enough - 51-60 points.

2.1.8. A negative assessment of the learning course defined by the program is:

- (FX) Fail - 41-50 points, which means the student needs more work to pass and after independent work is allowed to take one additional exam;
- (F) Unsatisfactory - 40 points or less, which means that the work done by the student is insufficient and he/she has to learn the subject from the beginning.

### 3. Research component of the educational program

#### 3.1. Purpose of the research component

The purpose of the research component of the doctoral educational program is to train highly qualified scientific personnel in accordance with the requirements of modern research standards. (20.08.2021 No. 01-05-04/135)

#### 3.2. Elements / stages of the research component

Mandatory elements/stages of the research component of the educational program are:

- project/prospect;
- colloquium 1;
- colloquium 2;
- colloquium 3;
- preliminary defense of the dissertation;
- Completion and defense of the dissertation.

In exceptional cases, taking into account the specifics of doctoral studies, it is possible to establish the composition of the study components that is different from the specified one. Each stage of the scientific component is a prerequisite for the next stage. (20.08.2021 No. 01-05-04/135)

3.3. Doctoral student is allowed to pass the final stage of the scientific component after at least 3 years of study in the educational program. (20.08.2021 No. 01-05-04/135)

### 3.4. Project/Prospectus of Dissertation Research

3.4.1. In the second semester of the first year of study, the doctoral student prepares a research project/prospectus.

3.4.2. A detailed plan for the dissertation research / prospectus (list of issues to be resolved) is written together with the supervisor.

3.4.3. Work on a scientific project/prospectus is carried out in the format of consultations with the supervisor of a doctoral candidate (including the "online" mode) and independent work of the student.

3.4.4. Structure of the research/prospectus of the dissertation:

- Introduction (general description, scientific novelty, relevance, goals and theoretical/practical significance);
- review of the scientific literature (history of the study of the issue, the state of the problem under study in modern science, why the problem is actual, at what stage is the doctoral student's research from the viewpoint of investigating selected sources);
- Research methodology;
- main research questions (what problems does the doctoral candidate set for himself);
- expected results of the research (to what extent the doctoral student contributes to the development of the field);
- Proposed dissertation schedule (research plan);
- Probable structure of the dissertation.

3.4.5. The research project/prospectus includes the doctoral student's processing of the scientific literature, the main bibliography required for the research, and the research history of the issue. The doctoral student should briefly talk about what has been done in this direction and what is being done at the present time (who is working in what direction). The prospectus should show the novelty and relevance of the research topic, a logical explanation and justification for the scientific and theoretical/practical value of the chosen topic.

3.4.6. The doctoral student should have an idea about the planned research and analysis methods. The preliminary opinion/expectation about the expected results of the research should be substantiated by logical reasoning; should establish the research problems, methodology and main research questions; A research plan and an approximate structure of the dissertation should be presented.

3.4.7. The length of the research project/prospectus must be at least 15 pages, excluding annexes. All pages must be numbered consecutively. It is not allowed to leave a free space or a page. The text should be written on A4 paper (297 × 210 mm) with a density of 80 g/m<sup>2</sup>, font - Sylfaen, size 12. The minimum font size for pagination and footnotes should be 10. For headings, you can use a larger font size. chapters and subchapters. The interval of the main text of the work is 1.5. Text should be printed on one page only. On the left side of the page, margins 30 mm wide should be left, on the other sides - 20 mm each. The text should be printed on a laser printer or with a quality close to it.

3.4.8. As a rule, at the end of the second semester of study, the doctoral student presents a research project/prospectus at a meeting of the relevant academic department. An extract of the minutes of the

meeting (with recommendations) and an audio-video recording of the speech on electronic media (CD or DVD) are kept in the personal file of the doctoral student. In case of a positive recommendation, the doctoral student continues his research. (20.08.2021 No. 01-05-04/135)

### 3.5. Colloquium

3.5.1. Based on theoretical/experimental research, the doctoral student must prepare three colloquia during the third, fourth and fifth semesters of study. The colloquium should reflect the results of research conducted by the doctoral candidate.

