

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-II-S-22/23Z-DiP S							
Course title: Probiotics and food allergies in the athlete's practice (SPECJALNO CI / SPECJALIZACJE / MODUŁY SPECJALNO CIOWE)					Course code: KFZ113AIJ3451_9S		
Name of field of study: diagnostyka sportowa							
Mode and cycle of study: second degree, full - time		Profile of study: general academic			Specialty: diagnoza i planowanie ywienia sportowca		
Course / module status obligatory			Language of instruction: semester: 4 - polish language				
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				w tym e-learning			
2	4	discussion classes	20	0	pg	3	
		lecture	10	0	pg		
Total			30			3	
Course / module coordinator		dr MAREK KOLBOWICZ					
Course instructor		dr in . ANNA KRAJEWSKA-P DZIK					
Course / module objectives		<p>The aim of the course is to familiarize students with allergies, their causes and the importance of probiotics in an athlete's life.</p> <p>The student's acquisition of the ability to classify allergies.</p> <p>Developing an attitude of readiness in students to take action to diagnose and minimize the effects of allergies.</p>					
Prerequisites		Basic knowledge of supplementation and nutrition.					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	Has knowledge of nutrition and supplementation in sport.	K_W15 K_W18			
	2	EP2	He knows what probiotics are and knows how they affect the sports level in various age categories. He knows and understands the phenomenon of food allergies.	K_W08 K_W09 K_W15 K_W18			
skills	1	EP3	Can show the relationship between eating habits and food allergies. Can define the role and importance of probiotics in highly qualified and amateur sport.	K_U07 K_U08 K_U14			
	2	EP4	Has the ability to transfer knowledge about the role of probiotics in our lives.	K_U07 K_U12			
social competences	1	EP5	Is aware of the need to apply knowledge about food allergies and their impact on the level of physical activity and highly qualified sports.	K_K07			
CONTENT					Semester	No. of hours	
						w tym e-learning	
Subject title: Probiotics and food allergies in the athlete's practice							
Format of instruction: lecture							
1. Characteristics of probiotic strains and their role in sport.					4	3	0
2. Food allergies (IgA. / IgG-dependent) and immediate (IgE-dependent).					4	4	0
3. Probiotic therapy in sport.					4	3	0

Format of instruction: discussion classes				
1. Review of delayed allergy tests, characteristics - advantages and disadvantages.		4	5	0
2. Probiotic therapy in the practice of an athlete.		4	5	0
3. Food allergies in the practice of an athlete.		4	5	0
4. Nutrition in food allergies at different stages of life.		4	5	0
Modes of delivery	Lectures, multimedia presentations, discussions, independent classes.			
Assessment methods				No. of learning outcome from the syllabus
	KOLOKWIUM			EP1,EP2,EP3,EP4,EP5
	PREZENTACJA			EP2,EP3
	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	The condition for obtaining a credit is: 1. Presence and active participation in classes. 2. Positive evaluation of the presentation. 3. Positive assessment of the test.			
	Grade calculation principles			
	The final grade is the arithmetic mean of: 1. Presentation - 25% of the final grade. 2. Colloquium of exercises - 25% of the final grade. 3. Colloquium of lectures - 50% of the final grade.			
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method
	4	probiotyki i alergie pokarmowe w praktyce sportowca		Arytmetyczna
	4	probiotyki i alergie pokarmowe w praktyce sportowca [wykład]	zaliczenie z ocen	
	4	probiotyki i alergie pokarmowe w praktyce sportowca [wiczenia]	zaliczenie z ocen	
Basic reading	G. Zydek, M. Michalczyk, A. Zajac (2017): Nowe trendy w żywieniu i suplementacji osób aktywnych fizycznie, AWF Katowice, Katowice			
	H. Ciborowska, A. Rudnicka (2014): Dietetyka żywienie zdrowego i chorego człowieka, PZWL, Warszawa			
	J. Gawłcki, L. Hryniewiecki (1998): Żywienie człowieka. Podstawy nauki o żywieniu, PWN, Warszawa			
	O. Lafay (2015): Skuteczne odżywianie w treningu i sporcie, FitActive, Łódź			
Supplementary reading				
STUDENT WORKLOAD				
		No. of hours		
		W tym e-learning		
Contact hours	30		0	
Participation in test / exam	2		0	
Preparation for contact hours	7		0	
Private reading and studying	7		0	
Participation in tutorials	14		0	
Preparation of project / essay / etc.	6		0	
Preparation for test / exam	9		0	
TOTAL workload	75			
ECTS credits	3			

