

**I LEVEL REGULAR STUDIES MECHANICS and MACHINE BUILDING (W10-MBMP-000A-OSIW7) specjalność: MECHANICAL ENGINEERING DESIGN**

etap

1I-MBM-MEC	W	C	L	P	S	2I-MBM-MEC	W	C	L	P	S	3I-MBM-MEC	W	C	L	P	S	4I-MBM-MEC	W	C	L	P	S	5I-MBM-MEC	W	C	L	P	S	6I-MBM-MEC	W	C	L	P	S	7I-MBM-MEC	W	C	L	P	S																																																																																																																																																																																																																																																																														
Essential of Management (Podstawy zarządzania)						1						W10MBM-SI3071						15																																																																																																																																																																																																																																																																																																					
Block of humanistic courses						1						MBM-SI2W-MEC1						15																																																																																																																																																																																																																																																																																																					
Theory of Machines (Maszynoznawstwo)						1						W10MBM-SI3077						15						Programming in MATLAB (Informatyka podst.program. Matlab)						2						W10MBM-SI3084						30						Fundamentals of Materials Strength (Podstawy wytrzymałości materiałów)						1						W10MBM-SI3094						15																																																																																																																																																																																																																																																					
Ergonomics and Safety (Ergonomia i BHP)						1						W10MBM-SI3072						15						Engineering Graphics: Engineering Drawing (Grafika inż.-zapis konstr.)						1						2						W10MBM-SI3078						15						30						Statistics for Engineers (Statystyka inżynierska)						1						1						W10MBM-SI3085						15						15						Industrial Metrology (Metrologia przemysłowa)						1						W10MBM-SI3095						15						Computer Aided Machine Design I (Modelowanie komputerowe w projektowaniu)						1						W10MBM-SI3103						15																																																																																																																																																																													
Metrology principles (Podstawy metrologii)						1						W10MBM-SI3073						15						Engineering Materials Technology (Technol.materiałów inż.)						2						2						W10MBM-SI3079						15						15						Engineering Graphics 3D (Grafika inżynierska 3D)						2						W10MBM-SI3086						30						Drive Systems (Układy napędowe pojazdów)						1						1						W10MBM-SI3096						15						15						Vehicle Engineering (Budowa pojazdów samochodowych)						3						3						W10MBM-SI3104						30						Computer Aided Machine Design II (Modelowanie komputerowe w projektowaniu)						3						3						W10MBM-SI3111						30						Legal aspects of engineering activities (Uwarunkowania prawne działalności inżyniera)						1						1						W10MBM-SI3120						15						15																																																																																																					
Engineering Graphics: Descriptive Geometry (Grafika inż.-geom.wykr.)						1						2						W10MBM-SI3074						15						30						Thermodynamics (Termodynamika techniczna)						2						2						W10MBM-SI3080						30						15						Fluid Mechanics (Mechanika płynów)						2						1						W10MBM-SI3087						30						15						Fundamentals of Machine Design I E (Podstawy konstrukcji maszyn I)						3						2						2						W10MBM-SI3097						30						15						30						Tribology (Podstawy tribologii)						2						2						W10MBM-SI3105						15						15						Offroad Vehicles Engineering (Inżynieria pojazdów przemysłowych)						2						2						1						W10MBM-SI3112						30						30						15						Production System Organisation (Podstawy organizacji produkcji)						2						W10MBM-SI3121						30						2																																															
Information Technologies (Technologie informacyjne)						2						W10MBM-SI3075						30						Fundamentals of Materials Science (Podstawy materiałoznawstwa)						2						1						W10MBM-SI3081						30						15						Materials Science E (Materiałoznawstwo II)						3						2						W10MBM-SI3088						30						15						Theory of Mechanisms and Manipulators E (Teoria mech.i manip.)						2						3						W10MBM-SI3098						30						30						Hydraulic, Hydrotronic and Pneumatic Systems (Hydros. ukl.nap.)						1						1						W10MBM-SI3106						15						15						Hydraulic Drive Systems E (Napęd hydrauliczny)						2						2						1						W10MBM-SI3113						30						30						15						Polymers in Engineering (Tworzywa sztuczne konstrukcyjne)						3						W10MBM-SI3122						30						3																																																																							
Chemistry (Chemia)						2						W10MBM-SI3076						30						Mechanics I (Mechanika I)						2						2						W10MBM-SI3082						30						30						Mechanics II E (Mechanika II)						2						2						W10MBM-SI3089						30						30						Metrology (Metrologia wielkości geometrycznych)						1						1						W10MBM-SI3099						15						15						Finite Elements Method (Metoda elementów skończonych)						1						2						W10MBM-SI3107						15						30						Internal Combustion Engines (Silniki spalinowe)						1						1						W10MBM-SI3114						15						15						Vehicles Loading Modelling (Modelowanie obciążeń pojaz. samoch.)						2						2						W10MBM-SI3123						15						15																																																																													
