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Rector

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Chairman of the Convent

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\_\_\_\_\_ 2018

## REGULATIONS

### On Drafting and Defence of Bachelor's Theses and Master's Theses

APPROVED

At the Senate meeting of \_\_\_\_\_ 2018.

Meeting minutes No. \_\_\_\_\_

## GENERAL PROVISIONS

1. The Regulations on Drafting and Defence of Bachelor's Theses and Master's Theses (hereinafter referred to as the Regulations) have been drafted in accordance with the Law on Institutions of Higher Education, Regulations of the Cabinet of Ministers No.512 of 26 August 2014 "Regulations on the National Standard of the Second Level Professional Higher Education" and the procedure laid down by the Riga Aeronautical Institute (RAI).
2. The Regulations lay down the procedure of drafting, defence and evaluation of Bachelor's theses, Master's theses and qualification papers (hereinafter referred to as the diploma paper).
3. A diploma paper is the final paper in student's studies at RAI.
4. The Regulations shall be binding upon RAI students – authors of diploma papers, supervisors of diploma papers and members of the State Examination Commission (hereinafter referred to as the Commission).
5. A diploma paper is the final paper of students at RAI. In a diploma paper, the student shall certify the ability to independently resolve the theoretical and practical matters related to the acquisition of a professional higher education degree or qualification, to view and bring forward a problem, to analyse it using research methods, as well as to make conclusions and proposals for resolution of the problem. The diploma paper should be submitted and defended in the official language.
6. The student shall select a topic for his/her diploma paper from the list approved by the RAI Senate, which is available at the RAI Library. When coordinating the name of the topic of the diploma paper with the diploma paper supervisor, the student shall be entitled to offer a topic of the diploma paper of his/her own choice according to the profile of the study programme.
7. In order to approve the name of the topic of the diploma paper and the diploma paper supervisor, the student shall submit an application addressed to the vice-rector for studies (Annex 1).
8. The student shall submit the application by **May 15** of the penultimate year of studies.
9. International students at RAI may have deadlines for the submission of the application, as well as deadlines for drafting and submission of the diploma paper differing from those defined in Paragraph 8 of these Regulations.
10. In order to improve the quality of the diploma paper, students are recommended to select a topic for their diploma paper at earlier stages of studies and to link the reports and course papers drafted during the study process to the selected topic of the diploma paper.
11. The application shall be accepted for review provided that the student has no academic or financial debts at RAI.
12. After the approval of the topic of the diploma paper the diploma paper supervisor shall prepare for the student a task of the diploma paper (Annex 2). The student in cooperation

with the diploma paper supervisor shall draft a structured calendar plan for the fulfilment of the task.

13. The diploma paper supervisor shall advise the student at least twice a month, control drafting of the diploma paper and prepare feedback (Annex 3) certifying that the student has drafted the diploma paper independently and in sufficient quality in accordance with the level of studies to deliver it for review, as well as has observed the drafting and presentation rules for the diploma paper included in these Regulations.

### **VOLUME, STRUCTURE AND CONTENT OF THE DIPLOMA PAPER**

14. Volume of the diploma paper:
  - the volume of a qualification paper shall be no less than 40 pages without annexes;
  - the volume of a Bachelor's thesis shall be no less than 60 pages without annexes;
  - the volume of a Master's thesis shall be no less than 80 pages without annexes;
  
15. The diploma paper shall include the following in the defined order:
  - title page in Latvian and in two foreign languages (Annex 4);
  - abstract in Latvian and in two foreign languages (Annex 5);
  - table of contents (Annex 6);
  - list and explanations of acronyms, abbreviations and symbols used in the paper (if necessary) (Annex 7);
  - the content part – introduction, main section of the paper, conclusions and proposals (recommendations);
  - list of references and information sources (Annex 8);
  - annexes (if necessary);
  - certification of the author of the diploma paper (Annex 9);
  - evaluation form of the State Examination Commission (Annex 10).
  
16. The cover of the diploma paper (Annex 11) and the components of the diploma paper listed in Paragraph 14 of these Regulations shall be prepared following the form defined in the relevant annexes.
  
17. The first page of the diploma paper shall be its title page, which should be included in the paper in three languages – in the official language, in English and in Russian. The title page in all the three languages shall follow the same form (Annex 4).
  
18. The title page of the diploma paper should state the student's identifier, which is the number of the study contract concluded between RAI and the student – the author of the diploma paper.
  
