[Bial	ystok U	App niversity	endix No 1 t of Techno	o the Directive No 915/. Dogy	2019 of the Rector o	f BUT	
Field of study		Auto	matic	Contro	l and R	obotics		Degree level and programme type	full-time Bache degree	lor's	
Specjalization /			COI	nmon s	ubject			Study profile	general acade	mic	
								Course code	MYARS0100)1	
Course name			M	athema	itics I			Course type	obligatory		
Forms and	L	С	LC	Р	SW	FW	S	Semester	<u> </u>		
number of hours	45	45	0	0	0	0	0	No. of ECTS credits	8		
Entry			•	•			•		•		
Course objectives	Acquainting with the basic laws of logic. Acquainting with the basics of differential and integral calculus of functions of one variable and preparation for their use in the further education cycle. Ability to analyze the properties of functions of one variable based on boundaries and derivatives. Acquainting with the basics of vector calculus and methods of linear algebra and preparation for using them in solving engineering problems.										
Course content	Lecture and classes: Elements of mathematical logic. The function of one variable and its properties. Cyclometric functions.Sequences and numerical series. Number e. Limit and continuity of a function. Derivative of a function. Monotonicity and extremes. Power series, Taylor series and Maclaurin series. The indefinite integral and methods of its determination (integration by parts and by substitution, integration of rational and trigonometric functions). Definite integral and its geometrical applications. Improper integral. Complex numbers, exponentiation and the roots of complex numbers. Algebraic, trigonometric and exponential form of a complex number. Vector calculus on the plane and in space. Matrix algebra. Determinant, rank of matrices. Systems of linear equations (Cramer formulas, Gauss elimination). Eigenvectors and eigenvectors of the matrix. Functions of several variables. Partial derivatives of the 1st order of multivariable functions.										
Teaching methods	Informa	Informative-problem lecture; Classes;									
Assessment method	Leo Cla	cture: exa sses: tw	am o tests								
Symbol of					Learning	g outcomes			Reference to the le	arning	
LO1	knows, one var	understa riable to	ands an the anal	d can a _l ysis of t	oply the	principles	s of differer	ntiating the function of	AR1_W02 AR1_U0)2	
LO2	underst	tands an	d correc	tly appli	es the la	aws of log	ic in the rea	asoning	AR1_W02 AR1_U)2	
LO3	knows	and can	apply th	e basics	s of vecto	or, matrix	, algebra of	f complex numbers	AR1_W02 AR1_U)2	
LO4	knows calculat	and can tions	apply t	ne laws	of the i	ntegral ca	alculus of c	one variable in simple	AR1_W02 AR1_U)2	
Symbol of learning outcome			N	lethods of	assessin	g the learni	ng outcomes		Type of tuition duri the outcome is as	ng which sessed	
LO1	Lecture	: exam;	Classes	: two tes	sts;				W C		
LO2	Lecture	: exam;	Classes	: two tes	sts;				W C		
LO3	Lecture	: exam;	Classes	: two tes	sts;				W C		
LO4	Lecture	: exam;	Classes	: two tes	sts;				W C		
	1.0.04	ا ا		Student wo	rkload (in h	ours)			No. of hours	;	
	Lecture	attenda	nce						45		
		s attenda			المراجع وم	nation in	the current		45		
	Prepara	ation for	the lectl	ire exan	n; partici	pation in	the exam		58		
Calculation	Prepara	ation for							38		
	Prepara	ation for	classes	complet	ion .		(. II. '	de estelo (9		
	Particip	ation in t	teacher-	student	session	s related	to the mod		5		
				0	الحدا م			TOTAL	200	FOTO	
		Student	urkland a	Quantita	uve indicato	JIS irect teachar	narticipation		Hours 07	20	
			sonnoau - S Ctud	ant worklos	d - practica	l activitios	μαι ιισιματίθη		97 07	3,9	
			Jude	ant workiud	a - practica	1 00111100			51	5,5	

 Basic references Swokowski E. W., Calculus with analytic geometry. Prindle, Weber and Schmidt Zill D. G., Differential Equations, Thomson, 2005. 	Science Books, 2003. , 1983.
Organisational unit conducting the course	Date of issuing the programme
Author of the programme dr hab. Ewa Pawłuszewicz, prof. PB	2019-09-23

				Bial	/stok Ui	App niversitv	of Techno	o the Directive No 915/20 Ioav	J19 of the Rector of BUI			
		• •	4					Degree level and	full-time Bachelor's			
Field of study		Auto	omatic	Contro	and R	obotics		programme type	degree			
Specjalization / diploma path			COI	nmon s	ubject			Study profile	general academic			
Course name	-	Tochnic	al drawi	na in al	octrical	onginog	rina	Course code	MYARS01002			
Course name		Technica		ng in en	ectrical	enginee	ing	Course type	obligatory			
Forms and	L	С	LC	Р	SW	FW	S	Semester	1			
of tuition	15	0	0	30	0	0	0	No. of ECTS credits	3			
Entry requirements							-					
Course objectives	Obtaining knowledge in the field of mapping and dimensioning of parts of electrical and electronic equipment and preparation of technical documentation of the electrical part of the project. Developing skills in drawing electrical and electronic components and devices, as well as their connections, electrical and assembly diagrams. Acquainting with legal acts, standardization and rules of preparing documentation used in electrical engineering and industrial automation. Acquiring the ability to read and perform freehand and schematic drawings, including preparation of printouts and technical reports.											
Course content	Lecture: The course of the design process in the field of electromechanics, electrical engineering and industrial automation. Technical documentation and its role in the investment process. Method of creating electrical technical documentation. Legal acts and standardization in the scope of creating technical documentation of the electrical part of the project. Principles of technical electrical drawing and electromechanical parts. Types of electrical diagrams. Rules for preparing assembly diagrams. Methods for preparing printouts and reports. Project: Creating sketches. Projection of electromechanical parts in projections. Creating power circuit diagrams. Creating control circuit diagrams. Creating operator panel diagrams Creating assembly diagrams Circuit design with PLCs.											
Teaching	Informa	Informative-problem lecture: Project classes										
Assessment method	Lecture: one test Project: evaluation of project completion, current progress in project completion, discussion and activity during the classes											
Symbol of learning outcome	Learning outcomes Reference to the learning outcomes outcomes Reference to the learning											
LO1	has kn electroi	owledge mechani	of the ι cal elem	use of ei ents and	ngineerii 1 industr	ng graph ial autom	ics elemen ation	ts for mapping spatial	AR1_W07			
LO2	has kno the elec	owledge ctrotechr	of the ap nical part	oplication and ind	n of the lustrial a	principle: utomatio	s of electric n	al technical drawing in	AR1_W07			
LO3	can re control	produce diagram	electron s	nechanio	cal parts	and dra	aw assemb	ly, power supply and	AR1_U06			
LO4	can pre automa	epare teo ation	chnical d	ocumen	tation in	the elec	tromechani	cal part and industrial	AR1_W07 AR1_U06			
Symbol of learning outcome			Ν	lethods of	assessing	g the learni	ng outcomes		Type of tuition during which the outcome is assessed			
LO1	Lecture	e: one tes	st;						W			
LO2	Lecture	e: one tes	st;						W			
LO3	Project	:: evaluat sion and	tion of p activity o	roject co during th	ompletio e classe	n, curren s:	t progress	in project completion,	Р			
LO4	Lecture project	e: one te complet	est; Proje ion, disc	ect: eval	uation of ind activ	of project ity during	completion the classe	n, current progress in s;	W P			
		attenda	ince	Student WO	iriuau (in h	ours)			15			
	Project	attenda							30			
	Prenar	ation for	lecture t	est(c)					5			
Calculation	Prenar	ation for	nroiect c	235566					6			
Galoulution	Workin	a on proi	jects (inc	ludina r	renarati	on of pre	sentations)		12			
	Prenar	ation for	nroiecte	comnlet	ion		55110115/		2			
	Particip	pation in	teacher-	student	session	s related	to the modu	ule subject	5			