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-II-S-23/24Z						
Unit: Przedmiot do wyboru w j. z. angielskim [moduł]						
Course title: genetic basis of health (POZOSTAŁE PRZEDMIOTY / MODUŁY)					Course code: KFZ113AIIJ3451_44S	
Name of field of study: diagnostyka sportowa						
Mode and cycle of study: second degree, full - time			Profile of study: general academic		Specialty:	
Course / module status elective			Language of instruction: semester: 1 - english language polish language			
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				w tym e-learning		
1	1	discussion classes	15	0	pg	3
		lecture	5	0	pg	
Total			20			3
Course / module coordinator		dr hab. MAREK SAWCZUK				
Course instructor		dr in . JAKUB SKORUPSKI				
Course / module objectives		Presentation of the basic concepts, regularities and problems regarding the genetic basis of human health. Acquainting with substituted elements of clinical genetics related to metabolic disorders and risk factors for human injuries. Acquiring the ability to recognize the basic symptoms of human genetic disorders.				
Prerequisites		Podstawowa wiedza z zakresu genetyki i biologii komórki.				
LEARNING OUTCOMES						
Category	No.	Code	Description	Ref. to programme benchmarks		
knowledge	1	EP3	The student understands the contribution of genetic factors in the metabolism of basic nutrients and maintenance of homeostasis and adaptation processes to environmental changes.	K_W08 K_W15		
	2	EP8	The student has knowledge about the importance of genetic variants as genetic risk factors for injury in sports players.	K_W09 K_W17		
skills	1	EP4	Student is able to recognize the basic symptoms of genetically determined metabolic blocks occurring in humans.	K_U08 K_U14		
	2	EP5	The student has the ability to identify problems in the field of clinical genetics and knows the basic ways to solve them.	K_U08 K_U10		
social competences	1	EP6	The student is eager to interact with other team members to solve genetic problems.	K_K03 K_K05 K_K07		
	2	EP7	The student actively promotes and popularizes knowledge of clinical genetics in a sports environment.	K_K04		
CONTENT					Semester	No. of hours
						w tym e-learning
Subject title: genetic basis of health						
Format of instruction: lecture						

1. Budowa DNA i RNA	1	2	0		
2. Mechanisms of genetic expression	1	3	0		
Format of instruction: discussion classes					
1. Introduction to human genetics with elements of clinical genetics	1	3	0		
2. Scheme of autosomal and sex-linked inheritance in humans	1	3	0		
3. Principles of multifactorial inheritance in humans	1	3	0		
4. Genetic basis of carbohydrate and protein metabolism disorders	1	3	0		
5. Genetic basis of lipid metabolism and metal absorption disorders	1	3	0		
Modes of delivery	wykłady prowadzone w formie informacyjno-konwersatoryjnej z wykorzystaniem prezentacji multimedialnych, wiczenia audytoryjne prowadzone metoda pracy w grupach				
Assessment methods			No. of learning outcome from the syllabus		
	KOLOKWIUM		EP3,EP8		
	SPRAWDZIAN		EP4,EP5		
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)		EP6,EP7		
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	Completing lectures: final grade from lectures issued on the basis of colloquium grade. Completion of classes: final grade from exercises based on the test grade and activity in the classes.				
	Grade calculation principles				
	The final grade for the subject is calculated on the basis of the final grade of the exercises and the grade of the exam in a 1: 1 ratio.				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	genetic basis of health		Arytmetyczna	
	1	genetic basis of health [wiczenia]	zaliczenie z ocen		
	1	genetic basis of health [wykład]	zaliczenie z ocen		
Basic reading	Brown T.A. (Red.) (2015): Genomy, Wydawnictwo PWN				
	Connor M, Ferguson-Smith M. (1998): Podstawy genetyki klinicznej, Wydawnictwo PZWL				
	Jorde LB (Red.) (2000): Genetyka medyczna, Wydawnictwo Czelej				
Supplementary reading	W gle ski P. (Red.) (2012): Genetyka molekularna, Wydawnictwo PWN				
STUDENT WORKLOAD					
		No. of hours			
		W tym e-learning			
Contact hours	20		0		
Participation in test / exam	4		0		
Preparation for contact hours	10		0		
Private reading and studying	15		0		
Participation in tutorials	10		0		
Preparation of project / essay / etc.	0		0		
Preparation for test / exam	16		0		

