OBJECT-ORIENTED PROGRAMMING AND DESIGN

(name of discipline)

OUTLINE

TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Specialty__1 - 53 01 02 - "Automated systems of information processing and management"__

	Form of education		
	Full-time	**Correspondence**	**Part-time shortened**
Course	3	3, 4	1, 2
Semester	5, 6	6, 7	2, 3
Lectures, hours	128	14	16
Laboratory hours	64	16	16
Audit work		6 сем. (2 ч.) 7 сем. (2 ч.)	2 сем. (2 ч.) 3 сем. (2 ч.)
Exam, Semester	5, 6	6, 7	2, 3
Contact Work for Study, hours	192	30	36
Independent work, hours	212	374	368
Total hours of the discipline	414/11	404/11	404/11

1. Summary of the content of the discipline

The aim of the course is to teach students the technological foundations and practical skills of design, implementation and maintenance of large software systems of modern computers on the basis of object-oriented programming.

2. Course learning outcomes:

Upon completion of the course, students will be expected to

know:

- principles of object-oriented programming;
- ways of implementation of relations between classes;
- use of polymorphism, inheritance and encapsulation properties;
- possibilities and limitations of abstract classes, interfaces and templates;

be able to:

- create structured programs based on object technology in the environment of modern object-oriented design systems;
- switch from one object-oriented platform to another;
- use the capabilities of classes and UML language to represent design solutions.

master:

- methods and techniques for constructing object models of real-world entities and processes.

3. Competencies to be formed

AK-1: Be able to apply basic scientific-theoretical knowledge to solve theoretical and practical problems.
AK-2: Master the systemic and comparative analysis.
AK-3: Have research skills.
AK-4: Be able to work independently.
AK-5: Be able to generate new ideas (have creativity).
ASC-3: Have the ability for interpersonal communication.
SLC-5: Be capable of criticism and self-criticism.
SLC-6: Be able to work in a team.
PC-1. Operate modern automated control systems professionally.
PC-7. Design templates for typical solutions and components of information processing systems.
PC-19. Analyze the prospects and relevance of information technology development.
PC-21. Develop technical specifications for the designed object of automation, taking into account the results of research and development work.
PC-22. Develop ways to reduce efficiency losses in automation facilities.
PC-23. To carry out the training of staff.
PC-24. Work with legal literature and labor legislation.
PC-25. Organize the work of small teams of performers to achieve their goals.
PC-26. Interact with specialists of allied fields.
PC-27. Analyze and evaluate the collected data.
PC-28. Negotiate with other stakeholders.
PC-29. Prepare reports, materials for presentations.
PC-30. Use global information resources.
PC-31. Master the modern means of infocommunication.

4. Requirements and forms of current and interim certification.

In the study of the discipline used the module-rating system to assess the knowledge of students. The following forms of classes are used: traditional lectures and multimedia lectures, problem / problem-oriented laboratory classes using a computer. At the end of laboratory works their defense is provided. At the end of each module there is a control work..