	TOTAL	75								
	Quantitative indicators	Hours	ECTS							
	Student workload - activities that require direct teacher participation	50	2							
	Student workload - practical activities	55	2,2							
Basic references	1. Systemy elektronicznej pomocy programów Autodesk Autocad Electrical, IGE XAO SEE Electrical, ProfiCAD.									
	2. Sapiński T., Michel K., Rysunek techniczny elektryczny, WNT, Warszawa 1987.									
	3. Michel T., Sapiński K., Czytam rysunek elektryczny. WSiP, Warszawa 1999.									
	4. PN-79/E-01244 Rysunek techniczny elektryczny. Klasyfikacja. Nazwy i określenia.									
	5. PN-EN 61082-1:2006 (U) Przygotowanie dokumentów stosowanych w elektrotechnice - Część 4:									
	Dokumenty dotyczące lokalizacji i instalowania.									
	1. PN-EN 61082-1:2006 (U) Przygotowanie dokumentów używanych w elektrotechnice - Część 1:									
	Podstawowe zasady.									
Supplementary	2. PN-EN 61082-1:2006 (U) Przygotowanie dokumentów stosowanych w elek	trotechnice – Czę	ść 2:							
references	Schematy dotyczące funkcji.									
	3. PN-EN 61082-1:2006 (U) Przygotowanie dokumentów stosowanych w elek	trotechnice – Czę	ść 3:							
	Schematy połączeń, tabele i zestawienia.	-								
Organisational unit conducting the course	Katedra Elektroenergetyki, Fotoniki i Techniki Świetlnej	Date of issuing the prog	ramme							
Author of the programme	dr hab. inż. Maciej Zajkowski, prof. PB	2019-09-23								

				Rial	ustok II	<i>App</i> niversity	of Techno	o the Directive No 915/2	019 of the Recto	r of BUT
				ומום	SIUNU	liversity	UI I Como	Decree level and	full_time Bac	helor's
Field of study		Auto	omatic	Contro	and R	obotics		programme type	degree	e
Specjalization / diploma path			COI	mmon s	ubject			Study profile	general aca	demic
Course name	Te	echnical	drawin	a in me	chanica	l engine	erina	Course code	MYARS01	003
		-		y	Chance	il cligilio	enng	Course type	obligato	ory
Forms and	L	С	LC	Р	SW	FW	S	Semester	1	
of tuition	15	0	0	30	0	0	0	No. of ECTS credits	3	
Entry requirements							-			
Course objectives	Obtaining knowledge in the field of mapping and dimensioning of machine parts. Developing the ability to draw parts of machines on drawings, as well as their connections (temporary and permanents) in assembly drawings. Acquainting with the principles of dimensioning, tolerating and shaping the geometric structure of the surface. Acquiring the ability to read and create schematic drawings of machine assemblies and to make freehand drawings of simple details.									
Course content	Lecture: Orthographic projection of spatial elements into one, two and three viewports. Polish Norms in engineering graphics. Creating views, full sections, removed sections and broken-out section. Dimensioning and tolerance of dimensions. Free and tolerated dimensions. Accuracy classes. Tolerances of shape and position. Compound tolerances. Surface condition (roughness, coating designation). Temporary and permanents connections. Workshop and assembly drawings. Schematic drawing. Project: Drawing views and cross-sections. Workshop drawing of selected machine components (dimensions, tolerances, roughness). Drawing mechanical connections. Assembly drawing (views, full section, brokenout section, part specification) and schematic.									
Teaching methods	Informa	ative-prol	blem lec	ture; Pro	ject cla	sses;				
Assessment method	Lecture: one test Project: evaluation of project completion, current progress in project completion, discussion and activity during the classes									
Symbol of learning outcome	Learning outcomes Reference outcomes fo							Reference to the outcomes for the	ne learning field of study	
LO1	defines	s principle	es of gra	phic ma	pping a	nd dimen	sioning of p	arts of machines	AR1_W07	
LO2	defines	the met	hodolog	y of desi	gning m	iechanica	l devices		AR1_W07	
LO3	is able	to map o	compone	ents of m	achine	parts usir	ig engineer	ing graphics	AR1_U06	
LO4	can u docum	ise spe entation	cialized	knowle	edge ir	n order	to prepa	re correct technical	AR1_W07 AR1_	_U06
Symbol of learning outcome			Ν	lethods of	assessin	g the learni	ng outcomes		Type of tuition of the outcome is	luring which assessed
LO1	Lecture	e: one tes	st;						W	
LO2	Lecture	e: one tes	st;						W	
LO3	Project discuss	: evaluati sion and	tion of p activity o	roject co during th	ompletio e classe	n, curren es;	t progress	in project completion,		Р
LO4	Lecture project	e: one te complet	est; Proje ion, disc	ect: eval ussion a	luation of ind activ	of project rity during	completion the classe	n, current progress in s;	W	Ρ
		1	,	Student wo	rkload (in h	iours)		•	No. of h	ours
	Lecture	e attenda	ince						15	
	Project	attenda	nce						30	
	Prepara	ation for	lecture t	est(s)					5	
Calculation	Prepara	ation for	project c	lasses					6	
Calculation	Workin	g on pro	jects (ind	cluding p	preparati	ion of pre	sentations)		12	
	Prepara	ation for	projects	complet	tion				2	
	Particip	pation in	teacher-	student	session	s related	to the mode	ule subject	5	
				0	the second second			TOTAL	75	FOTO
				Quantita	uve indicat	JIS			HOURS	EUIS

	Student workload - activities that require direct teacher participation						
	Student workload - practical activities	55	2,2				
Basic references	 Burcan J., Podstawy rysunku technicznego. Wydawnictwa Naukowo Techniczne Fołęga P., Zasady zapisu konstrukcji części maszyn. Wydawnictwo Politechniki S. Dobrzański T. Rysunek techniczny Maszynowy. Wydawnictwa Naukowo dwudzieste szóste, Warszawa, 2015. Lewandowski T., Rysunek techniczny dla mechaników. Wydawnictwa Sz Warszawa, 2009. 	e, Warszawa, 2010. Śląskiej, Gliwice, 2 Techniczne, Wy kolne i Pedagogi	011. danie czne,				
Supplementary references	 Simmons C. H., Maguire D. E., Phelps N., Manual of engineering drawing. Newr Krawczuk M., Biereg K., Doliński Ł., Projektowanie urządzeń elektromecha Politechniki Gdańskiej, Gdańsk, 2006. Polskie Normy, PKNMiJ. 	nes, Amsterdam, 20 nicznych. Wydawr)09. nictwo				
Organisational unit conducting the course	Katedra Budowy Maszyn i Techniki Cieplnej	Date of issuing the prog	ramme				
Author of the programme	dr inż. Grzegorz Mieczkowski	2019-09-23					

