

S Y L A B U S (KARTA PRZEDMIOTU)

Nazwa programu studiów: USSPR-M-O-I-S-25/26Z						
Moduł: Przedmiot do wyboru [moduł]						
Nazwa przedmiotu: analytical geometry (geometria analityczna) (PODSTAWOWE)					Kod przedmiotu: SPR17AIJ3444_2S	
Nazwa kierunku: matematyka						
Forma studiów: I stopnia lic., stacjonarne		Profil studiów: ogólnoakademicki			Specjalność:	
Status przedmiotu: fakultatywny				Język przedmiotu: semestr: 3 - język angielski		
Rok	Semestr	Forma zajęć	Liczba godzin		Forma zaliczenia	ECTS
				w tym e-learning		
2	3	konwersatorium	30	0	ZO	4
		wykład	30	0	ZO	
Razem			60			4
Koordynator przedmiotu:		dr hab. OLEG BOGOPOLSKIY				
Prowadzący zajęcia:		dr hab. OLEG BOGOPOLSKIY				
Cele przedmiotu:		Learning basic concepts and facts of linear algebra and analytic geometry. Developing the ability to freely use basic concepts and tools of bilinear algebra and analytical geometry over finite dimensional spaces. Shaping awareness of limitations of knowledge and the need for further education				
Wymagania wstępne:		Knowledge of the basic concepts and tools of linear algebra.				
EFEKTY UCZENIA SIĘ						
Kategoria	Lp	KOD	Opis efektu			Odniesienie do efektów dla programu
wiedza	1	EP1	Student knows basic concepts and facts of linear algebra and analytic geometry.			K_W02 K_W03 K_W04 K_W05 K_W09 K_W10
	2	EP3	Student is able to use determinants for recognition of Euclidean spaces			K_W01 K_W02 K_W03 K_W04 K_W09 K_W11 K_W12 K_W13
umiejętności	1	EP2	Student is able to recognize the structure of affine space and its subspace.			K_U01 K_U11 K_U12
	2	EP4	Student is able to diagonalize orthogonal matrices and can classify hypersurfaces of degree 2.			K_U01 K_U12 K_U13 K_U14
kompetencje społeczne	1	EP5	Student knows limitations of his own knowledge and understands the need for further education			K_K01 K_K02

