PRE-GRADUATE PRACTICE

ANNOTATION
TO THE INTERNSHIP PROGRAM OF A HIGHER EDUCATION INSTITUTION

Specialty 1-36-01 06 - Equipment and technology of welding production

	Form of higher education		
	Full-time (full-time)work	Part	- time Part-time abbreviated
Course	4	5	4
Semester	8	10	8
Total practice hours / credits	162/4/4		

1. Summary of the internship program (goals and objectives of the internship). The purpose of the internship is to acquire students ' professional skills in the specialty, consolidate, expand and systematize the knowledge gained in the study of special disciplines.

The content of pre-graduate practice is determined by the program of practice, the need to study methods for solving technical, economic, creative, managerial and other tasks. Full-time and part-time students take pre-graduate internships in their final year. During the pre-graduate practice, students perform the work provided for by the official duties of the qualification characteristics of the Unified Qualification Directory of Employees ' positions for the corresponding position.

2. Learning outcomes. As a resultof mastering the pre-graduate practice at the enterprise , the student must:

facts: the physical essence, types and methods of pressure welding, to be able to develop technology for the welding of metals and alloys in terms of production and apply the methods of quality control of welded joints; methods of testing of welded structures, materials and welded joints, to be able to create a test program within the framework of the assessment of technological processes of welding, welding certification, welding and filler materials; know the principles, types of CAD software, fundamentals of computer-aided design welding technology, computer-integratede database, raschets methods determination of physical-mathematical and operational properties; basic methods of testing and diagnosis of welding equipment; basic principles of process control and equipment when welding.

be able to choose equipment, fusion welding, the power sources and welding modes, ensuring the efficient flow of the welding process and the quality of welded joints; to execute the plan welding shop, land, taking into account the conditions of production, to count the manufacturing program mode, foundations of time of operation of the equipment; choose rational schemes and modes of welding, hardening and heat treatment of welded joints of special steels and alloys to evaluate the physico-mechanical and operational properties of materials and products.

to possess scientific and technical terminology with a degree in state and foreign languages; basic methods, ways and means of obtaining, storing, processing information, skills of work with the computer as a means of information management, to be able to work with information in computer networks; techniques of design and analysis of welding and Assembly of technological equipment with modern computer-aided design.

3. Formed competencies: CC-6 - Be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems.

BOD-4 - Possess basic methods, methods and means of obtaining, storing, processing information, skills of working with a computer as a means of managing information, and be able to work with information in computer networks.

BOD-5 - Master the methods of graphic representation of objects on a plane and in space, the requirements of a Unified system of design documentation; create drawings of technological equipment parts; draw up and develop design documentation.

BOD-7 - Possess the physical basics of welding methods, knowledge for solving theoretical and practical problems of obtaining welded joints of various metals and alloys, issues of technological weldability of metals and alloys.
BOD-8 - Master the technologies of fusion welding and thermal cutting of metals and alloys, know the equipment and issues of its operation and repair, welding materials and be able to choose the parameters of the welding mode that ensure the quality of welded joints.
BOD-9 - Know the physical nature, types and methods of pressure welding, be able to develop technology and equipment for welding metals and alloys in production conditions and apply quality control methods for welded joints.
BOD-10 - Possess calculation methods that confirm the operability of the designed products (machines, their components and mechanical parts) that meet the specified requirements, and skills in developing and executing design documentation.
BOD-14 - To know the basics of general hydraulics, the purpose, structure and principle of operation of hydraulic machines and hydraulic drives and their application in robotic welding systems.
BOD-15 - Possess нscientific and technical terminology in the specialty in the state and foreign languages.
BOD-16 - Be able to apply basic safety techniques, industrial sanitation, fire safety and methods of protecting production personnel, the public and the environment from the possible consequences of accidents, natural disasters, man-made disasters.
SK-1 - Master the basics of modern technologies for the production of ferrous and non-ferrous metals and alloys, methods for manufacturing machine parts by casting, pressure processing, welding, cutting.
SK-4 - Be able to analyze the production processes of the enterprise, evaluate the activity of the production cycle, find ways to optimize it; organize the work of small teams of performers to achieve their goals, interact with specialists in related professions.
SK-5 - Know мthe methods of conducting tests of welded structures, materials and welded joints, be able to draw up test programs within the framework of certification of technological processes of welding, certification of welding and welding additives.
SK-6 - Be able to choose fusion welding equipment, power sources and welding modes that ensure efficient welding processes and high-quality welded joints.
SK-7 - Possess technologies of production of welded structures for various purposes, auxiliary equipment, principles of calculation of structures and equipment for strength and manufacturability, taking into account the specifics of production.
SK-8 - Know the principles of construction, types of CAD software, possess the basics of computer-aided design of welding technologies, computer-integrated databases, calculation methods for determining the physical, mechanical and operational properties of products.
SK-9 - Masterthe methods of designing and calculating welding and assembly technological equipment using modern automatic design systems.

SK-10 - Master the basic design principles, methods of designing and calculating welded structures, using modern computer-aided design systems.
SK-11 - Be able tocomplete the layout of the welding shop, site, taking into account the production conditions, calculate the production program, operating mode, funds for equipment operation time.
SK-12 - Master the principles of complex mechanization and flexible automation of welding production, non-standardized equipment and technological equipment using robotic systems.
SK-13 - Know the basic methods of testing and diagnostics of welding equipment.
SK-14 - Know the theoretical foundations of soldered and micro-welded joints, be able to choose the design of the joint, determine the method and develop the technological process of soldering or micro-welding.
SK-15 - Know the basic principles of process and equipment management in welding.
SK-16 - To know the main methods of assessing the quality of welded joints, types and causes of defects in welded joints and methods of their prevention.

SK-17 - Be able to search, organize and analyze information on the development of new technologies, equipment and technological equipment for welding processes.
SK-18 - Be able to choose rational schemes and modes of welding, hardening and heat treatment of welded joints of special steels and alloys, evaluate the physical, mechanical and operational properties of materials and products.
4. Forms of current certification: differentiated credit (oralform). In order to be admitted to the test, the student must submit a practice report in accordance with the curriculumоставить отчет, which includes an individual task, as well as a practice diary with a feedback from thehead of the enterprise.