FUNDAMENTALS OF ELASTICITY THEORY
(course title)

COURSE SYLLABUS ABSTRACT

6-05-0715-03 «Cars, tractors, mobile and technological systems»
(speciality code and name)
"Computer engineering"
(specialisation code and name)
6-05-0715-07 «Operation of ground transport and technological machines and complexes»
(speciality code and name)
«Technical operation of cars and car service»
(specialisation code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	**2**	**3**	**2**
Semester	4	5	4
Lectures, hours	16	4	4
Laboratory classes, hours	34	6	6
Pass/fail, semester	4	5	4
Contact hours	50	10	10
Independent study, hours	58	98	98
Total course duration in hours / credit units	108/3		

1. Course outline
The purpose of the academic discipline is to form specialists who can reasonably and effectively apply a set of knowledge, skills and abilities in the calculation and analysis of the stress-strain state (SSS) of parts and structures used in transport and technological machines.

2. Course learning outcomes
   Upon completion of the course, students will be expected to
   know: the basic equations of the theory of elasticity and the provisions of the mechanics of a deformable body; basic relations of the plane problem of elasticity theory in Cartesian and polar coordinate systems; approximate (numerical and analytical) methods for solving problems; statement of the FEM problem; the main stages of solving the FEM problem; software that implements the FEM
   be able to: solve plane problems of elasticity theory by various methods; carry out typical calculations and determine the type of stress state of the body; to form boundary conditions for numerical methods of solution; simulate SSS of metal structures using application software; analyze the results of the calculation of metal structures.
   to possess a skill: determination of stresses, deformations and displacements in beams, plates; using tools of approximate methods in solving basic problems of the theory of elasticity; use of application software that implements the finite element method for analyzing the stress-strain state of metal structures when solving design problems.

3. Competencies: for specialty 6-05-0715-03 – Carry out calculations for strength, rigidity, stability of structures,

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4. Requirements and forms of current and intermediate certification.

The current certification form is oral. The intermediate certification form is oral.