Algebra A E (Algebra A)						2						2						W13MBM-SI3004						30						15						Ecology (Ekologia)						1						W10MBM-SI3083						15						Polymers I (Tworzywa sztuczne)						2						1						W10MBM-SI3090						30						15						Chipless Processes -Plastic Forming (Techn.wytw.-przerób.plast.)						2						1						W10MBM-SI3100						15						15						Fundamentals of Machine Design II E (Podstawy konstrukcji maszyn II)						2						3						W10MBM-SI3108						30						30						Carrying Structures (Ustroje nośne)						1						2						W10MBM-SI3115						15						30						Selectable Courses (Blok wybieralny)						1						W10MBM-SI3116						15						15						Safety of machines and technological processes E (Bezpiecz.masz.i proc.technol.)						2						1						W10MBM-SI3116						15						15						Fundamentals of Exploitation and Repair (Podst.eksploat. i remon. masz.)						2						1						W10MBM-SI3124						30						15						2					
Mathematical Analysis 1A E (Analiza matematyczna 1A)						5						3						W13MBM-SI3005						30						30						Electrical Engineering (Elektrotechnika)						2						W05MBM-SI3003						30						Electrical Engineering (Elektrotechnika)						1						W05MBM-SI3004						15						Chipless Processes -Welding Metallurgy (Techniki wytw.-spaw.)						2						1						W10MBM-SI3101						15						15						Selectable Courses (Blok wybieralny)						1						W10MBM-SI3101						15						15						Fundamentals of machines and technological processes E (Bezpiecz.masz.i proc.technol.)						2						1						W10MBM-SI3116						15						15						Fundamentals of Exploitation and Repair (Podst.eksploat. i remon. masz.)						2						1						W10MBM-SI3124						30						15																																																																																															
Physics 1A E (Fizyka 1A)						3						2						W11MBM-SI3002						30						15						Elements of Mathematical Analysis E (Elementy analizy matematycznej 2)						2						2						W13MBM-SI3006						15						15						Chipless Processes -Casting (Techniki wytwarzania - odlewnictwo)						2						1						W10MBM-SI3091						15						15						Strength of Materials E (Wytrzymałość materiałów)						2						2						W10MBM-SI3102						30						15						Fundamentals of Automatic Control E (Podstawy automatyki)						2						2						W10MBM-SI3109						30						30						Manufacturing Systems CNC (Maszyny technologiczne CNC i roboty)						1						1						1						W10MBM-SI3117						15						15						15						Management in production (Zarządzanie w produkcji)						1						W10MBM-SI3125						15						1																																																											
Basic physics laboratory (Laboratorium podstaw fizyki)						2						W11MBM-SI3002						15						Electronics (Elektronika)						2						W12MBM-SI3002						30						Fundamentals of Materials Strength (Podstawy wytrzymałości materiałów)						2						1						W10MBM-SI3092						30						15						Sport (Zajęcia sportowe)						0						SWF-S00001						30						Manufacturing Processes - Machining E (Tech.wytw.-obr.ubyt.)						2						2						W10MBM-SI3110						45						30						Introduction to diploma dissertation (Wstęp do pracy dyplomowej)						3						W10MBM-SI3118						15						Thesis, Seminar (Seminarium dyplomowe)						1						W10MBM-SI3126						15																																																																																																																													
Block of humanistic courses						2						MBM-SI1W-MEC1						30						Sport (Zajęcia sportowe)						0						SWF-S00001						30						Ordinary Differential Equations (Równania różniczkowe zwyczajne)						1						1						W10MBM-SI3093						15						15						Foreign Language (Języki obce)						2						SJO-SI0001						60						Foreign Language (Języki obce)						3						SJO-SI0002						60						Professional Training (praktyka)						3						W10MBM-SI3119						15						Thesis: Final Engineering project (praca dyplomowa)						12						W10MBM-SI3127						15																																																																																																																																									
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30	ECTS	19	9	2	0	0	0	30	ECTS	19	4	5	2	0	0	30	ECTS	15	5	5	5	0	0	30	ECTS	13	4	8	5	0	0	30	ECTS	13	3	7	7	0	0	30	ECTS	9	0	6	8	1	6	30	ECTS	13	0	1	3	1	12																																																																																																																																																																																																																																																																
330	L.godz.	225	90	15	0	0	0	405	L.godz.	255	45	45	30	0	30	405	L.godz.	195	75	60	75	0	0	420	L.godz.	150	75	105	60	0	30	420	L.godz.	180	60	90	90	0	0	345	L.godz.	120	0	90	105	15	15	225	L.godz.	150	0	15	30	15	15																																																																																																																																																																																																																																																																
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program obowiązuje od roku akad. 2023/2024

