ELECTRONIC CONTROL SYSTEMS IN MOTOR VEHICLES

(course title)

COURSE SYLLABUS ABSTRACT

Specialty 6-05-0715-03: Automobiles, Tractors, Mobile and Technological Complexes
Specialization: Computer Engineering in the Automotive Industry

	STUDY MODE
	full-time
Year	**4**
Semester	7
Lectures, hours	16
Laboratory classes, hours	34
Pass/fail, semester	7
Contact hours	50
Independent study, hours	58
Total course duration in hours / credit units	108/3

1. Course outline

The objective of the course "Electronic Vehicle Control Systems" is to develop knowledge about the physical processes occurring in electrical and electronic devices; the purpose of individual electronic components; the purpose, design, and operation of devices, apparatus, and electrical systems; and the operating principles of electronic control systems for vehicle components.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- prospects for the development of automotive electronic systems;
- principles of construction of microprocessor control systems;
- purpose, structure, principle of operation, characteristics of sensors and actuators used in microprocessor control systems;
- organization of interaction of the microprocessor system controller with sensors and actuators of the control system;
- design, operation, technical characteristics, algorithms for the functioning of microprocessor control systems for various mechanisms and systems of the car;

be able to:

- analyze and evaluate the operation of automotive electronic control systems;
- develop control algorithms and switching programs for microprocessor control systems based on the LOGO programmable controller and LOGO!Soft Comfort software;

to possess a skill:

- developing control algorithms for various vehicle mechanisms and systems;
- writing and debugging control programs for the LOGO family of controllers and LOGO!Soft Comfort software.

3. Competencies developed: Apply knowledge of the design and operating principles of automated vehicle systems.

4. Requirements and forms for ongoing and midterm assessment: Individual laboratory assignments are defended orally and in writing, based on the questions provided in the guidelines. Tests are completed electronically on the Moodle platform. Credit is completed electronically on the Moodle platform.