19. The title page shall be followed by the abstract of the diploma paper in the official language, in English and in Russian. The volume of text of the abstract in each language shall not exceed one page and the translation of the text into all the languages should be the same.
  
20. The abstract should include the name of the topic and information about the author, the diploma paper supervisor, topicality of the diploma paper, the goal and tasks of the paper, the volume of the work, the number of tables and figures, references used and annexes. It

shall briefly characterise the structure of the diploma paper, the methods used, materials for drafting of the paper and the main results obtained.

21. The abstract should list no more than 5 keywords (or combinations thereof), which characterises the research direction of the paper. Key words should be written in the nominative case.
22. The table of contents (Annex 6) should include numbers in sequence of title pages of the content part of the diploma paper (introduction, all chapters, sub-chapters of the paper, conclusions and proposals), as well as numbers in sequence of the first page of the list of references and sources, and annexes.
23. The list and explanations of acronyms, abbreviations and symbols used in the paper, which are listed in alphabetical order, should be appended to the diploma paper, if necessary, (Annex 7).
24. This list shall be prepared in cases, when such acronyms, abbreviations or symbols are used in the paper, which are not well-known and in a number no less than 10. If the number of acronyms, abbreviations and symbols used in the paper does not exceed 10, no separate list shall be created and their explanations should be included in the text of the diploma paper, when the corresponding acronym, abbreviation and symbol is used for the first time.
25. The introduction of the diploma paper shall substantiate topicality of the topic of the paper, provide a description of the problem, formulate the goal and tasks planned for reaching the set target. The introduction shall describe the research methodology used and provide a short description of references used in drafting the paper. The volume of introduction usually shall not exceed 2 pages.
26. The main part of the diploma paper shall include the theoretical, practical and analytical fulfilment of the set goal of the paper. The text of the diploma paper shall be laconic. Extracts from references relating to generally known considerations are not acceptable, automatic transcription from previously published papers is not allowed in the diploma paper. Professional and scientific language of the sector should be used in the paper.
27. The main part of the diploma paper according to the set tasks of the paper shall be structured into chapters and subchapters numbering them accordingly. When creating chapters and subchapters, the student should consult with the diploma paper supervisor.
28. The first chapter of the diploma paper shall be created as a theoretical discussion based on previous research and analysis of theoretical information. Further chapters of the diploma paper shall describe the fulfilment of the tasks defined in the introduction of the paper for the achievement of goal of the paper.
29. The textual material in the main part of the paper shall be supplemented with tables and charts making references to the sources used, incl. internet resources, results of previous studies, etc. The volume of the main part shall constitute 70 – 80% of the total volume of the diploma paper.

30. The final part of the diploma paper shall include conclusions and proposals (recommendations), which shall be formulated as individual points numbering them in sequence. Conclusions shall in a systematised and consolidated way reflect the main results of the student's research work. Conclusions shall directly arise from the content of the paper and certify that the goal of the paper has been achieved and the tasks have been fulfilled. In conclusions, the author shall not be allowed to include facts and ideas, which are not reflected in the main part of the diploma paper. It is recommended to make 1-2 conclusions about each chapter of the diploma paper.
31. Proposals (recommendations) shall be based on main results and conclusions of the diploma paper and usually refer to practical use of the results. Proposals should be specific, precisely defined and addressed to a specific performer, specifying what exactly should be done.
32. The materials, which exceed one full A4 page, for example, tables, figures, drawings, shall be added in annexes to the diploma paper making references to them in the paper. Annexes should be numbered specifying the annex number in the top right corner of the page. Only the title page of the annex should be indicated in the table of content, other pages of annexes should not be included.
33. The inclusion of drawings in annexes to the diploma paper is mandatory for students of the study direction "Mechanics and Metalworking, Heat Energy, Heat Engineering and Mechanical Engineering".
34. Annexes to the diploma paper should be followed by a certification of the author of the diploma paper and the evaluation form of the State Examination Commission. A certification following the form defined in Annex 9 shall be prepared by the author of the diploma paper, who certifies with his/her signature that the diploma paper is an original research developed by the author.
35. The evaluation of the diploma paper shall be written on the evaluation form of the State Examination Commission by the chairman of the State Examination Commission after defence of the diploma paper and adoption of the decision on the evaluation of the work by the State Examination Commission.