			Bia	alvstok l	<i>App</i> Iniversit	endix No 1 a	to the Directive No 915 noloav	/2019 of the	Rector of	BUT
Field of study	Aut	omatic	Contro	l and R	obotics	.	Degree level and programme type	full-tim	e Bache degree	lor's
Specjalization / diploma path		COI	nmon s	subject			Study profile	gener	al acade	mic
							Course code	MYA	ARS0100	4
Course name		Engin	eering	material	S		Course type	ob	ligatory	
Forms and	L C	LC	Р	SW	FW	S	Semester		1	
number of hours	30 0	15	0	0	0	0	No. of ECTS credits		4	
Entry			•		•	÷			•	
requirements						-				
Course objectives	Acquainting with the basics of materials science. Gaining knowledge about the most important engineering materials, methods of their research and development trends. Acquainting with the basics of selection of materials for specific purposes.									
Course content	Lecture: Classification and general characteristics of engineering materials. Crystalline and amorphus structure and defects of materials. Basics of heat and thermo-chemical treatment. Overview of basic groups of metal alloys: iron, copper, aluminum and titanium based alloys. Selected precious metal alloys. Non-metallic materials: plastics, ceramics, composites. Materials for special applications: functional, structural, adhesives, among others. Rules for the selection of materials. Electrical, magnetic, thermal and mechanical properties of materials. Basic material testing methods. Trends in the development of engineering materials. Laboratory: Familiarization with materials testing methods. Microscopic observation of the structure of metals. Testing the basic mechanical properties of engineering materials. Polimers and composites materials. Characterisation of ceramics and class materials.									
Teaching	nformative-problem lecture: Laboratory classes:									
methods										
Assessment method	Lecture. e.	v: ovaluat	tion of in	otroducto	ny toete	roporte di	scussion and activity	during the	classos	
Symbol of	Laboratory. evaluation of introductory tests, reports, discussion and activity during the classes								arning	
learning outcome				Learning	outcomes			outcome	s for the field	of study
LO1	knows and characterizes basic groups of engineering materials							AR1_W03		
LO2	knows method	s of shap	oing the	structure	e and pro	perties of	materials	AR1_W03		
LO3	knows and cla	ssifies tre	eatment	s of ther	mal and	thermal ch	emistry of metals	AR1_W03	AR1_W02	1.54 1100
LO4	can choose ma	aterials n	neeting	specific o	goals			AR1_W03	AR1_U05	AR1_U08
LO5	is able to plan	and perf	orm bas	sic materi	ials tests			AR1_W03	AR1_U04	AR1_U12
Symbol of learning outcome		Μ	lethods of	fassessing	the learni	ng outcomes	i	Type of tui outco	ition during me is asse	which the essed
LO1	Lecture: exam	,						W		
LO2	Lecture: exam	;						W		
LO3	Lecture: exam	;						W		
LO4	Lecture: exam and activity du	; Labora ring the o	tory: ev classes:	aluation	of introd	uctory test	s, reports, discussio	ⁿ W	L	
1.05	Lecture: exam	; Labora	tory: ev	aluation	of introd	uctory test	s, reports, discussio	n w	1	
	and activity du	ring the o	classes;					**	L	
	1		Student wo	orkload (in h	ours)			-	No. of hours	
	Lecture attend	ance							30	
	Laboratory cla	sses atte	naance			44.0.000			15	
	Preparation to	r the lect	ure exa	m; partici	ipation in	i the exam			21	
Calculation	Preparation to		ory class	Ses	lafter.				20	
	Preparation to	r laborato	bry class	ses comp	Dietion	1.1.1	ded a cod 1 - 1		<u>3</u>	
	Participation in	teacher	-studen	t session	s related	to the mo	dule subject		5	
			Ouantit	tivo indiaat-	urc .		ΙΟΓΑ	L	100	ECTO
	Student	workload - a	ictivities th	at require di	rect teacher	participation		5	2	2.1

	Student workload - practical activities									
	1. Ashby M., Sherclif H., Cebon D., Inżynieria materiałowa. Tom 1, 2. Wydawnictwo Galaktyka, Łódź, 2011.									
	2. Dobrzański L., Wprowadzenie do nauki o materiałach. Wydawnictwo PŚl, Gliwice, 2007.									
	3. Ciszewski A., Radomski T., Szummer A., Materiałoznawstwo. Oficyna Wyd	awnictwo PW, Wa	irszawa,							
Basic references	2009.									
	4. Przybyłowicz K., Przybyłowicz J., Materiałoznawstwo w pytaniach i odpowie	edziach. WNT, Wa	irszawa,							
	2000.									
	5. Celińska Z., Materiałoznawstwo elektrotechniczne. Wydawnictwo Politechniki Warszawskiej, Warszawa									
	1998									
	1. Schulz, M.J., Kelkar A.D., Sundaresan M.J., Nanoengineering of structural, functional and smart									
Supplementary	materials. Taylor & Francis Group, Boca Raton-London-New York, 2006.									
references	2. Dobrzański L., Podstawy nauki o materiałach i metaloznawstwo. WNT, Warszawa, 2002.									
	3. Askeland, Donald R. The science and engineering of materials. Stamford, Cengage Learning, 2011.									
	4. Celiński Z., Materiałoznawstwo elektrotechniczne, OWPW Warszawa., 2011	1								
Organisational	Katodra Inżynierii Materiałowej i Produkcji	Date of issuing the prog	rammo							
the course		Date of issuing the plog	lamme							
Author of the programme	dr hab. inż. Zbigniew Oksiuta, prof. PB	2019-09-23								

[Pialy	stak Un	App	endix No 1 t	o the Directive No 915/2	2019 of the Rector of BUT	
Field of study		Aut	omatic	Contro	l and R	obotics		Degree level and programme type	full-time Bachelor's degree	
Specjalization / diploma path			co	mmon s	subject			Study profile	general academic	
		0	<i>a</i>	4				Course code	MYARS01005	
Course name		Opera	ting sys	stems: L	Inux and	a Anaroi	a	Course type	obligatory	
Forms and	L	С	LC	Р	SW	FW	S	Semester	1	
of tuition	15	0	0	30	0	0	0	No. of ECTS credits	4	
Entry					1		_	J		
Course objectives	Gaining knowledge of the construction, functioning and possibilities of using Linux and Android operating systems. Gaining practical skills in system configuration, text processing, practical application of tools available in Linux and Android.									
Course content	Lecture: Operating systems - basic concepts, definitions, elements of architecture. Linux: bash shell, command prompt. Linux: scripting in the shell. Linux: file and directory systems, file system management. Linux: users and permissions. Introduction to regular expressions, grep command. Linux: stream editors: sed, awk. Linux: processing automation - make command. Android: architecture and configuration. Android: permissions. Project: Linux: system installation. Linux: work with the command line. Linux: scripting in the shell. Linux: working with files and directories, managing file systems. Linux: user management and permissions. Linux: grep command. Linux: stream editors: sed, awk. Linux: make command. Android: configuration. Android: nermissions.									
Teaching	Informa	tive-prot	olem lect	ure; Pro	ject clas	ses;				
Assessment method	Lec Pro acti	Lecture: one test Project: evaluation of project completion, current progress in project completion, discussion and activity during the classes								
Symbol of learning outcome	Reference to the learning Learning outcomes outcomes for the field of study									
LO1	knows systems	knows and understands the ability to configure Linux and Android operating AR1_W04 systems								
LO2	knows a process	and unde sing, mai	erstands nly text f	Linux s iles	ystem co	ommands	to work wit	th the system and dat	a AR1_W04	
LO3	is able t	to config	ure elerr	nents of	the Linux	and And	roid operat	ing system	AR1_U03	
LO4	is able comma	to prepa nd, to pe	ire a pro erform a	cessing data pro	system, cessing	including task, mai	a script, a script, a	a configuration file or	a AR1_U03	
Symbol of learning outcome			1	vlethods o	f assessing	g the learnir	ng outcomes		Type of tuition during which the outcome is assessed	
LO1	Lecture	: one tes	st;						W	
LO2	Lecture	: one tes	st;						W	
LO3	Project: discuss	evaluat ion and	tion of p activity c	roject c luring th	ompletio e classes	n, curren s;	t progress	in project completior	^{I,} P	
LO4	Project: discuss	evaluat ion and	tion of p activity c	roject c luring th	ompletione classes	n, curren S;	t progress	in project completior	^{n,} P	
	Lecture	attondo	nce	Student wo	orkioad (in he	ours)			NO. Of hours	
	Project	attendar							30	
	Prenara	ation for	lecture tr	est(s)					14	
	Prenara	ation for	project c	lasses					18	
Calculation	Working		ects (inc	ludina n	reparatio	n of nree	entations)		12	
	Prenara	ation for	nniente	comnlet	ion		5110110115)		6	
	Particin	ation in t	eacher-	student	sessione	related to	the modu	le subiect	5	
			540101-		5000010				100	
	l			Quantita	tive indicato	ors			Hours ECTS	

