Computer Simulation of Hydrodynamic and Thermal Processes
(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)

	STUDY MODE	
	full-time	part-time (shortened program)
Year	4	3
Semester	7	5
Lectures, hours	48	10
Laboratory classes, hours	32	6
Exam, semester	7	5
Contact hours	80	16
Independent study, hours	100	164
Total course duration in hours / credit units	180/5	

1. Course outline

Systems of equations of heat exchange and mechanics of liquid and gas. Numerical methods of heat exchange and fluid and gas mechanics. Fundamentals of the finite difference method. Mathematical modeling of turbulent currents.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: numerical methods for calculating hydrodynamic processes; modern computer programs in the field of CFD.

be able to: calculate laminar and turbulent fluid flows; use modern computer programs in the field of CFD.

to possess a skill: the method of numerical calculation of laminar and turbulent fluid flows; skills of working in modern computer programs in the field of CFD.

3. Emerging competencies

Master the basics of engineering and physical modeling.

4. Requirements and forms of current and interim certification

– verbal-written: laboratory protection, exam.