

## Subject card

Welding repair technologies, PG 00055249							
Management and Production Engineering							
October 2022		Academic year of realisation of subject			2024/2025		
first-cycle studies		Subject group			Optional subject group Subject group related to scientific research in the field of study		
Full-time studies		Mode of delivery			at the university		
3		Language of instruction			Polish		
6		ECTS credits			2.0		
general academic profile		Assessment form			assessment		
Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						Ship	
Subject supervisor dr hab. inż. Jacek Tomków							
Teachers							
Lesson type	Lecture	Tutorial	Laboratory		t	Seminar	SUM
Number of study hours	15.0	0.0	15.0	0.0		0.0	30
E-learning hours inclu	ıded: 0.0						
Learning activity				Self-study		SUM	
Number of study hours	30	3.0			17.0		50
Students learn basic welding techniques used in the repair and regeneration of metal structures. They perform practical experiments showing how to use the learned techniques. Students choose methods useful for the repairs and regenerations of particular structures and materials.							
Course outcome		Subject outcome			Method of verification		
[K6_K01] feels the need for self-realization by learning throughout life, is looking for modern and innovative solutions in their actions, is able to think creatively and act in an entrepreneurial way		The student is able to recognize structural damage that requires repair and regeneration.			[SK5] Assessment of ability to solve problems that arise in practice		
[K6_W06] has knowledge of the life cycle of products and mechanical devices and systems, in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control		The student learns about various repair and regeneration methods used in various structures made of different materials.			[SW1] Assessment of factual knowledge		
[K6_U02] has the ability of self- learning and expanding knowledge in a specialized field of engineering production					[SU3] Assessment of ability to use knowledge gained from the subject		
Failure and wear of materials, pad welding, thermal spraying, welding of cast iron, repairs of different structures (e.g. marine and energy industry, offshore structures), temper bead welding technique, underwater welding.  Laboratories: Surfacing with various methods (MMA, MIG / MAG, TIG), thermal spraying, repairing methods for cast irons, temper bead welding technique, underwater welding.							
	Management and Pro October 2022  first-cycle studies  Full-time studies  3  6  general academic pro Institute of Manufacturechnology Subject supervisor Teachers Lesson type Number of study hours E-learning hours incluture and the repairs and reperform practical experiments and act in an entreprofuctions, is able to the and act in an entreprofuction devices are the development of reproduction devices are the development of reproduction devices are control  [K6_W06] has knowled life cycle of products mechanical devices are the development of reproduction devices are control  [K6_U02] has the ableaming and expand knowledge in a specengineering production devices are control  [K6_U02] has the ableaming and expand knowledge in a specengineering production devices are control  [K6_U02] has the ableaming and expand knowledge in a specengineering production devices are control  [K6_U02] has the ableaming and expand knowledge in a specengineering production devices are control  [K6_U02] has the ableaming and expand knowledge in a specengineering production devices are control.	Management and Production Engine October 2022  first-cycle studies  Full-time studies  3  6  general academic profile  Institute of Manufacturing and Mater Technology  Subject supervisor  Teachers  Lesson type  Lecture  Number of study hours  E-learning hours included: 0.0  Learning activity  Participation in classes included plan  Number of study hours  Students learn basic welding technic perform practical experiments show for the repairs and regenerations of  Course outcome  [K6_K01] feels the need for self-realization by learning throughout life, is looking for modern and innovative solutions in their actions, is able to think creatively and act in an entrepreneurial way  [K6_W06] has knowledge of the life cycle of products and mechanical devices and systems, in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  [K6_U02] has the ability of self-learning and expanding knowledge in a specialized field of engineering production  Lectures:  Failure and wear of materials, pad w structures (e.g. marine and energy in underwater welding.  