	Student workload - activities that require direct teacher participation	50	2
	Student workload - practical activities	71	2,8
Basic references	 Tanenbaum A. S., Systemy Operacyjne. Wydawnictwo Helion, Gliwice 2010. Stallings W., Systemy operacyjne. Struktura i zasady budowy. Wydawnic Warszawa 2006. Shotts W. E. Jr., Linux: wprowadzenie do wiersza poleceń. Helion, Gliwice 2015. Sosna Ł., Linux: komendy i polecenia. Helion, Gliwice 2014. Dokumentacja systemu Android na stronach http://android.com/ 	twa Naukowe	PWN,
Supplementary references	 Bokumentacja o'jeterna varialeta na otronati napili analete.com: Kuźniar K., Programowanie w Linuksie: ćwiczenia. Helion, Gliwice 2012. Sobell M. G., Linux: programowanie w powłoce: praktyczny przewodnik. Helion, G Lal K. Linux: komendy i polecenia: praktyczne przykłady. Helion, Gliwice 2005. Dokumentacja on-line wybranego systemu Linux. 	liwice 2014.	
Organisational unit conducting the course	Katedra Systemów Informacyjnych i Sieci Komputerowych	Date of issuin programme	g the
Author of the programme	dr inż. Tomasz Grześ	2019-09-23	

				Bialy	/stok Ui	App niversitv	of Techno	o the Directive No 915/2 loav	019 of the Rector of BUI		
Field of study		Auto	omatic	Control	and R	obotics		Degree level and programme type	full-time Bachelor's degree		
Specjalization / diploma path			COI	nmon s	ubject			Study profile	general academic		
Course nome			Com	nutor n	otworko			Course code	MYARS01006		
		1	COIII	puter II	elworks	•		Course type	obligatory		
Forms and number of hours		C	LC	P	SW	FW	S	Semester	1		
of tuition	15	0	0	30	0	0	0	No. of ECTS credits	4		
requirements	-										
Course objectives	Gaining knowledge of the basics of building, operating and designing computer networks, also in terms of extending the use and administration skills of wired and wireless local networks.										
Course content	Description of the communication process using a layered OSI model. Basic network devices and transmission media. Basics of construction, configuration, use and administration of wired and wireless local area networks (LAN, WLAN): Ethernet, Wi-Fi. The concept and implementation of virtual local area networks (VLAN). Basic and auxiliary protocols used in packet networks: IP, UDP, TCP, ARP, ICMP. Addressing devices in networks with IPv4 and IPv6 protocols. Static and dynamic routing in IP networks. Organization and operation of the DNS domain name system. Basics of security issues in computer networks and methods of their protection. Project: The course includes preparation of computer network projects for home users or for small/medium companies. The projects take into account the implementation of the assumed functionalities, as well as data security, convenience of use, etc. During the classes the issues related to the technologies and standards used in projects are discussed, and in the final part of the semester the prepared projects are presented and discussed										
Teaching	Informative-problem lecture: Project classes:										
Assessment method	Lecture: exam Project: evaluation of project completion, current progress in project completion, discussion and activity during the classes										
Symbol of learning outcome	Learning outcomes Reference to the learning outcomes										
LO1	the st technol choose	udent logies ar the righ	knows nd device it technol	and un es used i logies ar	derstand in wired nd device	ls the and wire es to mee	architecture less local n et the speci	e and operation of etworks and is able to fied requirements,	AR1_W04 AR1_U03		
LO2	the stu auxiliar parame	dent kno y protoo eters of t	ows and cols use hese pro	underst d in co tocols to	ands the omputer o meet th	e feature network ne assum	s and func s and car ed requirer	tions of the basic and n determine selected ments,	AR1_W04 AR1_U03		
LO3	student protoco cohere	t is able ols and nt netwo	e to choo products ork syster	ose and in the n that m	integra field of eets the	te conte compute listed re	mporary so r networks quirements	blutions, technologies, in order to create a ,	AR1_U03 AR1_U11		
LO4	the stu comput task.	dent is ter netw	able to p orks and	blan the I to prej	process pare a p	s of crea presentat	tion of the ion about	design in the field of the completed project	AR1_U11		
Symbol of learning outcome			N	lethods of	assessinę	g the learni	ng outcomes		Type of tuition during which the outcome is assessed		
LO1	Lecture project	e: exam complet	; Project	:: evalua ussion a	ation of nd activ	project ity during	completion the classe	, current progress in s;	W P		
LO2	Lecture project	e: exam complet	; Project	:: evalua ussion a	ation of nd activ	project ity during	completion the classe	, current progress in s;	W P		
LO3	Project discuss	: evalua sion and	tion of p <u>activity</u> o	roject co <u>luring t</u> h	ompletio <u>e class</u> e	n, curren es;	t progress	in project completion,	Р		
LO4	Project discuss	: evalua	tion of p activity o	roject co during th	ompletio e classe	n, curren es;	t progress	in project completion,	P		
Calculation	Lecture	attenda	ance	Student wo	rkioad (in h	ours)			No. of hours		

	Project attendance	30						
	Preparation for the lecture exam; participation in the exam	16						
	Preparation for project classes	17						
	Working on projects (including preparation of presentations)	12						
	Preparation for projects completion	5						
	Participation in teacher-student sessions related to the module subject	5						
	TOTAL							
	Hours	ECTS						
	52	2,1						
	Student workload - practical activities	69	2,8					
Basic references	 Tanenbaum Andrew S., Wetherall David J., Sieci komputerowe. Wydanie V, Heli Zaręba P., Praktyczne projekty sieciowe. Helion, Gliwice, 2019. Roshan P., Leary J., Bezprzewodowe sieci LAN 802.11. Podstawy. Wyda Warszawa, 2006. Materials from the lecture. 	ion, Gliwice 2012. awnictwo PWN-MI	KOM,					
Supplementary references	 Kurose James F., Keith W. Ross., Computer Networking: A Top-Down Pearson/Addison Wesley, Boston 2008. Józefiok A., CCNA 200-125. Zostań administratorem sieci komputerowych Cisco 3. Stallings W., Brown L., Bezpieczeństwo systemów informatycznych. Zasady Tom 1 i 2. Helion, Gliwice, 2019. RFC documents (available on the Internet: http://www.rfc-editor.org). 	Approach. 4th eo b. Helion, Gliwice, 2 i praktyka. Wydan	dition. 2017. ie IV.					
Organisational unit conducting the course	Katedra Telekomunikacji i Aparatury Elektronicznej	Date of issuing the prog	ramme					
Author of the programme	dr inż. Andrzej Zankiewicz	2019-09-23						

