

6. Program for students' self-study

The purpose of students' self-study is to develop common cultural and professional skills, ability and readiness for self-educational activity for a lifetime.

Students' self-study is organized in accordance with the following principles:

- systematic studying;
- effectiveness;
- planning;
- continuous monitoring and control;
- motivation;
- effective use of information technologies.

Timetable of students' self-study is given in the rating-list.

Self-study is carried out in the Scientific and Technical Library of TPU (ul. Belinsky, 55), with the help of the literature collection and computer laboratory of the department (ul. Timakova, 12, building 16a TPU).

6.1 Students' self-study forms

Self-study is organized at the following levels:

- reproductive;
- cognitive-search;
- creative.

Within these levels, the student's self-study includes routine and creative problem-oriented self-study.

Routine self-study aims to set and expand knowledge and develop the students' skills, it includes:

- doing exercises on the material studied, searching for and reviewing literature sources related to the specific topics of the course;
- homework;
- advanced self-study;
- study of material on given topics;
- self-study for laboratory works and practical classes;
- pre-test activity.

Creative self-study aims to develop rational skills and a set of universal competences, to raise creative potential. Creative self-study includes:

- search, analysis, structuring and presenting of the information;
- research activity and participation in scientific student conferences, seminars and contests.
- analysis of scientific works related to the tasks assigned by a teacher.

6.2. Students' self-study content according to the course:

6.2.1 List of scientific themes and research investigations:

- investigation of dimensional accuracy and surface layer quality of small diameter holes machined by mandrelling;

- controlling residual stresses and accuracy of the mandrelled small diameter holes;
- ways of increasing productivity and accuracy of the deep hole drilling;
- geometrical parameters of indexable cutting tools;
- investigation of non-free cutting by cutting tools with edges of a complex shape.

6.2.2 Topics of personal assignment:

- lathe self-centering chucks;
- collet chucks;
- magnetic and electromagnetic chucks;
- vacuum operated fixtures;
- centerless grinding;
- honing and siperfinishing;
- cold working of workpieces;
- methods of part labeling;
- methods of deburring;
- methods of sheet material cutting;
- trends in teat treatment and chemical-heat treatment;
- trends in machining with cutting tools;
- trends in machining with abrasive tools;
- trends in casting methods.

6.2.3 Topics for self study:

- design for manufacturing;
- technological heredity.

6.3. Self-studying results assessment

Assessment of the results of the self-studying is included in everyday assessment and progress assessment. It may use the following ways of assessment: presentation in class, students' review each other's papers, teacher's assessment of the papers, etc.

6.4. Studying and methodological support of self-study

6.4.1. References:

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 24. <http://icrank.com/>
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