TREŚCI PROGRAMOWE ZAJĘĆ I KONSULTACJI		Semestr	Liczba godzin zajęć	
				w tym e-learning
Przedmiot: analytical geometry (geometria analityczna)				
Forma zajęć: wykład				
1. Bilinear and quadratic forms, matrix of bilinear form, orthogonal spaces, perpendicular bases and orthogonalization methods, Euclidean spaces, Sylvesters theorem, isomorphisms of bilinear spaces.		3	6	0
2. Affine spaces, subspaces of affine spaces, point bases, affine coordinate systems.		3	6	0
3. Affine maps and their relationship with linear maps.		3	6	0
4. Linear and affine Euclidean spaces, Euclidean norm and metric, angles and their measures, linear and affine isometries, classification of plane isometres, Grams matrix and determinant.		3	6	0
5. Hypersurfaces of grade 2: canonical forms, classification of curves and hypersurface of grade 2.		3	6	0
Forma zajęć: konwersatorium				
1. Bilinear and quadratic forms, matrix of bilinear form, orthogonal spaces, perpendicular bases and orthogonalization methods, Euclidean spaces, Sylvesters theorem, isomorphisms of bilinear spaces.		3	9	0
2. Affine spaces, subspaces of affine spaces, point bases, affine coordinate systems.		3	6	0
3. Affine maps and their relationship with linear maps.		3	6	0
4. Linear and affine Euclidean spaces, Euclidean norm and metric, angles and their measures, linear and affine isometries, classification of plane isometres, Grams matrix and determinant.		3	9	0
Metody kształcenia	<p>subject exercises,, problem discussion, seminar lecture, information lecture,</p> <p>W ramach realizacji przedmiotu, sposób wykorzystania sztucznej inteligencji jest określony przez prowadzącego zajęcia zgodnie z najlepszymi praktykami i standardami Uniwersytetu Szczecińskiego. Prowadzący informuje studentów o zakresie oraz możliwościach korzystania z SI podczas pierwszych zajęć, wskazując katalog narzędzi lub zastosowań, dostosowanych do efektów uczenia się oraz potrzeb i możliwości dydaktycznych w ramach danego przedmiotu</p>			
Metody weryfikacji efektów uczenia się				Nr efektu uczenia się z sylabusu
	KOLOKWIUM			EP1,EP2,EP3,EP4,EP5
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)			EP1,EP2,EP3,EP4,EP5
	Metody i formy weryfikacji efektów uczenia się mogą zostać zmienione dla studentów ze szczególnymi potrzebami na warunkach i zasadach określonych w Regulaminie Studiów Uniwersytetu Szczecińskiego.			
Forma i warunki zaliczenia	The final grade is a summary assessment of points from activity (presentation of homework, maximum 50%) and a written test (50%).			
	Zasady wyliczania oceny z przedmiotu			
	The final grade is the arithmetic mean of grades from both forms of classes.			
Metoda obliczania oceny końcowej	Sem.	Przedmiot	Rodzaj zaliczenia	Metoda obl. oceny
	3	analytical geometry (geometria analityczna)		Arytmetyczna
	3	analytical geometry (geometria analityczna) [wykład]	zaliczenie z oceną	
	3	analytical geometry (geometria analityczna) [konwersatorium]	zaliczenie z oceną	
Literatura podstawowa	Igor R. Shafarevich Alexey O. Remizov (2013): Linear Algebra and Geometry, Springer, Berlin, Heidelberg			
Literatura uzupełniająca	Giovanni Landi, Alessandro Zampini (2018): Linear Algebra and Analytic Geometry for Physical Sciences, Springer;			
NAKŁAD PRACY STUDENTA				
		Liczba godzin		
		w tym e-learning		
Zajęcia dydaktyczne		60	0	

Udział w egzaminie/zaliczeniu	4	0
Przygotowanie się do zajęć	10	0
Studiowanie literatury	5	0
Udział w konsultacjach	11	0
Przygotowanie projektu / eseju / itp.	0	0
Przygotowanie się do egzaminu/zaliczenia	10	0
ŁĄCZNY nakład pracy studenta w godz.	100	
Liczba punktów ECTS	4	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USSPR-M-O-II-S-25/26Z-MK						
Unit: Kryptografia 2 (moduł) [moduł]						
Course title: cryptology 2-nd (kryptografia 2) (SPECJALNO CI / SPECJALIZACJE / MODUŁY SPECJALNO CIOWE)					Course code: SPR17AIIJ3444_43S	
Name of field of study: matematyka						
Mode and cycle of study: second degree, full - time		Profile of study: general academic			Specialty: matematyka komputerowa	
Course / module status elective			Language of instruction: semester: 4 - english language			
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
2	4	conversation	30	0	pg	2
Total			30			2
Course / module coordinator		dr hab. OLEG BOGOPOLSKIY				
Course instructor		dr hab. OLEG BOGOPOLSKIY				
Course / module objectives		The aim of the course is to familiarize students with selected advanced techniques of data encryption and acquisition the ability to apply them in practice, as well as the precise formulation of questions for a deep understanding of the topic.				
Prerequisites		Basic knowledge of cryptography and elliptic curves.				
LEARNING OUTCOMES						
Category	No.	Code	Description	Ref. to programme benchmarks		
knowledge	1	EP1	The student has in-depth knowledge of the selected cryptographic systems.	K_W02 K_W03 K_W07 K_W15 SMK_W02		
	2	EP2	The student knows advanced computational techniques supporting encryption and decryption methods	K_W02 K_W03 K_W07 K_W15 SMK_W02		
	3	EP3	The student knows the mathematical foundations of cryptography and their practical applications	K_W02 K_W03 K_W07 K_W15 SMK_W02		
skills	1	EP4	Student understands the mathematical basis of the analysis of algorithms encryption and decryption.	K_U06 K_U17 SMK_U03		
	2	EP5	He can construct encryption algorithms with good numerical properties.	K_U06 K_U17 SMK_U03		
social competences	1	EP6	He is ready to precisely formulate useful questions deepen your understanding of the topic.	K_K01 K_K05 K_K06 SMK_K01 SMK_K02 SMK_K03 SMK_K04		