				Bial	vstok U	Appo niversitv	endix No 1 to of Techno	o the Directive No 915/20 Joav	019 of the Rector of 1	BUT	
Field of study		Automatic Control and Robotics Degree level and programme type							full-time Bachel degree	or's	
Specjalization / diploma path			CO	mmon s	ubject			Study profile	general acader	general academic	
		•						Course code	MYARS01007	7	
Course name		ÜC	cupatio	onal safe	ety and	nealth		Course type	obligatory		
Forms and	L	С	LC	Р	SW	FW	S	Semester	1		
number of hours	15	0	0	0	0	0	0	No. of ECTS credits	1		
Entry		•	•	÷	•	·	·		•		
requirements							-				
Course objectives	Familiarizing with the general principles of health and safety at work. Acquaintance with selected issues related to fire protection. Acquaintance with the principles and methods of first aid.										
Course content	Basic legal regulations in the field of occupational health and safety. Threats occurring in the work environment and methods of their limitation. Dangerous, harmful and arduous factors in human surroundings. Requirements for the size and equipment of work rooms. Safety signs and symbols. Rules and methods of providing pre-medical first aid. Rescue of persons electrocuted. Fire protection of facilities: fire fighting procedures, the concept of an escape route, fire fighting rules and methods.										
Teaching	Informa	tive-prob	olem lec	ture;							
Assessment method	Leo	ture: one	e test								
Symbol of					Learnin	g outcomes			Reference to the lea	arning of study	
LO1	knows health a	knows and understands the requirements of applicable regulations regarding health and safety at work								AR1_W10 AR1_K02	
LO2	knows the organism's hazards in the work environment								AR1_W10		
LO3	knows the types of fires and describes the methods of extinguishing them								AR1_W10		
LO4	lists the rules and describes the methods of providing pre-medical first aid knows and understands the principles of using ergonomics							AR1_W10 AR1_K03			
Symbol of learning outcome			Ν	/lethods o	f assessin	g the learni	ng outcomes		Type of tuition during which the outcome is assessed		
LO1	Lecture	: one tes	st;						W		
LO2	Lecture	: one tes	st;						W		
LO3	Lecture	: one tes	st;						W		
LO4	Lecture	: one tes	st;						W		
LO5	Lecture	: one tes	st;	<u> </u>					W		
	Locturo	ottondo		Student wo	orkload (in h	iours)			No. of hours		
	Dropor	allenua	lice	reat(a)					15		
Calculation	Dortioin	ation in t	leciule i	esi(s)	cossion	a rolatod	to the mode	la subiast	5		
	Farticip		leacher-	Sludeni	56221011	sielaleu			25		
	1			Quantita	ative indicat	ors		TOTAL	Hours	ECTS	
		Student	workload -	activities th	at require d	lirect teacher	participation		20	0.8	
			Stud	ent workloa	ad - practica	al activities			0	Ó	
	1. Rącz	kowski E	B., BHP	w prakty	/ce. ODI	DK, Gdań	sk, 2010.		2010	<u> </u>	
Basic references	2. Cele 3. Hors Wydaw	ua R., Be st W. N nictwo P	ezpiecze I., Hors olitechn	st N., E iki Pozn	riigiena Ergonom ańskiej,	pracy. At ia z ele Poznań,	mentami k 2011.	ezpieczeństwa i och	arszawa, 2010. rony zdrowia w	pracy.	
	4. Augu Badawo	istynska czy, War	ט., Bez szawa,	pieczen: 2008.	siwo i ni	yiena pra	cy. Central	ny insiyiut Ochrony Pra	acy - Panstwowy II	ISIYTÜT	
Supplementary references	 Dołę bezpiec ODDK, Ferts 	gowski zeństwie Gdańsk sch M.,	B., Jan e pracy , 2010. Ergonor	czała S , zagro mia, tec	., Co pi żeniach hnika i	racownik zawodo [,] technolog	powinien wych, pien gia, zarząd:	wiedzieć o BHP: pod wszej pomocy i ochr zanie. Wydawnictwo F	stawowe wiadomo onie przeciwpoża Politechniki Pozna	ości o irowej. ńskiej,	

	Poznań, 2009.3. Dahlke G., Górny A., The ergonomics and safety in environment of human liv Poznan University of Technology, Poznań, 2009.	e. Publishing House of
Organisational unit conducting the course	Katedra Elektroenergetyki, Fotoniki i Techniki Świetlnej	Date of issuing the programme
Author of the programme	dr inż. Grzegorz Hołdyński	2019-09-23

Appendix No 1 to the Directive No 915/2019 of the Rector of BUT Bialystok University of Technology											
Field of study		Auto	omatic	Contro	l and R	obotics		Degree level and programme type	full-time Bachel degree	or's	
Specjalization / diploma path	common subject Study profile							general acader	nic		
0				Davaha				Course code	MYARS0100	8	
Course name	Course type						Course type	elective			
Forms and	L	С	LC	Р	SW	FW	S	Semester	1		
of tuition	15	0	0	0	0	0	0	No. of ECTS credits	1		
Entry requirements							-				
Course objectives	Providing information in the field of psychology that is important in professional and social functioning. Shaping the ability to analyze social phenomena - their perception, evaluation and explanation - in the context of knowledge about the properties of the mental functioning of a human being. An indication of the importance of social competences in professional and especially team work. Characterization of conflicts in the workplace and occupational stress (causes of occurrence, course and methods of elimination).										
Course content	Basic information in the field of general psychology. Psychic processes: relations between the cognitive and affective spheres, their role in collecting and evaluating knowledge about themselves, the physical and social world. Basics of social psychology, understanding of one's own person and the social world, disposable structures of the psyche (the concept of the self). Characteristics of the process of social cognition and assessment of people during social interactions. Psychological interpretation of social influence and methods of interaction during interpersonal contacts and analysis of social relations. Psychological determinants of teamwork and factors determining the effectiveness of teamwork.										
Teaching methods	Informa	Informative-problem lecture;									
Assessment	Lecture: one test										
Svmbol of									Reference to the lea	arning	
learning outcome	Learning outcomes								outcomes for the field	of study	
LO1	knows, understands and characterizes main theoretical trends in psycholog defines basic conceptual categories and uses them						trends in psychology	AR1_W09			
LO2	knows, their m function	understa utual re ning)	ands and lations a	d charao and deto	ermines	the role	and affectiv (also in th	e processes, presents e field of professiona	AK1_W09		
LO3	knows t	the basic	cs of soc	ial cogr	ition, so	cial impac	ct and socia	al relations	AR1_W09		
LO4	knows to values, ready to	the mec attitude o respec	hanisms s, princi t the div	of sha bles and ersity of	ping per 1 norms, ⁵ views a	sonality (explains nd culture	the concep their cultur es	t of "I"), the system of al determinants and is	AR1_W09 AR1_K03	AR1_W09 AR1_K03	
Symbol of learning outcome			Ν	/lethods c	f assessin	g the learni	ng outcomes		Type of tuition durin the outcome is ass	g which sessed	
L01	Lecture	: one tes	st;						W		
LO2	Lecture	: one tes	st;						W		
LO3	Lecture	: one tes	st;						W		
LO4	Lecture	: one tes	st;	Ctudart	orkland (in)	ours)			W No of house		
	Locturo	attonda	nco	Student w	orkioad (in i	iours)			15		
	Prenara	ation for	lecture t	ast(s)					5		
Calculation	Particin	ation in	teacher-	student	session	s related	to the modu	ule subject	5		
				otadoni	00001011	orolatoa			25		
	1			Quantit	ative indicat	ors		IUTAL	Hours	ECTS	
		Student	workload -	activities th	at require o	lirect teacher	participation		20	0,8	
			Stud	ent worklo	ad - practica	al activities			0	0	
Basic references	1. Arons 2. Ciald 3. Gelle 4. Rath	son E., V lini R., W ert M., No us S.A.,	Vilson T /ywierar owak C. Psychol	.D., Ake iie wpłyv , Zespół ogia ws	ert R.M., wu na lu . GWP, półczesr	Psycholo dzi. GWP Gdańsk 2 na. GWP,	gia społecz , Gdańsk 2 008. Gdańsk 20	zna. Serce i umysł. Zys 010. 004.	k i S-ka, Poznań 2	2008.	

