

# Automation of process mechanisms design equipment

(course title)

## **COURSE SYLLABUS ABSTRACT**

1-40 05 01 Information systems and technologies (majors in)

(speciality code and name)

1-40 05 01-01 Information systems and technologies (in designing and producing)

(specialisation code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	3, 4	3, 4	2
Semester	5, 6	6, 7	3, 4
Lectures, hours	50	10	10
Laboratory classes, hours	50	10	10
Course project, semester	7	7	4
Exam, semester	5	6	3
Pass/fail, semester	6	7	4
Contact hours	100	20	20
Independent study, hours	116	196	196
Total course duration in hours / credit units	216/6		

### 1. Course outline

Automation of development and execution of design documentation in CAD. Working in Mathcad. Graphical construction of models of parts and mechanisms in CAD Compass 3D, Solidworks, NX. Construction and modeling of design diagrams of mechanisms. Computer implementation of dynamic mechanism synthesis.

### 2. Course learning outcomes

Upon completion of the course, students will be expected to know:

- modern methods and methods of computer design;
- types and properties of structural materials used in mechanical engineering;
- basic performance criteria for machine parts and assemblies;

be able to:

- design general machine building structures with practical production of technical documentation and use of CAD;
- select reference literature, GOSTs, prototypes of structures during design, be able to model them in modern CAD;
- select reference literature, design prototypes;
- select the optimal materials for machine parts and use them rationally;
- perform calculations using classical methods and modern modeling;

possess:

- theoretical and experimental methods for assessing the quality and technical level of engineering equipment;
- methods of modern design, design and study of general-purpose parts and assembly units.

### 3. Competencies

SK-8 – Own the basis of engineering and physical modeling.

### 4. Requirements and forms of midcourse evaluation and summative assessment

- verbal-written: laboratory protection, test, exam.