TOTAL workload	75
ECTS credits	3

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-I-S-22/23Z						
Unit: Moduł A: genetyka w sporcie						
Course title: Genetic diagnostics in sport (POZOSTAŁE PRZEDMIOTY / MODUŁY)					Course code: US113AIJ2451_36S	
Name of field of study: diagnostyka sportowa						
Mode and cycle of study: first-degree, full - time			Profile of study: general academic		Specialty:	
Course / module status elective				Language of instruction: semester: 4 - polish language		
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				w tym e-learning		
2	4	laboratory	30	0	e	3
Total			30			3
Course / module coordinator		dr n. med. ANNA NOWAKOWSKA				
Course instructor		dr n. med. ANNA NOWAKOWSKA				
Course / module objectives		Acquainting with issues in the field of molecular and genetic diagnostics in sport				
Prerequisites		Zaliczenie przedmiotu "Wybrane zagadnienia z biologii człowieka" Zaliczenie przedmiotu "Genetyka człowieka z elementami genetyki klinicznej"				
LEARNING OUTCOMES						
Category	No.	Code	Description			Ref. to programme benchmarks
knowledge	1	EP1	The student knows what lies at the basis of human genetic variability, knows the impact of molecular differences on the exercise and post-exercise variable adaptation of the human body.			K_W02
	2	EP2	The student knows the conditions for maintaining a dynamic balance of the environment of processes taking place in the body at the molecular level, taking into account the specificity of physical activity			K_W04
	3	EP3	The student has basic knowledge regarding the planning and use of techniques and methods in the field of genetic sports diagnostics			K_W13

skills	1	EP4	The student knows how to make basic measurements in the field of sport genetics and their evaluation and the use of techniques and methods of molecular sports diagnostics	K_U02
	2	EP5	The student is able to use the basic methods of numerical data analysis for the initial verification of the results generated during the experiment in the field of sport diagnostics	K_U06
	3	EP6	The student is able to supplement the safety data sheet of an athlete or amateur with the data generated in the genetic experiment and interpret the results obtained	K_U10
	4	EP7	The student knows how to apply the right research methodology in the field of sport genetics for the purpose of conducting a research experiment	K_U11
	5	EP8	The student is able to independently plan and perform laboratory analyses in the field of molecular genetics and is able to prepare appropriate documentation of the experiment	K_U12
social competences	1	EP9	The student is aware of the need to critically assess the level of his knowledge and professional competence	K_K01
	2	EP10	The student complies with the rules of honesty in science, while respecting the provisions of law relating to issues related to diagnostics and sport.	K_K02
	3	EP11	The student shows respect and understanding towards people with whom he cooperates during the implementation of research projects and tasks	K_K03
	4	EP12	The student is able to effectively provide information in the field of sports diagnostics	K_K06
	5	EP13	The student is oriented on self-improvement aimed at continuous improvement of knowledge	K_K07
CONTENT			Semester	No. of hours
				w tym e-learning
Subject title: Genetic diagnostics in sport				
Format of instruction: laboratory				
1. Izolacja RNA z krwi pełnej			4	5
2. Reakcja Real-Time PCR w odmianie ilościowej			4	5
3. Określanie płci człowieka z wykorzystaniem reakcji PCR - analiza genu amelogeniny			4	5
4. Elektroforeza w celu poliakrylamidowym			4	5
5. Analiza sekwencji mini i mikrosatelitarnych -analiza polimorfizmu w regionie LPR genu HTT			4	5
6. Przeprowadzenie sekwencjonowania wybranego fragmentu regionu			4	5
Modes of delivery	wiczenia laboratoryjne prowadzone metodą pracy w grupach, Rozwiązywanie problemów związanych z pracą w laboratorium (dobór metody analiz, opracowanie metodyki badań, trudności w interpretacji wyników), wiczenia eksperymentalne połączone z dyskusją			
Assessment methods				No. of learning outcome from the syllabus
	KOŁOKWIUM			EP1,EP2,EP3,EP4,EP5,EP6,EP7,EP8
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)			EP10,EP11,EP12,EP13,EP4,EP5,EP7,EP8,EP9
	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	Passing classes: based on the activity during the classes and the results of the test				
	Grade calculation principles				
	The final grade of the subject is issued on the basis of the final grade of the test and evaluation of the activity during the classes				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	diagnostyka genetyczna w sporcie		Ważona	
	4	diagnostyka genetyczna w sporcie [laboratorium]	egzamin		1,00
Basic reading	Cińczyk P. (2021): Genetyka sportowa, PZWL, Warszawa				
	Cińczyk P., Maciejewska A., Sawczuk M. (2008): Badania genetyczne w sporcie, Wydawnictwo Qprint, Szczecin				
	Słomski R. (2011): Analiza DNA. Teoria i praktyka, Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu, Poznań				
Supplementary reading	O'Connell K i wsp. (2013): Collagen gene sequence variants in exercise-related traits, Central European Journal of Sport Sciences and Medicine 1: 3–17				
	Posthumus M. Collins M. (2016): Genetics and Sports, Wydawnictwo Karger				
	Sawczuk M. i wsp. (2011): The role of genetic research in sport, Science & Sports 26: 251-258				
	Wang G. i wsp. (2013): Czy w sporcie miarodajne są testy genetyczne?, Sport Wyczynowy 3-4 (547-548): 68-83 2013				

