<div align="center">**Course Description**</div>

Discipline/Course: CAD-CAM systems

The Basic Educational Program specialty: MECHANICAL ENGINEERING

The department of high technology physics in mechanical engineering

Instructor: Sergey A. Shanin, PhD

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Learning Outcomes:

The purpose of teaching discipline of "CAD-CAM systems" - formation at students of knowledge of theoretical bases, practical skills and abilities of use of the modern computer editors and application program packages in case of design of technological processes, equipment and programming of the automated equipment in system of technological preparation;

at the level of reproduction: master the terminology used when working on the PC

at the level of understanding: the objectives and tasks bases computer technology, the role and importance of computers in solve of engineering problems

Theoretical skills: know the possibility of CAD-CAM systems;

Practical skills: apply the possibility CAD-CAM systems for solving problems of engineering technology.

Skills: work with CAD-CAM system.

Course Outline:

Section 1. Structure and classification of CAD-CAM systems.

Section 2. Modeling in system KOMPAS 3D.

Section 3. Modeling in system SolidWorks.

Section 4. Turning and milling processing of material (FeatureCAM).

Lab 1. Parametrical modeling 2D (KOMPAS 3D).

Lab 2. Parametrical modeling 3D (KOMPAS 3D).

Lab 3. Parametrical modeling assembly 3D (KOMPAS 3D).

Lab 4. Parametrical modeling 2D (SolidWorks).

Lab 5. Parametrical modeling 3D (SolidWorks).

Lab 6. Parametrical modeling assembly 3D (SolidWorks).

Lab 7. Modeling of stationary distribution of heat (SolidWorks).

Lab 8. Modeling of turning of a detail in system (FeatureCAM).

Lab 9. Modeling of milling processing of a detail in system (FeatureCAM).

Course Delivery: one semester, 18 weeks

Prerequisites: "Mathematics", "Descriptive geometry"

Co-requisites: "Computer science

Final Assessment: pass/fail exam

Course Developer: Sergey A. Shanin, PhD