

MATERIALS SCIENCE

(course title)

COURSE SYLLABUS ABSTRACT

Specialty: 1– 37 01 06 – Technical operation of cars

(speciality code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	2	3	2
Semester	4	5	4
Lectures, hours	34	8	8
Laboratory classes, hours	34	8	8
In-class test (semester, hours)	-	5 semester (2 hours)	4 semester (2 hours)
Exam, semester	4	5	4
Contact hours	68	18	18
Independent study, hours	52	102	102
Total course duration in hours / credit units	120/3	120/3	120/3

1. Course outline

While studying the discipline, students will learn how to select structural materials of a certain composition and functional properties during maintenance and repair of cars. They will gain knowledge about the structure and properties of metals, alloys and other structural materials, as well as about the methods of their preparation and processing to obtain parts with specified properties and configuration.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: methods for studying the structure and properties of materials;

- fundamentals of theory and practice of thermal, chemical-thermal, thermomechanical processing of metal materials;
- practical ways to study the structure, properties of materials and their heat treatment;
- modern materials and effective methods of their heat-hardening treatment.

be able to: rationally use reference literature on the choice of materials, technologies of their processing, providing the necessary indicators of properties;

- correctly determine the application areas of a particular material;
- assign methods and modes of structure-changing processing that ensure optimal properties of materials when working under certain operating conditions.

possess: methods of studying the structure and properties of materials, as well as

- methods for determining the structure and properties of materials;
- the practice of using various materials.

3. Competencies

BOD 4 Select structural materials of a certain composition and functional properties during maintenance and repair of cars.

4. Requirements and forms of midcourse evaluation and summative assessment The defense of laboratory work is carried out orally.

The exam is conducted in writing in the form of answers to test questions.