STUDENT WORKLOAD

	No. of hours	
		W tym e-learning
Contact hours	30	0
Participation in test / exam	2	0
Preparation for contact hours	18	0
Private reading and studying	5	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: USKFZ-DS-O-II-S-23/24Z							
Unit: Przedmiot do wyboru w j. z. angielskim [moduł]							
Course title: epigenetics (POZOSTAŁE PRZEDMIOTY / MODUŁY)					Course code: KFZ113AIIJ3451_51S		
Name of field of study: diagnostyka sportowa							
Mode and cycle of study: second degree, full - time			Profile of study: general academic		Specialty:		
Course / module status elective			Language of instruction: semester: 1 - english language polish language				
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				w tym e-learning			
1	1	laboratory	15	0	pg	3	
		lecture	5	0	pg		
Total			20			3	
Course / module coordinator		dr hab. MAREK SAWCZUK					
Course instructor		dr hab. MAREK SAWCZUK					
Course / module objectives		Presentation of the latest information on epigenetic issues Acquaintance with epigenetic regulation of gene expression Acquiring the ability to choose and apply research techniques used in epigenetic analyzes					
Prerequisites		Podstawowa wiedza z zakresu genetyki i biologii komórki					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	The student knows the epigenetic mechanisms and their meaning in the human body	K_W12 K_W13			
	2	EP2	The student knows the principles of epigenetic expression regulation genes	K_W12 K_W13 K_W16 K_W17			
skills	1	EP3	The student is able to propose an adequate research technique for epigenetic analyzes	K_U08 K_U10 K_U12			
social competences	1	EP4	The student is willing to interact with other team members to solve diagnostic tasks	K_K03 K_K05 K_K07			
CONTENT					Semester	No. of hours	
							w tym e-learning
Subject title: epigenetics							
Format of instruction: lecture							
1. Mechanizmy metylacji DNA					1	2	0
2. Modyfikacje epigenetyczne niekoduj. cęgo RNA					1	2	0
3. Molekularne mechanizmy modyfikacji histonów					1	1	0
Format of instruction: laboratory							
1. Analizy metylacji DNA w obr. bie genów					1	3	0

2. Analizy modyfikacji histonów w całym genomie		1	3	0	
3. Imprinting genomowy		1	3	0	
4. Wpływ diety na procesy epigenetyczne		1	3	0	
5. Epigenetyka procesów pamięci oraz w chorobach neurologicznych		1	3	0	
Modes of delivery	wiczenia laboratoryjne prowadzone metod pracy w grupach, wykłady prowadzone w formie informacyjno-konwersatoryjnej z wykorzystaniem prezentacji multimedialnych				
Assessment methods				No. of learning outcome from the syllabus	
	KOLOKWIUM			EP1	
	SPRAWDZIAN			EP2,EP3	
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)			EP4	
	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	Completing lectures: final grade from lectures issued on the basis of colloquium grade. Completion of classes: final grade from exercises based on the test grade and activity in the classes.				
	Grade calculation principles				
	The final grade for the subject is calculated on the basis of the final grade of the exercises and the grade of the exam in a 1: 1 ratio.				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	epigenetics		Arytmetyczna	
	1	epigenetics [laboratorium]	zaliczenie z ocen		
	1	epigenetics [wykład]	zaliczenie z ocen		
Basic reading	Moore DS. (2017): Behavioral epigenetics, Jan;9(1), Wiley Interdiscip Rev Syst Biol Med. , Poznan				
	Potaczek DP. et al. (2017): Epigenetics and allergy: from basic mechanisms to clinical applications, Apr;9(4):539-571, Epigenomics, Łódź				
	Sapienza C., Issa JP. (2016): Diet, Nutrition, and Cancer Epigenetics, Jul 17;36: 665-81, Annu Rev Nutr.				
Supplementary reading	Cieszczyk P i in. (2008): Badania genetyczne w sporcie, International Association of Ontokinesiologists				
STUDENT WORKLOAD					
		No. of hours			
		W tym e-learning			
Contact hours	20		0		
Participation in test / exam	4		0		
Preparation for contact hours	10		0		
Private reading and studying	15		0		
Participation in tutorials	10		0		
Preparation of project / essay / etc.	0		0		
Preparation for test / exam	16		0		
TOTAL workload	75				
ECTS credits	3				