	5. Zimbardo P.G. – Psychologia i życie, Warszawa 2008.								
Supplementary	1. Boski P., Kulturowe ramy zachowań społecznych. PWN, Warszawa 2009.								
	2. Doliński D., Techniki wpływu społecznego. Scholar, Warszawa 2005.								
	3. Kenrick D.T., Neuberg S.L., Cialdini R. Psychologia społeczna. GWP, Gdańsk 2002.								
	4. Wojciszke B., Psychologia miłości. Intymność. Namiętność. Zaangażowanie, Gdańsk 2009.								
	5. Wojciszke B., Psychologia społeczna. Scholar, Warszawa 2011.								
Organisational unit conducting the course	Katedra Ekonomii i Nauk Społecznych	Date of issuing the programme							
Author of the programme	dr Andrzej Smolarczyk	2019-09-23							

				Bial	vstok U	<i>Appo</i> niversity	endix No 1 i	o the Directive No 915/20	019 of the Rector of	f BUT	
Field of study		Auto	matic	Contro	and R	Degree level and programme type	full-time Bache degree	elor's			
Specjalization /			CO	mmon s	ubject			Study profile	general acade	emic	
				• • •	•			Course code	MYARS010	09	
Course name				Sociolo	ogy			Course type	elective		
Forms and	L	С	LC	Р	SW	FW	S	Semester	1		
of tuition	15	0	0	0	0	0	0	No. of ECTS credits	1		
Entry	•						-				
Course objectives	Acquaint Presenta these are Presentir	ing wit ition of eas of ng basi	h the fu researc sociolo c sociolo	nction a h metho gy, whic ogical kn	and role ds used h are th owledge	of socio in sociol ne most e in its pra	ology as a ogy and th important actical asp	science in social, ec eir practical use in tech from the point of view ect.	onomic and cultu nology. Acquaint / of modern tech	ural life. ing with nnology.	
Course content	Informati concept society, s state, the organiza functionin individua and the c	on in the of social social genation tional, in ng of a l to soce causes	ne field fology a groups, n, nation religious man in tiety. Th and way	of gener nd its s small sc nal minc and so the proc e pheno ys of sol	al sociol ubject. ocial grou orities, th cial lead ess of so menon o ving soc	logy, nee Research ups: fam he intellig lership. S ocializatio of mobbir ial conflic	ded to und methods ily, social o jentsia, the Sociologica on, the imp ng, intercul sts.	lerstand the functioning in sociology. Social i circle, large social grou power elite. Typolog I concept of personalit ortance of conformism tural differences in the	g of modern socie ssues: social stru- ips. The concept y of leadership, p y and temperame as a way of adap aspect of commu	ety. The uctures, s of the political, ent. The oting the nication	
Teaching methods	Informati	nformative-problem lecture;									
Assessment	Lectu	ure: one	e test								
Symbol of								Reference to the I	earning		
learning outcome								outcomes for the fiel	ld of study		
LO1	knows, understands social structures and institutions, and relationships between them							relationships betweer	AR1_W09		
LO2	has soo relations	ciologic hips	al knov	wledge	about	people	and unde	erstands interpersona	AR1_W09		
LO3	knows th professio	ne rules Inal ma	s of com nner	nmunicat	tion in th	ne workp	lace and i	s ready to behave in a	AR1_W09 AR1_K0	05	
LO4	understa	nds wa	ys of m	anaging	people a	and leadi	ng a group	of people	AR1_W09		
Symbol of learning outcome			N	lethods of	assessin	g the learni	ng outcomes		Type of tuition dur	ing which	
LO1	Lecture.	one tes	st:						W	336336U	
LO2	Lecture:	one tes	st;						W		
LO3	Lecture:	one tes	st;						W		
LO4	Lecture:	one tes	st;						W		
	_			Student wo	orkload (in h	nours)			No. of hour	S	
	Lecture a	attenda	nce						15		
Calculation	Preparat	ion tor	ecture t	est(s)				1 1 1 1	5		
	Participa	tion in t	eacher-	student	session	s related	to the mod	ule subject	5		
				Quantita	tive indiact	ore		IOTAL	. 25	ECTO	
		Student	workload -	activities th	at require d	uis lirect teachei	participation		20	0.8	
		5.000111	Stud	ent workloa	d - practica	al activities			0	0,0	
Basic references	1. Sztom 2. Gidder 3. Szacka 4. Encyk	pka P., ns A., S a B., W lopedia	Socjolog Socjolog (prowad socjolo	gia. Ana ia, Wyda zenie do gii, t. 1-5	aliza spo awnictwo socjolo 5, Oficyn	łeczeństy o Naukow gii, Oficyl a Naukow	wa, "Znak" ve PWN, W na Naukow wa, Warsz	Kraków 2012. /arszawa 2005. /a, Warszawa 2008. awa 2000.			
Supplementary references	1. Wnuk- 2. Współ	Lipińsk czesne	i E., So społecz	cjologia zeństwo	życia pu polskie.	blicznego Dynamik	o, Wydawr a zmian, V	ictwo Scholar, Warsza Vasilewski J. (red.), Sc	wa 2006. nolar, Warszawa	2006.	

	 Giddens A., Stanowienie społeczeństwa, Warszawa 2003. Goffman E., Człowiek w teatrze życia codziennego, Warszawa 2011. 									
Organisational unit conducting the course	Katedra Ekonomii i Nauk Społecznych	Date of issuing the programme								
Author of the programme	dr Andrzej Smolarczyk	2019-09-23								

				Bial	vstok II	<i>App</i> niversity	endix No 1 to	o the Directive No 915/20	19 of the Rector of BUT			
Field of study		Auto	omatic	Contro	I and R	obotics		Degree level and programme type	full-time Bachelor's degree			
Specjalization / diploma path			CO	mmon s	subject			Study profile	general academic			
			_					Course code	MYARS01010			
Course name			Econo	my for	enginee	ers		Course type	elective			
Forms and	L	С	LC	Р	SW	FW	S	Semester	1			
number of hours	15	0	0	0	0	0	0	No. of ECTS credits	1			
Entry		v	v	•	v	•	•		•			
requirements							-					
Course objectives	behavior of economic entities on the market, understanding the functioning of the national and international economy, particular product markets, services, production factors and financial markets. Learning the ability to determine the causes and effects of phenomena in contemporary economic reality, reception and understanding of market signals in a selected industry, establishing the relationship between changes in the macroeconomic environment and decisions of companies in this industry.											
Course content	costs. Company decisions. Markets of production factors. Factors determining the demand for labor and labor supply. Capital market analysis. National income and growth factors. Economy of well-being. The theory of market failure. Public goods and externalities. The state budget and the money and credit system. Theories of inflation and anti-inflation policy. Unemployment as a basic macroeconomic problem. Monetary and fiscal policy instruments. Trade and international finance. The problem of financialization of modern economies. Analysis of international turnovers of highly processed products and services. Economic situation and business cycle. Economic integration. Determinants of economic growth - the level of income and consumption. Global economy.											
Teaching methods	Informa	Informative-problem lecture;										
Assessment method	Lec	Lecture: one test										
Symbol of				Reference to the learning								
LO1	knows functior	and un	derstan	ds basi my	c econo	omic cat	egories an	d basic principles of	AR1_W09			
LO2	knows macroe	and und	lerstand: enviror	s the be iment	ehavior o	of econor	nic entities	in the changes in the	AR1_W09			
LO3	can det	ermine t	he caus	es and e	effects o	f selected	l phenomer	na in the economy	AR1_U05			
LO4	can pre variable	edict the es	compar	ıy's dec	isions in	respons	e to exoge	nous and endogenous	AR1_U05 AR1_K04			
LO5	can des product	scribe the	e functio	oning of	selected	Imarkets	: products,	services and factors of	AR1_U05 AR1_K04			
LO6	is ready	/ to think	and act	in an e	ntrepren	eurial wa	у		AR1_K04			
Symbol of learning outcome			Ν	/lethods o	f assessin	g the learn	ing outcomes		Type of tuition during which the outcome is assessed			
LO1	Lecture	: one tes	st;						W			
LO2	Lecture	: one tes	st;						W			
LO3	Lecture	: one tes	st;						W			
LO4	Lecture	: one tes	st;						W			
LO5	Lecture	: one tes	st;						W			
LO6	Lecture	: one tes	st;						W			
				Student w	orkload (in l	nours)			No. of hours			
	Lecture	attenda	nce						15			
Coloulation	Prepara	ation for	lecture t	est(s)					5			
Calculation	Particip	ation in	teacher-	student	session	s related	to the modu	ule subject	5			
								TOTAL	25			