CONTENT	Semester	No. of hours			
			including e-learning		
Subject title: cryptography 2-nd (kryptografia 2)					
Format of instruction: conversation					
1. Classical symmetric cryptographic systems.	4	2	0		
2. RSA cryptosystem. Cybersecurity and attacks on the RSA.	4	4	0		
3. Discrete logarithm problem. Diffie-Hellman diagram, ElGamal and Massey-Omura systems.	4	4	0		
4. Hidden Monomial Cryptosystems: the Imai-Matsumoto system, Patarin's Little Dragon, Double-Round Quadratic Enciphering.	4	6	0		
5. Arithmetic of elliptic curves over finite fields. Elliptic curve cryptography (ECC).	4	8	0		
6. Hyperelliptic curves and their Jacobians. Hyperelliptic cryptosystems.	4	6	0		
Modes of delivery	Information lecture, explanation, discussion				
	The course teacher shall specify how artificial intelligence should be used as part of implementation of the course according to University of Szczecin best practices and standards. The course teacher shall inform students in their first class about the scope and possibilities of using AI and shall present a catalogue of tools and applications adjusted to relevant learning outcomes and teaching needs and possibilities within a given course.				
Assessment methods			No. of learning outcome from the syllabus		
	SPRAWDZIAN		EP1,EP2,EP3,EP4,EP5		
	PREZENTACJA		EP1,EP2,EP3,EP4,EP5		
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)		EP6		
	Metody i formy weryfikacji efektów uczenia si mog zosta zmienione dla studentów ze szczególnymi potrzebami na warunkach i zasadach okre lonych w Regulaminie Studiów Uniwersytetu Szczeci skiego.				
Grading criteria	The seminar is credited on the basis of activity in the classroom, preparation and presentation of a lecture as well as evaluation that test and written homework. The final grade for the seminar is issued on the basis of the grades from the lecture and the written test.				
	Grade calculation principles				
	The final grade of the subject is the grade from the seminar.				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	cryptography 2-nd (kryptografia 2)		Wa ona	
	4	cryptography 2-nd (kryptografia 2) [konwersatorium]	zaliczenie z ocen		1,00
Basic reading	I. Blake, G. Seroussi, N. Smart (1999): Elliptic curves in cryptography, Cambridge Press				
	N. Koblitz (1998): Algebraic aspects of cryptography, Springer				
Supplementary reading	Andrzej D browski (2014): A family of pairing-friendly superelliptic curves of genus 4, Studia Bezpiecze stwa Narodowego 6 no. 2				

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	30	0
Participation in test / exam	2	0
Preparation for contact hours	2	0
Private reading and studying	3	0

Participation in tutorials	5	0
Preparation of project / essay / etc.	5	0
Preparation for test / exam	3	0
TOTAL workload	50	
ECTS credits	2	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USSPR-M-O-I-S-24/25Z-MK							
Unit: Przedmiot do wyboru (2) [moduł]							
Course title: cryptography (kryptografia) (SPECJALNO CI / SPECJALIZACJE / MODUŁY SPECJALNO CIOWE)					Course code: SPR17AIJ3444_10S		
Name of field of study: matematyka							
Mode and cycle of study: first-degree, full - time			Profile of study: general academic		Specialty: matematyka komputerowa		
Course / module status elective				Language of instruction: semester: 6 - english language polish language			
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				including e-learning			
3	6	conversation	30	0	pg	4	
Total			30			4	
Course / module coordinator		dr hab. TOMASZ J DRZEJAK					
Course instructor		dr hab. OLEG BOGOPOLSKIY					
Course / module objectives		Provide knowledge of the main principles of symmetric and asymmetric cryptosystems and some of the main encryption systems and their mathematical foundations					
Prerequisites		Basic knowledge of arithmetic and prime numbers.					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	The student has deepened knowledge of the most important cryptosystems and their mathematical foundations, as well as the possible attacks on these systems.	SMK_W01			
	2	EP2	The student understands the recent developments and challenges in cryptography.	SMK_W01			
skills	1	EP3	The student is able to apply the cryptosystems and to prove their properties.	SMK_U01			
social competences	1	EP4	The student is ready to find necessary information in the literature, also in foreign languages.	SMK_K02			
	2	EP6	The student understands the need for further research in cryptography.	SMK_K02			
CONTENT					Semester	No. of hours	
						including e-learning	
Subject title: cryptography (kryptografia)							
Format of instruction: conversation							
1. Background from number theory					6	5	0
2. Symmetric Cryptosystems					6	1	0
3. AES					6	3	0
4. Asymmetric Cryptosystems					6	1	0
5. Primality Testing					6	3	0
6. RSA and Rabin encryption					6	5	0