3.5.2. The main goal of the colloquium is to systematize the knowledge of a doctoral student, present the work done by him/her, reveal the creative thinking of a doctoral student, and develop the skills necessary to communicate with the scientific community.

3.5.3. The colloquium should reflect the substantiated results of theoretical/experimental research. At the colloquium, the doctoral student must demonstrate the scope and depth of the research on a specific problem (the quality of research), draw conclusions based on the results of the study, and determine the future direction of work; present the obtained and expected results; analyze the works prepared for publication or published.

3.5.4. The volume of the first and second colloquia should be at least 20 pages without appendices (each), and the third should not be less than 40 pages. All pages should be sequentially numbered, it is not allowed to leave a free space or a page. The text should be written on A4 paper (297 × 210 mm) with a density of 80 g/m<sup>2</sup>, font - Sylfaen, size 12. The minimum font size for pagination and footnotes should be 10. For headings, you can use a larger font size. chapters and subchapters. The interval of the main text of the article is 1.5. Text should be printed on one page only. On the left side of the page, margins 30 mm wide should be left, on the other sides - 20 mm each. The text should be printed on a laser printer or with a quality close to it. The article should contain a list of used literature.

3.5.5. The work of a doctoral candidate at the colloquium is mainly carried out in the format of consultations with the supervisor (including the "online" mode) and the student's independent work.

3.5.6. The results obtained at these stages of the study will be presented to the academic department. The dean, on the recommendation of the head of the department, creates a commission of 5-7 people, which should include the teaching staff. The composition of the commission is approved by order of the department. The supervisor of the doctoral student must also be present at the work of the commission. The doctoral student presents the results obtained at this stage of the study to the commission (20-25 minutes).

3.5.7. In case of a positive recommendation of each commission of the colloquium, the doctoral student continues his research.

3.5.8. In case of a negative recommendation of the colloquium, the doctoral student resubmits the dissertation according to the current rule.

3.5.9. A prerequisite for colloquium-1 is a prospectus project;

3.5.10. Colloquium 1 is a prerequisite for Colloquium 2;

3.5.11. Colloquium 2 is a prerequisite for Colloquium 3.

3.5.12. Colloquium-3 is a prerequisite for "fulfilling and defending a dissertation";

3.5.13. The course of each colloquium is documented in a protocol. The presentation of the colloquium is recorded on an electronic medium (CD) and kept in the personal file of the doctoral candidate.

### 3.6. Preliminary defense of the dissertation

3.6.1. A prerequisite for submitting a dissertation for defense is a preliminary defense of the dissertation, usually on the eighth/ninth week of the 6th semester of study at an extended meeting of the department. If necessary, it is possible to invite qualified specialists in the relevant field. (20.08.2021 No. 01-05-04/135)

3.6.2. The doctoral student will report at the session the key points of the work and the results obtained. The relevance, scientific novelty and practical value of the dissertation work are stated. The problem arised in the dissertation and ways to solve it are presented. The doctoral student answers the questions of the session participants. During the preliminary defense, the doctoral student can use any audiovisual materials. The results of the preliminary defense are documented in a protocol, which is signed by the head of the department and the members present. The course of preliminary defense is recorded on an electronic medium (CD), which is stored in the student's personal file.

If the doctoral student is not in Georgia or for any other justified reason, by the decision of the rector, the preliminary defense can be held online.

### 3.7. Defense of the thesis

3.7.1 The dissertation defense (hereinafter referred to as defense) is carried out publicly, at a meeting of the dissertation council.

3.7.2. The research component is assessed once, in the same or next semester in which the student completes the work. A student who has not taken an assessment within the current semester session is allowed to take it in the next semester, for which he must contact the rector before the end of the exams. (20.08.2021 No. 01-05-04/135)

3.7.3. The right to speak at the defense of the dissertation is granted to a doctoral student who has completed all the components provided by the educational program, who has made a presentation of the dissertation at an extended meeting of the department (preliminary defense), who has submitted the necessary documentation to the dissertation council (articles 3 and 4 of paragraph 8 of the Regulations of the Council of GTU), copies of completed dissertations and abstracts, signed by the supervisor.