	Quantitative indicators									
	Student workload - activities that require direct teacher participation									
	0	0								
	1. Podstawy ekonomii, red. Milewski R., PWN, Warszawa 2005.									
Donio references	2. Samuelson P. A., Nordhaus W. D., Ekonomia t. 1 i 2, PWN, Warszawa 2004.	2. Samuelson P. A., Nordhaus W. D., Ekonomia t. 1 i 2, PWN, Warszawa 2004.								
Basic references	3. Mikro i makroekonomia. Podstawowe problemy współczesności, red. Marciniak S., Wydawnictwo									
	Naukowe PWN, Warszawa 2013.									
	1. Sopoćko A., Mit pieniądza, Wydawnictwo Naukowe PWN, Warszawa 2015.									
Supplementary	2. Sedlácek T., Ekonomia dobra i zła, Wydawnictwo Studio EMKA, Warszawa 2012.									
references	3. Giddens A., Europa w epoce globalnei, PWN, Warszawa 2009.									
	4. Nojszewska E., Podstawy ekonomii, Wydawnictwa Szkolne i Pedagogiczne, Warszawa 1999.									
Organisational										
unit conducting the course	conducting Zakład Ekonomii Menedżerskiej Date of issuing the progra									
Author of the programme	dr Krystyna Zimnoch	2019-09-23								

				D:	histoli	App	endix No 1 t	o the Directive No 915/2	2019 of the Rector of 1	BUT	
				Bla	alystok	Jniversi	ty of Techr		full time Decks	lor'o	
Field of study		Auto	omatic	Contro	and R	obotics	;	Degree level and programme type	degree	ior s	
Specjalization / diploma path			co	mmon s	subject			Study profile	general acade	mic	
Course name			Δοσοιμ	nting fo	r engine	ers		Course code	MYARS0101	1	
			Accou					Course type	elective		
Forms and number of hours	L	С	LC	P	SW	FW	S	Semester	1		
of tuition	15	0	0	0	0	0	0	No. of ECTS credits	1		
Entry requirements							-				
Course objectives	Acquiring basic knowledge of cost accounting and the ability to use it in managing a modern enterprise, in particular familiarizing with the role and functions of cost accounting in the enterprise information system, defining costs and their classification according to different criteria, control and cost analysis based on cost budget, as well as concepts of strategic cost management.										
Course content	The essence and classification of costs according to various criteria. Cost measurement. Basic models of cost accounting. Calculation of costs in a systematic calculation. Variable cost accounting and its application in short-term decisions. Calculation in variable cost accounting. Standard cost account, Development of standards for normative costs. Basics of budgeting and cost control. Cost management through a deviation account. Modern cost accounting systems in management, including activity cost accounting (ABC), target costs and kaizen system and product life cycle costs.										
Teaching	Informa	itive-pro	blem le	cture;							
Assessment method	Lec	ture: or	ne test								
Symbol of learning outcome	Learning outcomes								Reference to the le outcomes for the field	earning I of study	
LO1	knows and understands the concept of costs and distinguishes costs from A expenditures and expenses							AR1_W09			
LO2	knows and understands the distribution of costs according to basic cost AR1_W09 classification sections and knows the methods of their valuation										
LO3	has basic knowledge of calculating an account - can perform basic cost AR1_W09 AR1_U05 AR1_K04 calculations and link the cost account to the financial result of the company										
LO4	knows a	and und	derstand	s the ba	sics of m	nodern co	ost manage	ement	AR1_W09		
Symbol of learning outcome			Ν	/lethods c	f assessin	g the learn	ing outcomes		Type of tuition durin the outcome is as	Type of tuition during which the outcome is assessed	
LO1	Lecture	: one te	est;						W		
LO2	Lecture	: one te	est;						W		
LO3	Lecture	: one te	est;						W		
LO4	Lecture	: one te	est;	Ctudentu	orkland (in h	201172)			W No. of hours		
	Lecture	attend	ance	Sludentw		iours)			15		
	Prenara	ation for	r lecture	test(s)					5		
Calculation	Particip	ation in	teacher	-studen	t sessior	s related	to the mod	tule subject	5		
				otadon				TOTAL	25		
				Quantit	ative indicat	ors			Hours	ECTS	
		Student	workload -	activities th	nat require c	lirect teache	er participation		20	0,8	
			Stud	lent worklo	ad - practica	al activities			0	0	
Basic references	1. Matu 2011.	uszek J	I., Kołos	owski N	1., Koko	sz-Krynk	e Z., Rach	unek kosztów dla inż	zynierów, PWE, W	arszawa	
	2. Swid	erska C	<u>. K. (rec</u>	i), Contr	olling ko	sztów i r	achunkowo	sc zarządcza, Difin, W	/arszawa 2010.		
	1. Matu	szewicz	z J., Rac	nunek k	osztów,	FINANS	-SERVIS, V	Varszawa 2009.			
Supplementarv	2. Nowa	ak E., S	otrategicz	zne zarz	adzanie	Kosztam	ii, Uticyna E	-konomiczna 2006.	Nama-au 0010		
references	3. Nowa	ак ⊨., V	vierzbińs	SKI M., H	acnune	KOSZTOV	v. Wodele i	zastosowania, PWE,	/varszawa 2010.		
	4. SODa 2003	inska I.	(rea.), H	kachune	ek koszto	ow i rach	UNKOWOSC 2	zarząocza, vvydawnić	WO U.H. BECK, W	arszawa	
	2000.										

	5. Horngren C. T., Datar S. M., Rajan M. V., Cost accounting: a managerial empl Boston 2015.	hasis, Pearson Education,
Organisational unit conducting the course	Zakład Ekonomii Menedżerskiej	Date of issuing the programme
Author of the programme	dr inż. Jolanta Łuczaj	2019-09-23

