

Subject card

Date of commencement of study Space and Satellite Technologies Academic year of realisation of subject 2024/2025 Subject group Chipaton subject group in the field of study Full-time studies Subject group Chipaton subject group in the field of study Full-time studies Mode of delivery at the university Year of study 1 Language of instruction Polish Semester of study 1 ECTS credits 2.0		Maakatuaniaa in Caas	M. I. J. J. D.							
Date of commencement of studies	Subject name and code	Mechatronics in Space Applications, PG_00050012								
Education level second-cycle studies Subject group in the field of study Full-time studies Mode of delivery at the university Pear of study 1 Language of instruction Polish Polish Semester of study 1 Language of instruction Polish Polish Semester of study 1 Language of instruction Polish Polish Semester of study 1 Language of instruction Polish Semester of study 1 Semester of semester of study 1 Semester of study of Mechanical Engineering and Ship Technology Manager of Instruction 1 Semester 1 Subject supervisor 1 dr in 2. Mariusz Dabkowski 1 Semester 1 Subject supervisor 1 dr in 2. Mariusz Dabkowski 1 Semester 1 Subject supervisor 1 Seminar 1 Semi	-	·								
Mode of study Full-time studies Mode of lelivery Year of study 1 Language of instruction Semester of study 1 Learning profile Semester of study 1 Learning profile Semester of study 1 Learning profile Semester of study 1 Department of Mechanics and Mechatronics -> Faculty of Mechanical Engineering and Ship Technology Name and surname of lecturer (lecturers) Teachers Subject supervisor Teachers Tea	Date of commencement of studies	February 2025					2024/2025			
Year of study 1	Education level	second-cycle studies		Subject group						
Semester of study Learning profile Learning profile Learning profile Department of Mechanics and Mecharonics -> Faculty of Mechanical Engineering and Ship Technology Mame and surname of lecturer (lecturers) Lesson types and methods of instruction Lesson types and methods of instruction Learning activity and number of study hours Learning activity The aim of the course is to familiarize students with the concepts of mechatronics design of mechatronic designs and mechatronic products designed for space technologies, discussion of basic measurement systems and unechatronic products designed for messages associated with the use in mechatronic and optimization of the design of mechatronic wites for use in mechatronic systematization of messages associated with the computer simulation and optimization of the design of mechatronic wites in space applications. Learning outcomes Correct Subject outcome Evaluation of the design of mechatronic devices in space applications. Correct outcome In the student is able to estimate the cases of designing and implementing the engineering activities undertaken. Is able to propose improvements to existing engineering solutions in from the field of space and satellite technology. In the student is able to estimate the cases of designing and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and ultures. In the student has knowledge of mechatronics In the student has knowledge of mechatronic of mechatronics. In the student has knowledge of mechatronic of mechatronics and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures. In the student has knowledge of mechatronics and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures. Subject contents In the student has knowledge of mechatronics. In the student has	Mode of study	Full-time studies		Mode of delivery			at the university			
Learning profile General academic profile Assessment form assessment	Year of study	1		Language of instruction			Polish			
Conducting unit Department of Mechanics and Mechatronics -> Faculty of Mechanical Engineering and Ship Technology Name and surname of lecturer (lecturers) Teachers Lesson types and methods of instruction Lesson types and methods of instruction Learning activity and number of study hours Learning activity and number of study hours Learning activity and number of study hours The aim of the course is to familiarize students with the concepts of mechatronics design and mechatronic products designed for space technologies, discussion of basic measurement systems and fuels for use in mechatronics, systematization of messages associated with the use of computer simulation and optimization of the design of mechatronic devices in space applications. Learning outcomes Course outcome Kourse outcome Ko	Semester of study	1		ECTS credits			2.0			
Name and surname of lecturer (lecturers) Lesson types and methods of instruction Lesson types and methods of instruction Learning activity and number of study hours Learning activity Learning activity and number of study hours Learning activity The aim of the course is to familiarize students with the concepts of mechatronics design of mechatronics and mechatronic products designed for space technologies, discussion of basic measurement systems and rules for use or learning and optimization of the design of mechatronic devices in space applications. Learning outcomes Course outcome IKT_U00 Is able to estimate the costs of designing and implementing the engineering activities undertaken. Is able to propose improvements to existing engineering solutions in from the field of space and satellite mechatronics in space applications, as well as mechanical ethonology. IKT_W02 Has well-ordered and theoretically based knowledge of mechatronics who will be cost of mechatronics. In space and satellite mechanisms and structures. IKT_W03 Can analyse and the design of space mechanisms and structures. IKT_W03 Can analyse and the design of space mechanisms and structures. IKT_W03 Can analyse and the design of space mechanisms and structures. IKT_W03 Can analyse and the design of space mechanisms and structures. IKT_W03 Can analyse and the design of space mechanisms and structures. IKT_W03 Can analyse and the design of space mechanisms and structures. IKT_W03 Can analyse and the principles of professional ethics and respects the diversity of views and cultures. IKT_W03 Can analyse and the principles of professional ethics and respects the diversity of views and cultures. IKT_W03 Can analyse and the principles of professional ethics and respects the diversity of views and cultures. IKT_W03 Can analyse and the principles of professional ethics and respects the diversity of views and cultures. IKT_W03 Can analyse and cultures. IKT_W03 Can analyse and contents IKT_W03 Can ana	Learning profile	general academic profile		Assessment form			assessment			
Teachers	Conducting unit	Department of Mechanics and Mechatronics -> Faculty of Mechanical Engineering and Ship Technology						Technology		
Lesson types and methods of instruction Compared to the design of space and primization of the design of mechatronics in space applications, as well as mechanical technologies, and respects the diversity of views and cultures. Lesson type	Name and surname	Subject supervisor		dr inż. Mariusz Dąbkowski						
Number of study hours E-learning hours included: 0.0 D.0 D	of lecturer (lecturers)	Teachers		dr inż. Mariusz Dąbkowski						
Learning activity and number of study hours Learning activity Participation in didactic classes included in study Participation in consultation hours Participation Pa		Lesson type	Lecture	Tutorial	Laboratory	/ Project		Seminar	SUM	
Learning activity and number of study hours	of instruction	,	15.0	0.0	0.0	15.0		0.0	30	
Course outcome Subject outcome Course outcome Cou		E-learning hours included: 0.0								
The aim of the course is to familiarize students with the concepts of mechatronics design of mechatronics and mechatronic products designed for space technologies, discussion of basic measurement systems and fuels for use in mechatronics, systematization of messages associated with the use of computer simulation and optimization of the design of mechatronic devices in space applications. Course outcome	Learning activity and number of study hours	Learning activity	classes includ				Self-study		SUM	
and mechatronic products designed for space technologies, discussion of basic measurement systems and fuels for use in mechatronic of messages asociated with the use of computer simulation and optimization of the design of mechatronic devices in space applications. Course outcome			30		5.0	5.0			50	
[K7_U06] Is able to estimate the costs of designing and implementing activities undertaken. Is able to propose improvements to existing engineering solutions in from the field of space and satellite technology. [K7_W02] Has well-ordered and theoretically based knowledge of mechatronics in space applications, as well as mechatronics which is a group by solving the assigned in a group work in a group by solving the assigned interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and respects the diversity of views and co-requisites Subject contents	Subject objectives	and mechatronic products designed for space technologies, discussion of basic measurement systems and fuels for use in mechatronics, systematization of messages associated with the use of computer simulation								
Costs of designing and implementing the engineering activities undertaken. Is able to propose improvements to existing engineering solutions in from the field of space and satellite technology. [K7_W02] Has well-ordered and theoretically based knowledge of mechatronics in space applications, as well as mechanical technologies and the design of space mechanisms and structures. [K7_K03] Can analyse and implement assigned tasks while maintaining high technical standards. Is able to work and interact in a group, laking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures. Subject contents Cost of making a mechatronic improvement Subject passing criteria Cost of making a mechatronic improvement Subject passing criteria Cost of making a mechatronic Subject passing threshold Subject passing criteria Cost of making a mechatronic improvement Subject passing criteria Cost of making a mechatronic Subject passing threshold Subject passing criteria Cost of making a mechatronic improvement Subject passing threshold Cost of making a mechatronic Subject passing criteria Cost of making a mechatronic Subject passing threshold Cost of making a mechatronic Subject passing criteria Cost of making a mechatronic Subject passing threshold Cost of making a mechatronic Subject passing criteria Cost of making a mechatronic Subject passing criteria Cost of making a mechatronic Subject passing a mechatronic Subject passing a mechatronic Subject passing	Learning outcomes	Course outcome Subject outcome Method of verification								
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implement assigned tasks while maintaining high technical standards. Is able to work and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures. Subject contents - Prerequisites and co-requisites Assessment methods and criteria Subject passing criteria Passing threshold Percentage of the final grade foo.0%		[K7_W02] Has well-ordered and theoretically based knowledge of mechatronics in space applications, as well as mechanical technologies and the design of space mechanisms and								
Prerequisites and co-requisites Assessment methods and criteria Subject passing criteria Passing threshold Percentage of the final grade 100.0%	implement assigned tasks while maintaining high technical standards. Is able to work and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views		a group by solving the assigned							
Prerequisites and co-requisites Assessment methods and criteria Subject passing criteria Passing threshold Percentage of the final grade 60.0%	Subject contents	-								
Assessment methods and criteria Subject passing criteria Passing threshold Percentage of the final grade 100.0% 60.0%	Prerequisites and co-requisites									
and criteria 100.0% 60.0%	Assessment methods	Subject passing criteria		Passing threshold			Percentage of the final grade			
56.0% 40.0%	and criteria			100.0%						
				56.0%			40.0%			