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-I-S-21/22Z							
Course title: pierwsza pomoc (KIERUNKOWE)					Course code: KFZ113AIJ3451_13S		
Name of field of study: diagnostyka sportowa							
Mode and cycle of study: first-degree, full - time			Profile of study: general academic		Specialty:		
Course / module status obligatory			Language of instruction: semester: 4 - polish language				
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				w tym e-learning			
2	4	discussion classes	10	0	pg	1	
Total			10			1	
Course / module coordinator		dr MACIEJ ZAWADZKI					
Course instructor		dr EL BIETA SIE KO-AWIERIANÓW					
Course / module objectives		Familiarizing students with the theoretical and practical basics of pre-medical first aid. Acquisition of teamwork skills. Acquisition of skills to provide first aid to the injured.					
Prerequisites		none					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	the student knows the symptoms of basic disorders of the body's functioning.	K_W04			
	2	EP2	the student knows the theoretical basics of first aid	K_W09			
skills	1	EP3	the student is able to identify the problems of a person in a situation threatening his health and life.	K_U04			
	2	EP4	the student is able to take action to save human health and life	K_U04			
social competences	1	EP5	the student is aware of his own limitations and knows when to turn to experts.	K_K01			
	2	EP6	the student provides assistance in a way that ensures their own safety and that of the environment.	K_K08			
	3	EP7	The student is convinced of the need to help the injured in accordance with the law.	K_K02			
CONTENT					Semester	No. of hours	
						w tym e-learning	
Subject title: pierwsza pomoc							
Format of instruction: discussion classes							
1. The importance of first aid for human health and life. Legal aspects of first aid.					4	1	0
2. Characteristics of basic activities that save the health and life of a child and an adult. Cardiopulmonary resuscitation.					4	3	0
3. Principles of first aid in special situations: choking, fainting and fainting, burns, hypothermia, heat stroke, cerebral stroke, electric shock, poisoning, special accidents.					4	4	0
4. Accidents in schools and educational institutions.					4	2	0
Modes of delivery		multimedia presentation, seminars, demonstration with explanation, situational method, simulation method					

Assessment methods					No. of learning outcome from the syllabus
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)				EP1,EP2,EP3,EP4,EP5,EP6,EP7
	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	Grading the course. Determining the final grade on the basis of attendance at the exercises, grades from individual practical exercises				
	Grade calculation principles				
	Grading the course. Determining the final grade on the basis of attendance at the exercises, grades from individual practical exercises				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	pierwsza pomoc		Wa ona	
	4	pierwsza pomoc [wiczenia]	zaliczenie z ocen		1,00
Basic reading	Polska Rada Resuscytacji (2016): Wytyczne resuscytacji 2015, Copyright for the Polish edition by Polska Rada., Kraków?				
Supplementary reading					