### **REQUIREMENTS FOR PRESENTATION OF THE DIPLOMA PAPER**

36. The diploma paper shall be written on a computer on A4 pages (210x297mm) and shall be submitted for review bound into hard covers, preparing it following the sample defined in the relevant annexes to these Regulations.
37. The text of the diploma paper shall be prepared following general requirements for presentation:
  - font – Times New Roman, font size 12 pt;
  - the text shall be justified, first line – 1.25 cm, line spacing – 1.5;
  - page margins: left margin – 30 mm, right margin – 15 mm; top and bottom margin – 20 mm;

- pages shall be numbered starting from the page following the title page. The page number should be placed at the bottom of page and centred.
38. The following requirements should be followed for the creation and presentation of chapters and subchapters:
- each chapter of the diploma paper does not need to start on a new page, but it is not allowed to start a subchapter at the bottom of a page, if it is not followed by text of the sub-chapter (at least two lines);
  - font for headings of chapters and subchapters – Times New Roman, bold, all caps, font size 12 pt, spacing after the heading – 18 pt, if not followed by a subchapter heading, and 12 pt, if followed by a subchapter heading;
  - font for headings of subchapters – Times New Roman, bold, sentence case, font size 12 pt, centred, spacing before the heading – 12 pt, after the heading – 6 pt; headings of chapters and subchapters should not end with a full stop;
  - third-level subchapters are not recommended to prevent fragmentation of the structure of the paper. If it is necessary to separate sections within a subchapter, it is recommended to use subheadings. Those should have font – Times New Roman, bold, font size 12 pt, subheadings should be left-aligned.
39. For the analytical information included in the diploma paper to be more easily readable and visible, figures and tables should be created. They should be prepared following the form defined in Annexes 12 and 13.
40. The author of the diploma paper may choose the form of presentation of summarised information, taking into account that the paper can include tables and figures, which can appear on one A4 page. It is recommended to include larger tables and figures in annexes to the paper creating references to them in the paper.
41. The diploma paper may include figures and tables from sources, for example, previous research, materials of ministries, etc. Those shall be prepared following the form provided in Annexes 12 and 13 specifying a reference to the data source under the table or figure.
42. Figures, tables and formulae shall be included in the diploma paper as close to the first reference to relevant figure, table or formulae in the text as possible, for example, see Figure 3.1 in Annex 12.
43. The following figure creation and presentation requirements shall be followed in the diploma paper:
- all the images in the diploma paper (diagrams, charts, maps, drawings, etc.) shall be called figures;
  - in accordance with the topic of the research, the author of the paper may freely choose the most appropriate types of figures to use for presentation of research data in the paper;
  - font Times New Roman, font size 10 pt shall be used for the creation of figures;
  - there should be no frames or font colours in figures, legends of figures should not be placed in a frame;

- figures should be numbered within a section (for example, 2.1.; 2.2.; 2.3...3.1.;3.2...), their number and name shall be written under the figure and centred;
  - the source should be specified under each figure. If a figure has been made by the author, it should be indicated “Created by the author”, “Author’s calculations according to [1]” or similar;
  - the figure name shall be in the same line with its number, font type Times New Roman, font size 12 pt, bold should be used for figure names, but not for the figure number; no full stop should be used after the figure name, spacing after the figure name – 6 pt.
44. Tables in the diploma paper should be created in accordance with the following presentation requirements (Annex 13):
- font Times New Roman, font size 10 pt should be used for tables, the text in the header row of the table should be centred, bold, spacing after the table – 6 pt;
  - tables shall be numbered within a section, their numbers should be written above the table, right-aligned;
  - if part of a table is moved to the next page, “Table continued” should be written above it;
  - the source should be specified under each table. If a table has been made by the author, it should be indicated “Created by the author”, “Author’s calculations according to [1]” or similar;
  - the table name shall be written above the table and centred. Font Times New Roman, font size 12 pt, bold should be used. No full stop should be used after the table name.
45. Formulae in the diploma paper shall be written in a separate line, centred, a full stop should be used after each formulae. The number of the formula within the section should be included in the same line at the right side. The number should be included in parentheses specifying the number in sequence of the chapter and the formula, for example, (3.1.); (4.2.).
46. Under each formula, starting with the word “where”, each symbol used in the formula shall be explained, indicating the unit of each symbol. For instance,
- where:
- N is the total number of road sections in the route;
- L is the distance between two road sections (km);
- T is the travel time (hours).
47. The list of references and sources shall include all the references used in drafting of the diploma paper (books, articles, texts, internet resources, etc.) and references to all sources should be included in the text of the diploma paper. If the author of the diploma paper has not made references to all the sources used in the paper, the diploma paper may be considered plagiarism and the author of the diploma paper may not be allowed to defend the paper in accordance with the procedure laid down in these Regulations.
48. The minimum number of references in a Bachelor’s thesis shall be 10 sources, of which at least 5 % are scientific literary sources and at least 5 % are references in a foreign language. The minimum number of references of a Master’s thesis shall be 20 sources, of