				Dia	votok II	App	endix No 1 to	o the Directive No 915/20	019 of the Rector of .	BUT
		• •				niversity	or rechno	Degree level and	full-time Bachel	lor's
Field of study		Aut	omatic	Contro	and R	obotics		programme type	degree	
Specjalization / diploma path	common subject Study profile								general acade	mic
Course name			Histo	rv of to	chnolog	N/		Course code	MYARS0101	2
Course name			111510	iy oi te	CIIIIOIOg	I Y		Course type	elective	
Forms and	L	С	LC	Р	SW	FW	S	Semester	1	
of tuition	15	0	0	0	0	0	0	No. of ECTS credits	1	
Entry requirements							-			
Course objectives	Acquainting with the development of technology against the background of the development of the Earth's civilization.									
Course content	The history of technical development with particular emphasis on the importance of the development of civilization resulting from the acquisition, production of new materials and their use for the design of machinery and technological equipment. The history of technical development in Poland and the role played by Poles in the development of technology. Stories of technical progress in selected fields (automatic control and robotics as well as technological devices) with particular emphasis on mechanical structures.									
Teaching methods	Informa	ative-pro	blem lec	ture;						
Assessment method	Leo	cture: on	ie test							
Symbol of learning outcome					Learnin	g outcomes			Reference to the learning outcomes for the field of study	
LO1	knows	and und	erstands	the bas	sics of th	e history	of modern	technical civilization	AR1_W09	,
LO2	knows the historical and contemporary trends in the development of technology and science							/ AR1_W09		
LO3	is ready to self-education and can acquire knowledge and information about the surrounding objects of material and technical culture and communicate them in a clear and understandable way							, AR1_U02 AR1_K01 I		
LO4	can us technol	se infori logy, sci	mation di	techniqu scoverie	ies to a es and in	acquire k ventions	knowledge and its pres	about the history o sentation	f AR1_U02	
Symbol of learning outcome		0,	ſ	Methods of	of assessir	ig the learni	ing outcomes		Type of tuition during which the outcome is assessed	
LO1	Lecture	: one te	st;						W	
LO2	Lecture	: one te	st;						W	
LO3	Lecture	e: one te	st;						W	
LO4	Lecture	e: one te	st;						W	
	1	- 441 -		Student w	orkload (in l	nours)			No. of hours	
	Lecture	attenda		t (-)					15	
Calculation	Prepara	ation ior	tecture i	esi(s)	accolor	o rolatad	to the med	ula aubiaat	5	
	Particip	ation in	teacher-	student	session	srelated				
				Quantit	ative indicat	ors		TOTAL	. ZO Hours	FCTS
		Student	workload -	activities th	nat require o	direct teacher	r participation		20	0,8
			Stud	lent worklo	ad - practic	al activities	· ·		0	Ó
Basic references	1. Batu 2. Orłov 3. Regi 4. Kaku 5. Pate	ro W., T wskiB., ł s E., Na ı M.,Wiz r Z., Wy	echnika. Historia t notechn je czyli ja brane za	Spojrze echniki ologia. F ak nauk gadnier	enie na c polskiej. ^p ruszyńs a zmieni niaz histo	Izieje cyw Wydawn ski i S-ka, a świat w prii techni	vilizacji, PW ictwo Instyt Warszawa Xxi wieku, ki, Politech	/N, Wrszawa 2003. utu Technologii i Eksp 2001. Pruszyński i S-ka, Wa nika Lubelska, Lublin 2	loartacji, Radom 2 rszawa 2001. 2011.	006.
Supplementary references	1. Zubr	in R., Na	arodziny	Cywiliza	icji kosm	icznej, Pi	ruszyński i	S-ka 2003.		
Organisational unit conducting	Katedra	a Budow	y Maszy	n i Tech	niki Ciej	olnej			Date of issuing the pro	ogramme

the course		
Author of the programme	dr inż. Grzegorz Mieczkowski	2019-09-23

				Bia	ystok U	Appo niversity	endix No 1 to of Techno	o the Directive No 915/2 Dogy	019 of the Rector of .	BUT			
Field of study		Auto	omatic	Contro	l and R	obotics		Degree level and programme type	full-time Bache degree	Ill-time Bachelor's degree			
Specjalization / diploma path		common subject Study profile gen				general acade	nic						
	Environmental management and ecology								MYARS01013				
Course name		Enviror	imentai	manag	ement a	na ecolo	gy	Course type	elective				
Forms and	L	С	LC	Р	SW	FW	S	Semester	1				
of tuition	15	0	0	0	0	0	0	No. of ECTS credits	1				
Entry requirements							-						
Course objectives	Unders the env accoun	tanding vironmer t enviror	the role ntal mar nmental	of the e ageme issues i	nvironme nt syste n busine	ent in soc m in Pol ss.	io-economi and and ir	c development. Acquir the world. Acquiring	sition of knowledge the ability to tal	e about ke into			
Course content	Enviror as the l manag Enviror of env protect EMAS)	nment as basis for ement imental ironmen ion, pro	a mana environ measure manage tal man tection o	gement mental i s, incli- ment in agemer of biodi	object: manager uding o strumen t (e.g. versity).	basic terr nent. Env bjectives ts (legal-a waste m Environr	ns and prot vironmental and prin administrati nanagemen nental mar	blems. The concept of management system ciples of the state's ve, economic, social i t, water and sewag nagement in the ente	sustainable develo in Poland. Environ s environmental mpacts). Selected e management, o erprise (ISO 1400	ainable development pland. Environmental policy. cts). Selected areas anagement, climate se (ISO 14001 and			
l eaching methods	Informa	ative-pro	blem lec	ture;									
Assessment method	Leo	cture: on	e test						1				
Symbol of learning outcome					Learnin	g outcomes			Reference to the le outcomes for the field	arning of study			
LO1	knows explain	and und ing the r	derstand elations	s facts nip betw	and phe	enomena economv	and their and the en	methods and theories	AR1_W09				
LO2	knows concep	and ur t of sust	nderstan ainable (ds the develop	basics ment as	of environthe basis	onmental r for environ	management and the imental management	AR1_W09				
LO3	can ob engine	serve ar er's activ	id interp vity	ret seleo	cted issu	les regard	ding enviror	nmental aspects of the	AR1_W09 AR1_U05	5			
LO4	is read respon	dy to a sibility fo	nalyze or the de	the env cisions i	vironmer made in	ital effec this regar	ts of the d	engineer's work and	AR1_W09 AR1_K03	}			
Symbol of learning outcome			Ν	/lethods c	f assessin	ig the learni	ng outcomes		Type of tuition durin the outcome is as	g which sessed			
LO1	Lecture	e: one te	st;						W				
LO2	Lecture	e: one te	st;						W				
LO3	Lecture	e: one te	st;						W				
LO4	Lecture	e: one te	st;						W				
		attanda		Student w	orkload (in l	nours)			No. of hours				
	Dropor	allenua	looturo t	oot(o)					15				
Calculation	Piepara	ation in	toachor	esi(s) student	sossion	s rolatod	to the mode	module subject 5					
	Farticip		leacher	Sluueni	36331011	STEIdleu			25	25 25			
				Quantit	ative indicat	ors		101/12	Hours	ECTS			
		Student	workload -	activities th	nat require o	lirect teache	r participation		20	0,8			
			Stud	ent worklo	ad - practic	al activities			0	0			
	1. Zarz 2. Eko	ądzanie nomika	środowi i zarząd	skiem, (zanie o	em, (red.) Poskrobko B., PWE, Warszawa 2007. nie ochroną środowiska dla inżynierów, (red.) Broniewic	wicz E., Godlews	ska J.,						
Rasic references	Miłaszewski R., Oficyna Wydawnicza Politechniki Białostockiej, Białystok 2009.												
200101010101000	3. Kow	al E., Ku	PWE, Warszawa 2	2013.									
	4. Gospodarowanie i zarządzanie środowiskiem, (red.) Kryk B., Wydawnictwo Naukowe Uniwersytetu												
	Szczec	ińskiego	<u>, Szczec</u>	<u>2012 :</u>) 		,	· · - · ·					
Supplementary	1. Wyz	wania zi	równowa	iżonego	rozwoju	ı w Polsc	e, (red.) Kr	onenberg J., Bergier	F., Fundacja Send	zimira,			

references	Kraków 2010.							
	2. Niemiec W. i in., Aspekty zarządzania środowiskiem w praktyce inżynierskiej, Oficyna Wydawnicza							
	Poliechniki Rzeszowskiej, Rzeszów 2013.							
	3. Ciechanowicz-McLean J., Prawo ochrony i zarządzania środowiskiem, Difin, Warszawa 2015.							
Organisational unit conducting the course	Katedra Zarządzania Produkcją	Date of issuing the programme						
Author of the programme	dr inż. Joanna Godlewska	2019-09-23						