7. Discrete Logarithm Cryptographic Schemes		6	1	0	
8. Diffie-Hellman key exchange		6	1	0	
9. ElGamal		6	3	0	
10. Elliptic curve cryptography		6	3	0	
11. Hash Functions and applications		6	3	0	
12. Security Questions and Attacks		6	1	0	
Modes of delivery	information lecture, seminar lecture, homework assignment, analysis and discussion of solutions of the tasks				
	The course teacher shall specify how artificial intelligence should be used as part of implementation of the course according to University of Szczecin best practices and standards. The course teacher shall inform students in their first class about the scope and possibilities of using AI and shall present a catalogue of tools and applications adjusted to relevant learning outcomes and teaching needs and possibilities within a given course.				
Assessment methods				No. of learning outcome from the syllabus	
	SPRAWDZIAN			EP1,EP2,EP3,EP6	
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)			EP1,EP2,EP3,EP4,EP6	
	Metody i formy weryfikacji efektów uczenia si mog zosta zmienione dla studentów ze szczególnymi potrzebami na warunkach i zasadach okre lonych w Regulaminie Studiów Uniwersytetu Szczeci skiego.				
Grading criteria	To pass the course the student needs to pass the test.				
	Grade calculation principles				
	The final grade is the one obtained on the seminar.				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	cryptography (kryptografia)		Wa ona	
	6	cryptography (kryptografia) [konwersatorium]	zaliczenie z ocen		1,00
Basic reading	J. A. Buchmann (2004): Introduction to Cryptography. Undergraduate Texts in Mathematics, Springer				
Supplementary reading	Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone (1996): Handbook of Applied Cryptography, CRC Press				
	C. Vanden Eynden (2001): Elementary Number Theory, McGraw-Hill				
	Neal Koblitz (1994): A course in number theory and cryptography, Springer GTM 114				
STUDENT WORKLOAD					
		No. of hours			
		including e-learning			
Contact hours	30		0		
Participation in test / exam	4		0		
Preparation for contact hours	20		0		
Private reading and studying	20		0		
Participation in tutorials	16		0		
Preparation of project / essay / etc.	0		0		
Preparation for test / exam	10		0		
TOTAL workload	100				
ECTS credits	4				

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USSPR-M-O-I-S-24/25Z						
Unit: Przedmiot do wyboru: [moduł]						
Course title: mathematical analysis 3 (analiza matematyczna 3) (KIERUNKOWE)					Course code: SPR17AIJ3444_4S	
Name of field of study: matematyka						
Mode and cycle of study: first-degree, full - time			Profile of study: general academic		Specialty:	
Course / module status elective			Language of instruction: semester: 5 - english language			
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
3	5	conversation	15	0	pg	3
		lecture	15	0	e	
Total			30			3
Course / module coordinator		dr EWA CIECHANOWICZ				
Course instructor		dr EWA CIECHANOWICZ				
Course / module objectives		The aim of the lecture is to familiarize students with elementary notions and theorems of complex analysis in one variable and with suitable examples Workshops aim to prepare students to apply their knowledge to solve problems within the domain of complex analysis in one variable. Moreover, the workshops help to develop reasoning and argumentative abilities.				
Prerequisites		The requirement is knowledge of analysis of real functions in one and two variables.				
LEARNING OUTCOMES						
Category	No.	Code	Description	Ref. to programme benchmarks		
knowledge	1	EP1	Student knows basic definitions and theorems of complex analysis.	K_W03 K_W07		
	2	EP2	Student knows basics of differential and integral calculus of functions of one complex variable.	K_W03 K_W07		
skills	1	EP3	Student is able to, in a comprehensible way, orally and in writing present correct mathematical reasoning within the scope of topics covered, formulate theorems and definitions.	K_U01 K_U02		
	2	EP4	Student is able to, at introductory and intermediate level, compute limits of complex sequences and functions, examine convergence of complex series.	K_U06		
	3	EP5	Student is able to, applying methods and theorems of complex calculus examine differentiability of a function.	K_U07		
	4	EP6	Student is able to compute curvilinear integrals in the complex domain at introductory and intermediate level.	K_U08		
social competences	1	EP7	Student is ready to formulate questions aimed at deepening his/her understanding of the topics covered by the course and critically assess his/her own knowledge.	K_K01		
	2	EP8	Student knows the limitations of his/her knowledge and understands the need for further learning.	K_K01		
CONTENT					Semester	No. of hours
						including e-

