FINITE ELEMENT METHODS FOR CALCULATION OF WELDED STRUCTURES

COURSE SYLLABUS ABSTRACT

Specialty 7-06-0714-02 Innovative technologies in mechanical engineering
Profiling Welding technologies

Advanced higher education

	STUDY MODE	
	full-time	Part-time
Course	1	2
Semester	2	3
Lectures, hours	34	8
Practical (seminar) classes, hours	16	4
Pass/fail, semester	2	3
Contact hours	50	12
Independent study, hours	58	96
Total course duration in hours / credit units	108/3	108/3

1. Course outline

The purpose of the academic discipline is for students to gain knowledge in the field of calculations of welded structures based on finite element methods (FEM).

The objectives of the academic discipline are the formation of academic, social, personal and professional competencies of a future specialist in the field of design and production of welded structures.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- basic finite element calculation methods;
- main stages of solving the FEM problem
- basic principles of working in software products that perform FEM calculations;

be able to:

- select software for solving problems solved using FEM;
- apply the acquired knowledge in practice, performing the necessary calculations;
- analyze fields of stress, deformation, displacement and thermal fields.

to possess a skill:

– FEM calculation skills;
– knowledge to make the necessary decisions when using FEM.

3. Competencies

Mastering this academic discipline should ensure the formation of the following competencies: CK-5 Know the basic techniques of finite element methods for calculating welded structures

4. Requirements and forms of midcourse evaluation and summative assessment

The following forms are used to diagnose competencies:

– oral;
– written;
- oral and written.