STUDENT WORKLOAD

	No. of hours	
		W tym e-learning
Contact hours	10	0
Participation in test / exam	2	0
Preparation for contact hours	4	0
Private reading and studying	3	0
Participation in tutorials	3	0
Preparation of project / essay / etc.	0	0
Preparation for test / exam	3	0
TOTAL workload	25	
ECTS credits	1	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-II-S-22/23Z-DiP S							
Course title: Supplementation in selected sport (SPECJALNO CI / SPECJALIZACJE / MODUŁY SPECJALNO CIOWE)					Course code: KFZ113AIIJ3451_4S		
Name of field of study: diagnostyka sportowa							
Mode and cycle of study: second degree, full - time		Profile of study: general academic			Specialty: diagnoza i planowanie ywienia sportowca		
Course / module status obligatory			Language of instruction: semester: 3 - polish language				
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				w tym e-learning			
2	3	discussion classes	30	0	pg	5	
		lecture	15	0	e		
Total			45			5	
Course / module coordinator		dr MACIEJ BURYTA					
Course instructor		dr MAREK KOLBOWICZ					
Course / module objectives		The aim of the course is to acquire knowledge and skills in the field of forecasting supplementation in selected motor abilities and to focus it on individual sports disciplines.					
Prerequisites		Basic knowledge about supplementation in professional and amateur sports.					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	He has knowledge in the field of nutrition and supplementation in sport.	K_W08			
	2	EP2	He knows what type of supplementation should be used in sports training in selected motor skills.	K_W06 K_W08			
skills	1	EP3	He is able to independently analyze, interpret and choose an appropriate diet for selected sports disciplines.	K_U07 K_U08			
	2	EP4	He has the ability to independently search for the necessary data in the literature related to the supplementation of an athlete.	K_U14			
social competences	1	EP5	He is aware of his role in shaping eating habits and the correct use of supplementation in selected sports.	K_K08			
	2	EP6	He understands the need for further self-education in the field of supplementation in sports.	K_K02 K_K06			
CONTENT					Semester	No. of hours	
						w tym e-learning	
Subject title: Supplementation in selected sport							
Format of instruction: lecture							
1. Basics of supplementation in sport					3	3	0
2. Supplementation helpful in post-workout fatigue					3	3	0
3. Supplementation supporting the development of strength					3	3	0
4. Supplementation supporting the development of muscle endurance					3	3	0

5. Supplementation supporting the reduction of adipose tissue		3	3	0	
Format of instruction: discussion classes					
1. individualization of supplementation depending on the needs of the discipline		3	5	0	
2. Supplementation to minimize the risk of injury		3	5	0	
3. Supplementation supporting the athlete's immunity		3	5	0	
4. Supplementation in team sports		3	5	0	
5. Supplementation in speed and strength sports		3	5	0	
6. Supplementation in endurance sports		3	5	0	
Modes of delivery	lectures, multimedia presentations, discussion, practical classes				
Assessment methods				No. of learning outcome from the syllabus	
	EGZAMIN PISEMNY			EP1,EP2,EP3,EP4	
	KOLOKWIUM			EP2,EP3,EP4,EP5	
	PREZENTACJA			EP1,EP2,EP3,EP4,EP5,EP6	
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	The condition for obtaining a credit is: 1. Presence and active participation in classes 2. Positive evaluation of the presentation 3. Positive assessment of the test 4. Positive exam grade				
	Grade calculation principles				
	The final grade is the arithmetic mean of: 1. Presentation and test - 50% of the final grade 2. Exam - 50% of the final grade				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	suplementacja w wybranych dyscyplinach sportowych		Arytmetyczna	
	3	suplementacja w wybranych dyscyplinach sportowych [wykład]	egzamin		
	3	suplementacja w wybranych dyscyplinach sportowych [wiczenia]	zaliczenie z ocen		
Basic reading	A. Bean (2019): Wychowanie w sporcie, ZYSK I S-KA , Poznań				
	G. Zydek, M. Michalczyk, A. Zajac (2017): Nowe trendy w wychowaniu i suplementacji osób aktywnych fizycznie , AWF Katowice, Katowice				
Supplementary reading	B. Frączek, J. Krzywowski, H. Krysztofiak (2019): Dietetyka sportowa , PZWL, Warszawa				
	A. Zajac, S. Poprzeczki, M. Czuba, G. Zydek, A. Goła (2012): Dieta i suplementacja w sporcie i rekreacji , AWF Katowice, Katowice				
STUDENT WORKLOAD					
		No. of hours			
		W tym e-learning			
Contact hours	45		0		
Participation in test / exam	4		0		
Preparation for contact hours	14		0		
Private reading and studying	10		0		
Participation in tutorials	20		0		
Preparation of project / essay / etc.	16		0		
Preparation for test / exam	16		0		