					learning
Subject title: mathematical analysis 3 (analiza matematyczna 3)					
Format of instruction: lecture					
1. Complex numbers.		5	2	0	
2. Sequences and series of complex numbers.		5	2	0	
3. Complex functions. Limits and continuity.		5	2	0	
4. Power series.		5	2	0	
5. Elementary complex functions.		5	2	0	
6. Complex derivative. Holomorphic functions.		5	2	0	
7. Complex integral.		5	3	0	
Format of instruction: conversation					
1. Complex numbers.		5	2	0	
2. Sequences and series of complex numbers.		5	2	0	
3. Complex functions. Limits and continuity.		5	2	0	
4. Power series.		5	2	0	
5. Elementary complex functions.		5	2	0	
6. Complex derivative. Holomorphic functions.		5	2	0	
7. Complex integral.		5	3	0	
Modes of delivery	Informative lecture, workshop instructions, explanation, discussion.				
	The course teacher shall specify how artificial intelligence should be used as part of implementation of the course according to University of Szczecin best practices and standards. The course teacher shall inform students in their first class about the scope and possibilities of using AI and shall present a catalogue of tools and applications adjusted to relevant learning outcomes and teaching needs and possibilities within a given course.				
Assessment methods				No. of learning outcome from the syllabus	
	EGZAMIN PISEMNY			EP1,EP2,EP3,EP4,EP5,EP6	
	KOLOKWIUM			EP1,EP2,EP4,EP5,EP6	
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)			EP1,EP2,EP3,EP4,EP5,EP6,EP7,EP8	
	Metody i formy weryfikacji efektów uczenia si mog zosta zmienione dla studentów ze szczególnymi potrzebami na warunkach i zasadach okre lonych w Regulaminie Studiów Uniwersytetu Szczeci skiego.				
Grading criteria	In order to get a credit for the course a student needs to get a positive mark for both workshops and lectures.				
	Grade calculation principles				
	The final grade is an arithmetic average of grades for both components.				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	mathematical analysis 3 (analiza matematyczna 3)		Arytmetyczna	
	5	mathematical analysis 3 (analiza matematyczna 3) [wykład]	egzamin		
	5	mathematical analysis 3 (analiza matematyczna 3) [konwersatorium]	zaliczenie z ocen		
Basic reading	Fisher, S. (1999): Complex Variables, Dover Publ., Mineola, New York				
Supplementary reading	Conway, J. (1978): Functions of One Complex Variable, I, Springer, New York				