3.7.4. One of the official reviewers who submitted a positive opinion may not be present at the defense for a justified reason. In such a case, the review should be read out in full during the defense. If none of the reviewers is present at the defense, the defense will not take place.

3.7.5. If the doctoral student fails to appear at the defense of the dissertation for a good reason, the quorum of the council is not observed, or the presence of less than 2/3 of the members in the direction/specialty corresponding to the topic of the dissertation at the meeting, or the defense does not take place for another reason beyond the control of the doctoral student, the defense is appointed by the council in the next acceptable time.

3.7.6. The Council operates in Georgian. In case of a foreign-language doctoral program, the defense will be conducted in the language of the doctoral program (if necessary, with the help of an interpreter).

3.7.7. The chairman opens the council meeting. He confirms the presence of a quorum and brings the agenda of the meeting to the attention of those present.

3.7.8. The maximum duration of the reports of the doctoral candidate and official reviewers, as well as the speeches of the members of the Council and other persons, is determined by the Council at the proposal of the chairman.

3.7.9. The secretary of the meeting announces the identity of the doctoral candidate, his brief biographical data, the results of the implementation of educational and research components by the doctoral student and preliminary defense, the topic of the dissertation and the names of the official reviewers, informs the council members about the documents submitted by the doctoral student and the procedure for defending the dissertation.

3.7.10. At the suggestion of the chairman of the session, the doctoral candidate clearly formulates the scientific novelty, the key points of the work, the results obtained and conclusions within the time limits stipulated by the regulations.

3.7.11. The doctoral candidate answers the questions asked by the members of the council and those present, after which the chairman brings to the attention of the council reviews of the dissertation (if any). All criticisms must be read in full. The doctoral student is obliged to respond to all comments. Then the discussion between official reviewers and the doctoral student begins, after which the supervisor/co-supervisors report about personal characteristics of the doctoral student. Both members of the Council and the public present can participate in the discussion.

3.7.12. While defending a dissertation, the candidate may use visible materials: posters, a video projector and other technical means.

3.7.13 The progress of the dissertation defense is recorded by audio/video technical means and is stored on electronic media (CD) in the doctoral student's personal file.

### 3.8 Grading

3.8.1. The dissertation submitted by the doctoral student is evaluated immediately after the defense by each member of the council by secret ballot in accordance with the evaluation criteria (Appendix 1) using an evaluation bulletin of the established form (Appendix 2). To implement this procedure, at the suggestion of the chairman of the meeting, by open voting the council elects from its members an evaluation counting commission consisting of 3 members, which is responsible for maintaining the confidentiality of the procedure.

3.8.2. The Evaluation Counting Commission elects a chairman from its members.

3.8.3. Before starting the procedure, the secretary of the dissertation council informs the members of the council about the specified procedure and the procedure for filling out the evaluation bulletin.

3.8.4. Members of the Council must participate in the procedure in person. It is not allowed to transfer the right of evaluation to another person.

3.8.5. Based on the assessment of the members of the council, the arithmetic mean of the points issued by them will be determined and the final assessment will be issued in accordance with articles 3.8.6, and a protocol will be drawn up (Appendix 3).

3.8.6. Five positive and two negative marks are used for a one-time assessment of the thesis.

Positive gradings are:

- a) Perfect (*summa cum laude*) - excellent work;
- b) very good (*magna cum laude*) - result which is more than required;
- c) good (*cum laude*) - result which fully complies with the requirements;
- d) Fair ( *bene*) - result which fully complies with the requirements in spite of some flaws;
- e) Satisfactory (*rite*) – result which complies with the requirements in spite of some flaws;

Negative scores are:

- a) Insufficient (*insufficenter*) - result which does not comply with the requirement because of significant flaws;
- b) totally unsatisfactory (*sub omni canone*) - result which does not comply with any requirements.