TOTAL workload	125
ECTS credits	5

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-II-S-22/23Z							
Course title: Multimedia techniques in sport (KIERUNKOWE)					Course code: KFZ113AIIJ3451_37S		
Name of field of study: diagnostyka sportowa							
Mode and cycle of study: second degree, full - time			Profile of study: general academic		Specialty:		
Course / module status obligatory				Language of instruction: semester: 3 - polish language			
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				w tym e-learning			
2	3	discussion classes	30	0	pg	3	
Total			30			3	
Course / module coordinator		mgr ROBERT TERCZY SKI					
Course instructor		dr MIŁOSZ ST PI SKI					
Course / module objectives		Acquisition of knowledge on editing computer programs intended for creating e-concepts. The student will have the ability to create e-contexts, edit videos and graphics. Will know the legitimacy of using multimedia techniques in the work of trainers.					
Prerequisites		basic knowledge of computer operation in the Windows and MS Office environment					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	He knows the basic computer programs and other technical devices used to assess and monitor physical activity and applicable in schools and sports clubs.	K_W04 K_W14			
skills	1	EP2	He is able to select and use research methods and equipment in the assessment of physical activity, as well as evaluate and interpret the results obtained. Able to use specialized computer and other equipment multimedia apparatus in the field of sports training.	K_U03			
social competences	1	EP3	He is ready to critically evaluate his own and other people's multimedia projects.	K_K03			
CONTENT					Semester	No. of hours	
							w tym e-learning
Subject title: Multimedia techniques in sport							
Format of instruction: discussion classes							
1. null					3	24	0
2. Prezentacja e-konspektów					3	6	0
Modes of delivery	Theoretical and practical methods of operation						
Assessment methods						No. of learning outcome from the syllabus	
	PREZENTACJA					EP1,EP2,EP3	
	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	1. Active participation in classes; 2. Completed partial projects in the field of Power Point editing, graphic programs and video editors. 3. Preparation and presentation of an e-content containing graphic and video materials from the supervised training sports				
	Grade calculation principles				
	The final grade is the grade for the preparation and presentation of the e-concept (100% of the final grade)				

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	techniki multimedialne w sporcie		Ważona	
	3	techniki multimedialne w sporcie [wiczenia]	zaliczenie z ocen		1,00

Basic reading	Piotr Wróblewski (2018): ABC komputera, Helion, Warszawa				
	Rzdowska A. (2003): Mistrzowskie prezentacje : slajdowy poradnik mówcy doskonałego, Helion, Gliwice				
	Sedlak K. (1995): Aby osiągnąć cel, czyli Jak pisać listy, jak układać ogłoszenia i reklamy, jak prowadzi zebrania i prezentacje, jak przygotowuje raporty, jak rozmawia przez telefon, Wydawnictwo Profesjonalnej Szkoły Biznesu, Kraków				

Supplementary reading	Kuciński K. (1999): Obsługa komputera : krok po kroku '99. Edition 2000, Kraków				
	Wróblewski P. (2018): ABC komputera, Helion, Gliwice				

STUDENT WORKLOAD

	No. of hours	
		W tym e-learning
Contact hours	30	0
Participation in test / exam	2	0
Preparation for contact hours	8	0
Private reading and studying	5	0
Participation in tutorials	15	0
Preparation of project / essay / etc.	12	0
Preparation for test / exam	3	0
TOTAL workload	75	
ECTS credits	3	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-I-S-22/23Z						
Course title: Theory and methodology of the team sports (KIERUNKOWE)					Course code: KFZ113AIJ3451_3S	
Name of field of study: diagnostyka sportowa						
Mode and cycle of study: first-degree, full - time			Profile of study: general academic		Specialty:	
Course / module status obligatory				Language of instruction: semester: 3 - polish language, semester: 4 - polish language		
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				w tym e-learning		
2	3	discussion classes	40	0	pg	5
	4	discussion classes	40	0	pg	6
		lecture	10	0	e	
Total			90			11
Course / module coordinator		dr BEATA FLORKIEWICZ				
Course instructor		dr hab. TERESA ZWIERKO , dr BEATA FLORKIEWICZ				
Course / module objectives		Acquire of competences by students in the field of: - performing and teaching the basics of technique and tactics of selected team sports - diagnosis of special fitness as well as quantitative and qualitative components of the game in selected sports team. Acquire of competences to promote health-promoting behavior and care for one's own physical fitness.				
Prerequisites		Lack.				
LEARNING OUTCOMES						
Category	No.	Code	Description	Ref. to programme benchmarks		
knowledge	1	EP1	Has elementary knowledge of game theory team as a form of sports activity and recreational. He knows the technique of performing skills specialist in sports games and knows and describes the methodology of shaping and diagnosis in the right way basic elements of movement technique.	K_W05		
	2	EP2	Defines the basic systems and rules of the game, lists and explains the rules of sports games. distinguishes specialized terminology used in the process training in sport and recreation.	K_W05		