which at least 10 % are scientific literary sources and at least 10 % are references in a foreign language. Presentation of the list of references and sources shall follow the examples provided in Annex 7.

49. When creating the list of references, the following requirements shall be observed:

- the list of references should be arranged in the order, in which the reference to the source concerned first appears in the text;
- a reference to a literary source shall be created according to the number in sequence in the list of references placing it in brackets, for example, [1];
- references to several works shall be created as follows: [1], [2], [7] etc.;
- if information from one page of a literary source rather than the entire source is used, then the page number should be specified, for example [6, p. 22];
- quotes from literary sources shall be written in quotation marks specifying a reference to the literary source being quoted;
- names of sources in the list of references and information sources shall be written in their original language;
- examples of presentation of literary sources depending on the type of the source used (monograph, periodical, collected papers etc.) are shown in Annex 8.

## **SUBMISSION AND DEFENCE OF A DIPLOMA PAPER**

50. In order to prepare students for defence of diploma papers in a timely manner and evaluate the quality of the papers drafted by students and the involvement of students in drafting a paper, preliminary defence of diploma papers shall be organised.
51. Preliminary defence of diploma papers shall take place at a scientific conference no later than one month before the date of defence of the diploma paper. The preliminary defence commission shall be made of members of the scientific commission of the scientific conference for students, which are approved in accordance with the procedure defined by RAI.
52. Students shall send the electronic version of their diploma papers to their diploma paper supervisor no later than one week before the preliminary defence.
53. For preliminary defence of a diploma paper students shall prepare presentations in accordance with the requirements laid down in Paragraph 70 of these Regulations.
54. The diploma paper supervisor shall participate in the preliminary defence of the diploma paper, who shall focus attention of the student on shortcomings and weaknesses, make proposals and recommendations for improvement of the diploma paper.
55. After the preliminary defence of the diploma paper the diploma paper supervisor shall discuss with the student any clarifications, supplements and corrections to be made to the diploma paper in accordance with the critical remarks and recommendations received during the preliminary defence.
56. After a successful preliminary defence and a discussion with the diploma paper supervisor the student shall improve the diploma paper accordingly and shall prepare it for submission for defence within the deadline set by RAI.
57. In case of an unsuccessful evaluation, the Preliminary Defence Commission shall decide on the improvement of the diploma paper and repeated preliminary defence within the deadline set by the head of the Preliminary Defence Commission. If the evaluation is negative also in the repeated preliminary defence, the diploma paper cannot be advanced for defence.
58. If the student gets the right to defend his/her diploma paper, he/she shall prepare a printed version of the diploma paper and submit it to the diploma paper supervisor. The diploma paper supervisor shall review the paper and in case of a positive evaluation shall certify with his/her signature that the paper has been drafted independently and meets the requirements of these Regulations, and allows the student to bind the diploma paper and submit it for review.
59. Having bound the paper, the student shall prepare an electronic version of the diploma paper by writing it to a data medium. The data medium should be placed in a sealed envelope, which is bound inside the back cover of the diploma paper.
60. The student shall submit the diploma paper that has been signed in accordance with provisions of these Regulations, the appended data medium, the certification signed by the author of the paper and the feedback of the diploma paper supervisor (Annex 3) to the RAI Library no later than two weeks before the date of defence of the diploma paper.