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	30	0
Participation in test / exam	4	0
Preparation for contact hours	15	0
Private reading and studying	6	0
Participation in tutorials	10	0
Preparation of project / essay / etc.	0	0
Preparation for test / exam	10	0
TOTAL workload	75	
ECTS credits	3	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USSPR-M-O-II-S-26/27Z							
Unit: Przedmiot monograficzny I [moduł]							
Course title: Monographic Course I (przedmiot monograficzny I) (KIERUNKOWE)					Course code: SPR17AIIJ3444_8S		
Name of field of study: matematyka							
Mode and cycle of study: second degree, full - time			Profile of study: general academic		Specialty:		
Course / module status elective				Language of instruction: semester: 2 - english language			
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				including e-learning			
1	2	conversation	10	0	pg	4	
		lecture	20	0	pg		
Total			30			4	
Course / module coordinator		dr EWA CIECHANOWICZ					
Course instructor		dr hab. FRANCISZEK PRUS-WI NIOWSKI					
Course / module objectives		Familiarizing students with the newest scientific achievements in the chosen branch of mathematics. Acquiring by students the ability to apply methods and techniques of the chosen branch of mathematics Acquiring by students the willingness to deepen their knowledge					
Prerequisites		Familiarity with the courses covered during the undergraduate studies in mathematics					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	Student has a deepened knowledge in the chosen branch of mathematics, is familiar with most of the classical definitions and theorems with their proof.	K_W03			
	2	EP2	Understands formulation of a variety of unsolved research problems	K_W04			
skills	1	EP3	Has the ability to verify correctness of the reasoning in formal proofs	K_U01 K_U14			
	2	EP4	Is able to, on the advanced level encompassing modern mathematics, apply and present both in speech and in writing the methods of at least one chosen branch of mathematics: mathematical analysis and functional analysis, theory of differential equations and dynamical systems, algebra and number theory, geometry and topology, probability and statistics, discrete mathematics and graph theory, mathematical logic and set theory	K_U09 K_U12			
social competences	1	EP5	Is oriented towards precise formulation of questions serving to deepen the understanding of a given topic or to find the missing parts of a reasoning	K_K01 K_K04			
CONTENT					Semester	No. of hours	
						including e-learning	
Subject title: Monographic Course I (przedmiot monograficzny I)							
Format of instruction: lecture							
1. Depending on the topic of the monographic course					2	20	0

Format of instruction: conversation					
1. depending on the topic of the monographic course			2	10	0
Modes of delivery	Interactive lecture, discussion, individual problem solving exercises (seminar), Informative lecture (lectures)				
	The course teacher shall specify how artificial intelligence should be used as part of implementation of the course according to University of Szczecin best practices and standards. The course teacher shall inform students in their first class about the scope and possibilities of using AI and shall present a catalogue of tools and applications adjusted to relevant learning outcomes and teaching needs and possibilities within a given course.				
Assessment methods				No. of learning outcome from the syllabus	
	KOLOKWIUM			EP1,EP2,EP3,EP4	
	SPRAWDZIAN			EP1,EP2,EP4	
	PREZENTACJA			EP1,EP2,EP3,EP4,EP5	
Metody i formy weryfikacji efektów uczenia się mogą zostać zmienione dla studentów ze szczególnymi potrzebami na warunkach i zasadach określonych w Regulaminie Studiów Uniwersytetu Szczecińskiego.					
Grading criteria	<p>The seminar is graded on the basis of the written test with open questions and presentation of homework assignments or chosen specific topics.</p> <p>The lecture is graded on the basis of oral test consisting of open questions.</p> <p>Achievements of students and in particular their final results are graded according to the following scale:</p> <p>5,0 - at least 91% 4,5 - at least 81% 4,0 - at least 71% 3,5 - at least 61% 3,0 - at least 51 % 2,0 (failing grade) - below 51 %</p>				
	Grade calculation principles				
	The final grade is given on the basis of the arithmetic mean of grades from both forms of classes				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Monographic Course I (przedmiot monograficzny I)		Arytmetyczna	
	2	Monographic Course I (przedmiot monograficzny I) [konwersatorium]	zaliczenie z ocen		
	2	Monographic Course I (przedmiot monograficzny I) [wykład]	zaliczenie z ocen		
Basic reading	Zależnie od tematu wykładu monograficznego				
Supplementary reading	Zależnie od tematu wykładu monograficznego				
STUDENT WORKLOAD					
			No. of hours		
			including e-learning		
Contact hours	30		0		
Participation in test / exam	5		0		
Preparation for contact hours	20		0		
Private reading and studying	15		0		
Participation in tutorials	10		0		
Preparation of project / essay / etc.	10		0		
Preparation for test / exam	10		0		
TOTAL workload	100				
ECTS credits	4				