**2. Guidelines for preparing the review on History and Philosophy of Science**

In the course of preparation for the final exam in the training course "History and Philosophy of Science," a PhD student (applicant) shall present a review on the history of a chosen branch of science in which he/she receives PhD training. Review on History of Science is an independent academic and research work performed by a PhD student (applicant). Its main objective is to develop skills of conducting independent work with original scientific and philosophical texts, information and analytical literature, monographic research related to current problems of modern philosophy and methodology of a certain branch of science. When preparing a review, a PhD student shall demonstrate a sufficiently high level of logical and methodological culture of thinking, creativity in research of a specific scientific problem in the context of philosophical understanding and interpretation.

The topic of the review should be agreed with a PhD student’s research supervisor (or the Head of the Department for applicants), the Head of Social Sciences and Humanities Division and approved by the order of TPU. Assessment of submitted reviews is performed by a member of the Examination Board, who received the advanced training in “History and Philosophy of Science”. A PhD student is admitted to take an exam on condition that his/her review is assessed positively and receives the mark “passed”.

*Requirements for review performance*.

Review is presented in А4 paper format. The review text is typed using a computer in a 14 font size. Interline spacing is 1.5. Required margins of the text: left - 25-30 mm, right - 10-15 mm, top - 20 mm, bottom - 20 mm. All pages of the review are numbered and bound. The review volume shall be at least 24 pages.

*The originality of the review text* should be 95%. *The structure* of the review includes a title page, reviewer’s page, contents page, introduction, main part, conclusion, and a list of references. *The title page* is the first sheet of the review and is filled in according to the sample.

*The content* includes names of chapters, sections, paragraphs with a number of the starting page.

*The introduction* describes the novelty of the studied topic, degree of its elaboration, the work objective and tasks, and formulates the topic main provisions and the work structure.

The text of the *main part* is divided into chapters, sections, or paragraphs, where the content of the work is outlined. In the main part, it is recommended to highlight 2 or 3 issues reflecting different aspects of the topic. It is important to consider different points of view concerning the examined problem and give a personal assessment of the viewpoints considered.

In *conclusion*, the results of the topic examination are summed up. The author's identification of prospective trends for the problem elaboration is desirable.

The review pages are numbered with Arabic numbers, consecutive numbering is observed throughout the text. A number is placed at the bottom center of a page. Each chapter (section) shall start with a new page.

*References*, quotes shall be given in square brackets.

*The list of references* is given in the alphabetical order and shall contain at least 25 sources, with at least 50% being dated of the last five years, and half of them dated of the last two years.

**2.1. Preliminary topics for preparation of reviews related to history of technologies development:**

1. History of the development of spacecraft energy-generating devices in the field of technical sciences;

2. Development of nuclear weapons: historical and scientific aspects;

3. History of the development of nuclear, thermal and renewable energy and related technologies: problems and prospects;

4. History of development of forecasting methods in nuclear, thermal and renewable energy and related technologies;

5. The development of fusion energy: from the first thermonuclear reactions to the ITER project;

6. History of nuclear power engineering development;

7. History of thermal power engineering development;

8. History of renewable energy development;

9. History of the development of impulse power supplies in the field of technical sciences;

10. Nuclear, thermal and renewable energy in the context of environmental issues: historical aspect.

**3. List of readings and Internet resources**

**Compulsory Reading**

1. Barseghyan H. The Laws of Scientific Change / H. Barseghyan. – New York: Springer, 2015. – 275 р. // Springer Link – URL: <https://link.springer.com/book/10.1007/978-3-319-17596-6> The text is electronic [Date of application: 28.06.2020].
2. Feyerabend P: Against Method. <https://theanarchistlibrary.org/library/paul-feyerabend-against-method> The text is electronic [Date of application: 28.06.2020].
3. Mirkin M. The Status of Technological Knowledge in the Scientific Mosaic // Scientonomy. – 2018. – Vol. 2. – P. 39-53 – URL: <https://scientojournal.com/index.php/scientonomy/article/view/29645>]. –
The text is electronic [Date of application: 28.05.2020
4. Patton P. Reformulating the Second Law / P. Patton, N. Overgaard, H. Barseghyan // Scientonomy. – 2017. – Vol. 1. – P. 29-39 – URL: <https://scientojournal.com/index.php/scientonomy/article/view/27158>. The text is electronic [Date of application: 28.06.2020].
5. Popper K. The Logic of Scientific Discovery / K. Popper. - London ; New York, 2005. – 545 p. – URL: <http://strangebeautiful.com/other-texts/popper-logic-scientific-discovery.pdf> The text is electronic. [Date of application: 28.05.2020].

**Additional Reading**

1. Latour B. Laboratory Life: The Construction of Scientific Facts / B. Latour, S. Woolgar. – Princeton : University Press, 1986. – 296 р. – URL: <https://sites.tufts.edu/histmath/files/2015/11/LatourLabLif.pdf> [Date of application: 28.05.2020].
2. Scientific Principles and Research Practices: chapter 2 // Responsible Science: Ensuring the Integrity of the Research Process. Volume I. – Washington, DC : National Academy of Sciences, 1992. – Pp. 36-66. – URL: <https://www.nap.edu/read/1864/chapter/4> [Date of application: 28.05.2020].
3. Fjällbrant N. Scholarly communication - historical development and new possibilities. – URL: <http://internet.unib.ktu.lt/physics/texts/schoolarly/scolcom.htm> [Date of application: 28.05.2020].

**Information and software support:**

1. Full-text database ScienceDirect – <https://www.sciencedirect.com/>.

2. E-library system “Lan” – <https://e.lanbook.com/>.

3. Scientific electronic library eLIBRARY.RU – <https://elibrary.ru/defaultx.asp>.

<http://web.tpu.ru/webcenter/portal/osgn/aspirant?_adf.ctrl-state=1bhhwtls9r_4>