Recommended reading	Basic literature	Literatura podstawowa
		Heimann B., Gerth W., Popp K.: Mechatronika. Komponenty metody przykłady. Warszawa: Wyd. Nauk. PWN 2001.
		Gawrysiak M.: Mechatronika i projektowanie mechatroniczne.
		Białystok: Wyd. Polit. Białostockiej 1997.
		Projektowanie mechatroniczne. Zagadnienia wybrane. (Red. T. Uhl). Kraków: Kated. Robotyki i Mechatroniki AGH 2006, 2007, 2008, 2010,
		2011.
	Supplementary literature	Schmidt D. (red.), Mechatronika, Warszawa 2002, REA
	oupplementary increasure	1. Odiffilat D. (red.), Meditationika, Warszawa 2002, NEA
		David G. Alciatore, Michael B. Histand, Introduction to Mechatronics and Measurement Systems (Engineering), Mc Graw-Hill, New York
		2003
		3. Tarnowski W., Podstawy Projektowania Technicznego, Warszawa 1997, WNT
		1397, WW1
		4. Niederliński A., Systemy i sterowanie, Warszawa 1983, PWN
		T. HIGGGIIII SKI 7., CYSIGITY I SIGICWAIIIC, VVAISZAWA 1300, I VVIV
		Wybrane zagadnienia analizy modalnej konstrukcji mechanicznych.
		(Red. T. Uhl). Kraków: Kated. Robotyki i Mechatroniki AGH 2005, 2006,
		2008, 2009, 2010
eResources addresses		Adresy na platformie eNauczanie:
Example issues/	-	
example questions/ tasks being completed		
Work placement	Not applicable	
Work placement		

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