

Fluid and Gas Mechanics

(course title)

COURSE SYLLABUS ABSTRACT

6-05-0611-01 Information systems and technologies

(speciality code and name)

Information systems and technologies in designing and producing

(concentration)

6-05-0714-02 – Mechanical engineering technology, metal-cutting machines and tools

(speciality code and name)

Machine-building process equipment

(concentration)

	STUDY MODE		
	full-time		part-time (shortened program)
Year	3		2
Semester	6		4
Lectures, hours	34		6
Practical classes (seminars), hours	16	34*	4
Exam, semester	6		4
Contact hours	50	68*	10
Independent study, hours	58	76*	98
Total course duration in hours / credit units	108/3	144/4*	108/3

* for specialty 6-05-0714-02

1. Course outline

Fluid and gas static. Fluid and gas kinematics. Fluid and gas dynamics. Hydraulic and pneumatic drive of process equipment.

2. Course learning outcomes

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

- basic properties of liquids and gases;
- basic laws of fluid and gas mechanics;

be able to:

- solve the problems of statics, kinematics and dynamics of liquid and gas;

to possess a skill:

- methods of solving the problems of statics, kinematics and dynamics of liquid and gas.

3. Competencies

6-05-0611-01 Use the basic laws of natural sciences in professional activities.

6-05-0714-02 Master the basics of designing machinery mechanisms, technological equipment and technological processes of machine-building production. Be able to design technological processes for processing parts and assembling machines. Be able to concentrate metal cutting machines and their technological equipment. Be capable on the basis of knowledge about the mechanics of liquid, gases, solids, their behavior under thermal or force effects, using analytical and numerical methods, including the method of finite elements, to solve professional problems in mechanical engineering.

4. Requirements and forms of midcourse evaluation and summative assessment

- verbal-written: protection of practical classes, exam.