Block of humanistic courses		Block of humanistic courses	
MBM-SI1W-MEC1		MBM-SI2W-MEC1	
Introduction to Philosophy (Wstęp do filozofii)		Intellectual Property Law (Ochrona własności intelektualnej)	
2		1	
W08MBM-SI0002	30	W10MBM-SI3129	15
Military technology in armed conflicts		Patent and copyright	
2		1	
W10MBM-SI3128	30	W08MBM-SI0003	15

Selectable Courses	
MBM-SI7W-MEC1	
Biomedical Engineering	
2	
W10MBM-SI3149	15
Technique in Medicine	
2	
W10MBM-SI3150	15

Selectable Courses	
MBM-SI5W-MEC1	

W10MBM-SI3130	FEM analysis of strongly nonlinear applications in the MSC.MARC package
W10MBM-SI3131	3D Engineering Graphics - SolidWorks
W10MBM-SI3132	Dimensional and shape inspection with GOM Inspect and Solidw
W10MBM-SI3133	Computer-aided manufacturing in the CAD-CAM
W10MBM-SI3134	Solid and surface modeling in CATIA (or CREO) system
W10MBM-SI3135	Numerical modelling
W10MBM-SI3136	Engineering calculations with usage of spreadsheet
W10MBM-SI3137	Geometry modelling and drawing creation with PTC Creo Parametric (formerly Pro/Engineer)
W10MBM-SI3138	Planning high speed machining with Inventor HSM
W10MBM-SI3139	Designing injection moulding and die casting tools in Solidworks
W10MBM-SI3140	Computer Aided Design of heavy machinery assemblies (Inventor, AutoCAD)
W10MBM-SI3141	Solving mechanics problems using Abaqus
W10MBM-SI3142	Design techniques in solidworks
W10MBM-SI3143	Creating technical drawings in Solidworks
W10MBM-SI3144	Advanced functions and programming in Microsoft Excel
W10MBM-SI3145	Advanced methods of modeling and analysis in CAD / FEM systems
W10MBM-SI3146	Managing configurations and building parameterized libraries with Solidworks and Microsoft Excel
W10MBM-SI3147	Advanced Computer Aided Engineering in the Catia system
W10MBM-SI3148	Computer analysis of measurements data