61. The head of the RAI Library shall hand over the received diploma paper for review. The reviewer of the diploma paper in accordance with the topic of the diploma paper shall be designated by the director of the respective study direction and approved by the RAI's vice-rector for studies.
62. It shall be the duty of the reviewer to evaluate the content, positive and negative properties of the diploma paper impartially and make a conclusion about the paper to be defended. The reviewer shall provide his/her evaluation in the review form (Annex 14) providing a verbal evaluation and a score for each parameter of the diploma paper specified in the review form. If necessary, the reviewer shall specify in his/her review questions, which the student should answer when defending the diploma paper.
63. The reviewer should return the review and the diploma paper to the RAI Library no later than two working days before the day of defence of the diploma paper. During this time the student shall be familiarised with the content of the review and the questions asked by the reviewer.
64. Having received a review the RAI's vice-rector for studies shall read the review and the feedback of the diploma paper supervisor and shall certify with his/her signature that the diploma paper shall be advanced for defence. A diploma paper cannot be advanced for defence, if the diploma paper supervisor and the reviewer indicate that the paper was not drafted by the author and is plagiarism, as well as, if it does not meet provisions of these Regulations.
65. Those students shall be entitled to defend their diploma papers, who have submitted their placement reports in a timely manner, whose preliminary defence of the diploma paper was successful and who have no outstanding tuition fees. The list of students, who are allowed to defend their diploma papers, shall be approved by a RAI order.
66. Diploma papers shall be defended at an open meeting of the State Examination Commission inviting diploma paper supervisors, reviewers, teaching staff and students. The composition of the State Examination Commission shall be approved by a RAI order.
67. Only members of the State Examination Commission shall have voting rights at the meeting, as well as the right to ask questions, make comments and statements.
68. Prior to defence of a diploma paper, the State Examination Commission shall read the bound diploma paper submitted for defence.
69. 20 minutes shall be provided for defence of the diploma paper, including the time for the report of the author of the diploma paper and answers to the questions asked by members of the State Examination Commission. Defence shall start from the report of the author of the paper. The time for the report when defending a Bachelor's thesis shall be 7 minutes, Master's thesis – 10 minutes.
70. The report presentation shall usually be prepared in a Microsoft Power Point or in a similar format. In the presentation the student shall:
  - substantiate topicality of the topic of the paper, its theoretical and practical significance;
  - formulate the goal, tasks of the research and the research methods used;

- present the content of the paper, the most important aspects, research results, supplementing the content of the paper with visual materials – tables and figures;
  - formulate conclusions and proposals, mainly reflecting the result of own contribution and the possibilities of practical use of the research.
71. After the presentation of his/her diploma paper the author shall answer the questions asked by members of the State Examination Commission. After the answers to questions the State Examination Commission shall read the feedback of the diploma paper supervisor and the review on the diploma paper. If the review includes any questions asked by the reviewer, the author shall answer them.
72. The diploma paper shall be evaluated on a 10-point scale, the assessment of the paper shall be decided in open voting during the closed part of the meeting of the State Examination Commission. If votes of the commission members being present divide equally, the vote of the chairman of the commission shall prevail.
73. The diploma paper shall be evaluated on the basis of the following main criteria:
- thematic conformity of the content of the diploma paper to the study programme, in which the paper is defended;
  - quality of drafting of the diploma paper and the reviewer's assessment;
  - quality of the report of the author of the diploma paper – ability to present own research and results obtained with arguments and at the level corresponding to the education being obtained;
  - ability to formulate conclusions and proposals (recommendations);
  - quality of answers to the questions asked by members of the State Examination Commission and the reviewer.
74. The student, who has received an unsatisfactory assessment for defence of a diploma paper, shall be entitled to defend his/her diploma paper again in the next year of studies. The State Examination Commission shall decide whether the student should submit a diploma paper on the same or other topic.
75. Preliminary defence and defence of diploma papers by students of RAI and the Daugavpils branch of RAI shall take place in the RAI premises in Riga, Mežkalna iela 9.
76. After defence a copy of the diploma paper (printed and electronic) together with the feedback of the diploma paper supervisor and the review shall be kept at the RAI Library. The diploma paper must be kept for 10 years.
77. Any student may challenge the assessment received for his/her diploma paper by submitting a written appeal to the RAI rector until the end of the next working day. The appeal shall be reviewed by the Appeal Commission established in accordance with the procedure defined by RAI. The Appeal Commission shall include at least three invited specialists corresponding to the content of the appeal other than members of the State Examination Commission, who evaluated to diploma paper of the appellant.

78. The RAI rector shall inform the appellant and members of the State Examination Commission about their rights to participate in the meeting of the appeal commission and provide their explanations.
79. The appeal shall be reviewed as quickly as possible, but no longer than within 7 days of the date of receiving the appeal. The decision of the Appeal Commission shall be notified to the appellant in writing by the Chairman of the Appeal Commission within 2 working days of adoption of the decision of the Appeal Commission.