

Year	2011/2012
Faculty (institute)	Welding
Department	Surface Engineering
Field of study	6.050504 Welding
Speciality	Technology and Equipment of Restoration and Wear Resistance Increase of Machines and Constructions
Degree	bachelor
Qualification level	bachelor

### First Year

First Semester		Second Semester	
Title	Credits	Title	Credits
Foreign language	1,5	Foreign language	1,5
History of Ukraine	3	Ukrainian language: Professional communications	2
Mathematics - 1: Analytic geometry and differential calculus	7	Mathematics - 2: Integral calculus and differential equations	5
Chemistry	5	Physics - 2: Electricity and magnetics	4
Physics - 1: Mechanics and molecular physics	6	Engineering and computer graphics - 2: Engineering graphics	2
Engineering and computer graphics - 1: Descriptive geometry	3	Information and computer science - 2: Computer science software	3
Information and computer science - 1: Computer science hardware	3		
		Technology of metal production and physical metallurgy	3
		Engineering mechanics	5
		Surface physical-chemical processes	3
Introduction to speciality	2		
<b>Total</b>	<b>30,5</b>	<b>Total</b>	<b>28,5</b>

### Second Year

First Semester		Second Semester	
Title	Credit	Title	Credit
Foreign language	1,5	Foreign language	1,5
Philosophy	3		
Mathematics - 3: Numerical and functional series	4	Electrical engineering - 2: Electronic and circuit engineering	2
Engineering and computer graphics - 3: Computer graphics	1,5	Strength of materials - 2: Methods of strength analysis, stiffness, steadyness and shift calculation	2,5
Electrical engineering - 1: Electric and magnetic circuits	4	Ecology	2
Strength of materials - 1: Theory of mode of deformation	4		
Welding physics - 1: Welding heat sources and thermal processes	4,5	Welding physics - 2: Welding physical-chemical and metallurgical processes	3
Machine parts - 1: Interchangeability, standardization and technical measurement	1,5	Fusion welding technology and equipment - 1: Fusion welding processes and equipment	3
		Welding power supplies	3,5
		Gas-thermal material treatment	3,5
		Fundamentals of sputtering and welding deposition - 1: Fundamentals of welding deposition	4
Physical metallurgy and heat treatment of welded joints	5	Triboengineering	5
Repair welding	3	Psychology	2
<b>Total</b>	<b>32</b>	<b>Total</b>	<b>32</b>

### Third Year

First Semester		Second Semester	
Title	Credits	Title	Credits
		History of Ukrainian culture	2
Machine parts - 2: Machine parts	5,5	Machine parts - 1: Machine parts	1
Fusion welding technology and equipment - 2: Fundamentals of constructional materials' welding	4	Pressure welding technology and equipment	3,5
Fundamentals of sputtering and welding deposition - 2: Fundamentals of sputtering	4	Work practice	4,5
Safety of labour and life activities	1,5		
Welding tensions and deformations	4		
Economics of industrial production planning	3	Economics of industrial production planning	3
Foreign language	1,5	Foreign language	1,5
Theoretical fundamentals of surface engineering	3,5	Theoretical fundamentals of surface engineering	4
History of science and technics	2	Equipment and technology of gas-thermal coating production	3,5
CPU controlled systems for coating processes	4	Restoration of machine parts	3,5
		Science of law	2
		Computer data systems of typical technologies and devices	4
<b>Total</b>	<b>33</b>	<b>Total</b>	<b>32,5</b>

### Fourth Year

First Semester		Second Semester	
Title	Credits	Title	Credits
Foreign language	2		
Political science	1,5		
Pressure welding technology and equipment	1	Pregraduation practice	4,5
Economics and industrial engineering of welding production	3	Diploma project (work) performance	9
Quality control	4	Technology and equipment for welding deposition	3,5
Automated control in welding	4	Restoration of machine parts	3,5
Technology and equipment for welding deposition	3,5	Equipment and technology of vacuum-condensational coating	5
Restoration of machine parts	3,5	Coated surfaces' mechanical treatment	4
Equipment and technology of gas-thermal coating production - 1: Technology of gas-thermal coating production	3	Marketing of small-scale enterprises	3
<b>Total</b>	<b>25,5</b>	<b>Total</b>	<b>32,5</b>

- humanities, social and economical courses
- mathematical, natural and scientific courses
- professional and practical courses
- elective courses