3.8.7. These marks were obtained according to the criteria established by the members of the university, the corresponding dissertation council, according to the arithmetic mean of secretly assigned points (0-100), namely:

- The grade "perfect" is given if the doctoral student scores 91-100 points;
- The grade "very good" is given if the doctoral student scores 81-90 points;
- The grade "good" is given if a doctoral student scores 71-80 points;
- The grade "fair" is given if the doctoral student scores 61-70 points;
- The grade "satisfactory" is given if the doctoral student scores 51-60 points;
- Assessment is „unsatisfactory” if the Ph.D. student gets 41-50 points.
- Assessment is „completely unsatisfactory” if Ph.D. student gets 40 or less points.

3.8.8. In case of positive assessment as stipulated in the item 6.6 „-a-“ of the present article the Ph.D. student is conferred the Academic degree of Doctor.

3.8.9. In case of unsatisfactory assessment, the Ph.D. student has right to present revised thesis for one year. After unsatisfactory assessment the Ph.D. student must apply the rector of the university to prolong his/her status, otherwise the status will be suspended. If he/she has already used the prolongation of the Semesters twice; the status will stop with the right of mobility.

3.8.10. In case the student gets „completely unsatisfactory” to defend his/her thesis during the second presentation of it, by reevaluating unsatisfactory assessment, his/her status is stopped with the right of mobility during one year. Assessment or „unsatisfactory” during the second defence of the revised thesis, the student loses the right to present the same thesis and his/her status is stopped, though he/she has right to use mobility during one year.

3.8.11. The head of the assessment counting board announces the results of the procedure. In case of the positive decision by the  $\frac{3}{4}$  of the board members the decision is confirmed by open voting. The minutes and the bulletins are kept in the dissertation board archives together with the Ph.D. students documents.

3.8.12. In case the minutes of the assessment counting board fails to be confirmed the assessment procedure must be repeated, or postponed till the next work day. The assessment counting board prepares new bulletins and the board performs the appropriate procedure again, according to the abovementioned regulation.

3.8.13. Having confirmed the minutes of the assessment counting board, the head of the board announces the decision to the student and the audience attending the defence.

**Appendix 1**  
**Assessment Regulations of the Educational**  
**And Research components of the Doctoral Program**

**Thesis assessment criteria**

**1. Topicality of the thesis theme – assessment up to 4 points (max 15 points. Scaled point =3,75xM)**

4points	The theme of the thesis is topical and is oriented on the development of the researched field.
3points	The theme of the thesis is topical but less oriented on the development of the researched field.
2points	The theme of the thesis is topical and is conditioned by, the potential probability of the developing of the researched field of science.
1points	The theme of the thesis is obsolete and less topical
0points	The theme of the thesis is not topical, consequently

**2. Novelty of the Thesis – assessment upto 4 points (max 18 scaled point =4,5xM)**

4points	The thesis has scientific novelty distinctly researched and presented. The contribution of the Ph.D. student is undoubtedly obvious.
3points	The thesis has scientific novelty, but is not distinctly researched and presented. The Ph.D. student shows his contribution to the research quite well.
2points	The theme of the thesis has scientific novelty, but lacks cogency. The Ph.D. students can



	hardly indicate his/her contribution to the research of the problem
1points	The novelty indicated in the thesis no is not proved by the presented results of the research. The Ph.D. student fails to show his/her contribution to the research of the problem.
0points	The thesis has no novelty at all.

**3. The Theoretical and practical Value of the chosen Theme – assessment up to 4 points (max.18 points. Scaled point =4,5xM)**

4points	The Thesis has important theoretical and practical value.
3 points	The Thesis has enough important theoretical and practical value.
2points	The Thesis has less important and theoretical and practical value.
1 points	The Thesis has negligible theoretical and practical value.
0points	The thesis has neither theoretical nor practical value.