Laboratories:  Surfacing with various methods (MM)  Laboratories:  Surfacing with various methods (MM)	October 2022  Academic y realisation  first-cycle studies  Subject gro  Full-time studies  Assessmer  Language of ECTS cred  general academic profile  Institute of Manufacturing and Materials Technology  Subject supervisor  Teachers  Lesson type  Lecture  Lesson type  Lecture  Number of study hours  E-learning hours included: 0.0  Learning activity  Participation in didactic classes included in study plan  Number of study hours  Students learn basic welding techniques used in the perform practical experiments showing how to use for the repairs and regenerations of particular struct  Course outcome  [K6_K01] feels the need for self-realization by learning throughout life, is looking for modern and innovative solutions in their actions, is able to think creatively and act in an entrepreneural way  [K6_W06] has knowledge of the life cycle of products and mechanical devices and systems, in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  [K6_W06] has knowledge of the life cycle of products and mechanical devices and systems, in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  [K6_U02] has the ability of self-learning and expanding knowledge in a specialized field of engineering production  Lectures:  The student is appropriate regeneration individual con and different self-learning and expanding knowledge in a specialized field of engineering production  Lectures:  Failure and wear of materials, pad welding, therma structures (e.g. marine and energy industry, offshounderwater welding.  Laboratories:  Surfacing with various methods (MMA, MIG / MAG	Academic year of realisation of subject first-cycle studies  Full-time studies  Mode of delivery  Language of instruction in diactic classes included in study plan in the repair and regeneration.  Students learn basic welding techniques used in the repair and regeneration.  Students learn basic welding techniques used in the repair and regeneration.  Students learn basic welding techniques used in the repair and regenerations, is able to think creatively and act in an entrepreneurial way in the field of machines parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  Lectures:  Management and Production Enalisation of subject outcome in the repair and regeneration.  Mode of delivery  Language of instruction  BCTS credits  Assessment form  Institute of Manufacturing and Materials Technology -> Faculty of Technology  Subject supervisor  Tutorial Laboratory  Itaboratory  Itaboratory  Itaboratory  Participation in didactic classes included in study plan  Number of study hours  Students learn basic welding techniques used in the repair and reperform practical experiments showing how to use the learned tecfor the repairs and regenerations of particular structures and materials in the repair and regeneration of particular structures and materials in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  [K6_U02] has the ability of self-learning and expanding the parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  [K6_U02] has the ability of self-learning and expanding the part and regeneration metituded in various structures with the development of machines and production devices and process control techniques for individual construction materials.	Academic year of realisation of subject first-cycle studies  Subject group  Full-time studies  Mode of delivery  Language of instruction  ECTS credits  general academic profile  Assessment form  Institute of Manufacturing and Materials Technology -> Faculty of Mechar Technology  Subject supervisor  Teachers  Lesson type  Lecture  Lesture  Lesson type  Lecture  Tutorial  Laboratory  Project  Number of study hours  Participation in didactic classes included in study plan  Number of study hours  Participation in didactic classes included in study plan  Number of study hours  Subject outcome  [K6_K01] feels the need for self-realization by learning throughout life, is looking for modern and innovative solutions in their actions, is able to think creatively and act in an entrepreneurial way mechanical devices and systems, in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  [K6_W06] has knowledge of the life cycle of products and mechanical devices and systems, in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control  [K6_W06] has the ability of self-learning and expanding knowledge in a specialized field of engineering production  The student learns about various repair and regeneration methods used in various structures made of different materials.  The student learns about various repair and regeneration methods used in various structures made of different materials.  The student learns about various repair and regeneration methods used in various structures made of individual construction materials, and different structures.	Management and Production Engineering	Management and Production Engineering  October 2022  Academic year of realisation of subject  Subject group  Optional subject group elatic research in the field research in the research in the field research in the field research in the field research in the research in the field resea

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Prerequisites and co-requisites					
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade		
	Tests	51.0%	50.0%		
	Laoratories	51.0%	50.0%		
Recommended reading	Basic literature	Jan Pilarczyk "Poradnik inżyniera Tom 1 Spawalnictwo".      Jan Pilarczyk "Poradnik inżyniera Tom 2 Spawalnictwo".			
	Supplementary literature	Zenon Aleksander "Spawalnicze metody napraw warstw powierzchniowych".			
	eResources addresses	Adresy na platformie eNauczanie:			
Example issues/ example questions/ tasks being completed	Description of surfacing processes.     Characteristics of thermal spraying.     Methodss of repairing cast iron.     Temper bead welding technique				
Work placement	Not applicable				

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