**4. Promotion of the problem and its solution set in the thesis – assessment up to 4 points (max. 25 points) scaled point =6,25xM)**

4points	The judgment concerning the problem studied in the thesis is perfect and persuasive. The professional terminology is appropriately used. The information about the theme is deep, revealing the knowledge of the issue profoundly. The resolution of the problem is complete.
3points	The judgement concerning the problem posed in the thesis is good level. The professional terminology is used well enough. The Ph.D. student represents. The content of the theme, but lack persuasibility. The deviation of the posed more or less given.
2points	The judgement concerning the posed problem is at satisfactory level, though the solution of the problem is not complete. The professional terminology is satisfactory.
1points	The judgement concerning the posed problem has considerable deficiencies
0points	The judgment is not relevant. Problem is not represented completely

**5. Answers to the Questions – assessment up to 4 points (max 18 points. Scaled point =4,5xM)**

4points	The answers to the questions are profound, revealing the deep knowledge of the issue.
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3 points	The answers to the questions is at good level, but lacks persuasibility.
2 points	The answers are satisfactory, though incomplete
1 points	The answers are incomplete and not persuasive.
0 points	Answers to the questions are irrelevant.

**6. Visual Presentation –Visual Materials Presentation– assessment up to 4 points (max. 6 points. scaled point =1,5xM)**

4 points	<b>Visual material is represented profoundly</b>
3 points	Visual material is represented well, quite comprehensively
2 points	Visual material is represented with negligible faults but satisfactorily
1 points	Visual material is represented with many faults
0 points	Visual material is represented unsatisfactorily and irrelevantly

**Appendix 2**

**Assessment Bulletin Form**

Assessment bulletin form is A5 sheet (210×148mm), 80 gr/m<sup>2</sup> density paper, the first page of which includes a text: Assessment bulletin, title of the dissertation board, name and surname of the Ph.D. student, date, as well as assessment system and points.

The second page includes assessment criteria, allocated points received by the Ph.D. student.

The form of the first page of assessment

**Assessment Bulletin**

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Dissertation board

Ph.D. student:

name

surname

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Date of defence

<b>Excellent</b>	100	99	98	97	96	95	94	93	92	91	<b>Positive assessment</b>
<b>Very good</b>	90	89	88	87	86	85	84	83	82	81	
<b>good</b>	80	79	78	77	76	75	74	73	72	71	
<b>Average</b>	70	69	68	67	66	65	64	63	62	61	
<b>Satisfactory</b>	60	59	58	57	56	55	54	53	52	51	
<b>Unsatisfactory</b>	50	49	48	47	46	45	44	43	42	41	<b>Negative assessment</b>
<b>Completely unsatisfactory</b>	40	39	38	37	36	35	34	33	32	31	
	30	29	28	27	26	25	24	23	22	21	
	20	19	18	17	16	15	14	13	12	11	
	10	9	8	7	6	5	4	3	2	1	

Please, circle the assessed points

Form of the Assessment Bulletin Second page

№	Criteria of the dissertation assessment	Max.points	Received points									
			1	2	3	4	5	6	7	8	9	10
1	Topicality of the Dissertation theme	15	1	2	3	4	5	6	7	8	9	10
			11	12	13	14	15					
2	Novelty of the thesis	18	1	2	3	4	5	6	7	8	9	10
			11	12	13	14	15	16	17	18		
3	Theoretical and practical values of the thesis	18	1	2	3	4	5	6	7	8	9	10
			11	12	13	14	15	16	17	18		
4	Representation of the problem posed in the thesis and its solution	25	1	2	3	4	5	6	7	8	9	10
			11	12	13	14	15	16	17	18	19	20
			21	22	23	24	25					
5	Answers to the questions	18	1	2	3	4	5	6	7	8	9	10
			11	12	13	14	15	16	17	18		
6	Visual representation of the material	6	1	2	3	4	5	6				

Please, circle the points of criteria respectively



საქართველოს ტექნიკური უნივერსიტეტი  
GEORGIAN TECHNICAL UNIVERSITY

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Dissertation Board of the University

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Doctoral program

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**Minutes of the assessment counting commission №**

- ❖ Fill in clearly
- ❖ Form is typed on one sheet
- ❖ Max. assessment – 100 points

Ph.D.students name, surname:	
Date of defence:	
Supervisor:	

Final assessment \_\_\_\_\_

№	Commission members	signatures
1.		
2.		
3.		