skills	1	EP3	Demonstrates specialized motor skills with the scope of basic elements of game technique and tactics teamwork necessary to run the process training in sport and recreation.	K_U01		
	2	EP4	Uses basic equipment necessary for implementation of sports and recreational activities in the field of team games in accordance with the safety rules your own and the participants of the classes.	K_U04		
	3	EP5	Applies basic methods of assessing the level of fitness special with sports games and game ingredient analysis and is able to interpret the results of research in this area.	K_U12		
	4	EP6	Constructs a program of sports and recreational activities with range of sports games for people of all ages with taking into account the appropriate exercise load.	K_U13		
social competences	1	EP7	He is ready to cooperate in a team and has competences that enable people to engage in work group assuming various roles in it, including the initiator exercises, referee.	K_K04		
	2	EP8	Is aware of the need to communicate clearly knowledge of sports games to participants training process in sport and recreation.	K_K06		
	3	EP9	He is ready to take responsibility for health and safety of participants in activity programs sports and recreation in the field of sports games.	K_K08		
	4	EP10	Performs a correct self-assessment of their own competences and is aware of the need to maintain the appropriate level of physical fitness necessary for professional work.	K_K10		
CONTENT				Semester	No. of hours	
					w tym e-learning	
Subject title: Theory and methodology of the team sports						
Format of instruction: lecture						
1. Sports games as a form of physical activity for people of all ages .				4	1	0
2. Rules of the game (basketball, handball, volleyball, soccer).				4	4	0
3. Stages of sports training in team games.				4	4	0
4. Determinants of achievements in sports games: morphological, motor and psychological factors .				4	1	0
Format of instruction: discussion classes						
1. Exercises to familiarize with the balls.				3	2	0
2. Games and activities in the teaching of sports games .				3	4	0

3. Technique of performance and methodology of teaching the basic technical elements of games sports (handball, basketball).		3	10	0	
4. Technical and tactical activities (handball, basketball), analysis of game components.		3	6	0	
5. Organization and conducting sports and recreational activities in sports games.		3	6	0	
6. Special technical and motor tests .		3	12	0	
7. Exercises to familiarize with the balls.		4	2	0	
8. Games and activities in the teaching of sports games.		4	4	0	
9. Technique of performance and methodology of teaching the basic technical elements of sports games (volleyball, football).		4	10	0	
10. Technical and tactical activities (volleyball, football), analysis of the game components.		4	6	0	
11. Organization and conducting sports and recreational activities in sports games.		4	6	0	
12. Special technical and motor tests.		4	12	0	
Modes of delivery	<ul style="list-style-type: none"> - multimedia lecture - theoretical and practical methods (recreational and creative) - group work - simulation games 				
Assessment methods		No. of learning outcome from the syllabus			
	EGZAMIN PISEMNY	EP1,EP2			
	PROJEKT	EP6,EP7,EP8,EP9			
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)	EP10,EP3,EP4,EP5			
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	Completion of exercises: 1. Presence and active participation in all exercises. 2. Practical credit for the basic elements of technique in sports games. 3. Completion of the group project in the scope of conducting a special proficiency test or quantitative analysis i qualitative components of the game in a selected team game (subject to evaluation: the accuracy of the method selected, organization measurement tests, report on the development of test results) 4. Completion of the group project: organizing and running a recreational and sports activity program from games sports (the evaluation covers the presentation, substantive preparation, safety and organization of classes for selected age group, the attitude of the lecturer) Credit for the lecture. 5. Written exam covering theoretical knowledge (questions requiring a longer written statement containing terminology and nomenclature in the field of technique and methodology, teaching the basic elements of the game, knowledge of the subject diagnosis of special fitness). All points from 2-5 the student must receive a minimum pass mark.				
	Grade calculation principles				
	Ocena jest redni wa on oceny ko cowej z wicze 60% oraz wykładów 40%				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	teoria i metodyka sportów zespołowych		Wa ona	
	3	teoria i metodyka sportów zespołowych [wiczenia]	zaliczenie z ocen		1,00
	4	teoria i metodyka sportów zespołowych		Wa ona	
	4	teoria i metodyka sportów zespołowych [wiczenia]	zaliczenie z ocen		0,60
	4	teoria i metodyka sportów zespołowych [wykład]	egzamin		0,40

Basic reading	(red. M. Dorna) (2016): Narodowy Model Gry, PZPN, Warszawa	
	Huci ski T., Wilejto-Lekner I. (2008): Koszykówka. Podr cznik dla trenerów, nauczycieli i studentów, BK Wydawnictwo i Ksi garnie, Wrocław	
	Naglak Z. (2001): Teoria zespołowej gry sportowej. Kształcenie gracza, AWF , Wrocław	
	Nowi ski. W (2018): Umiej tno ci indywidualne i współdziałanie w piłce ręcznej, ZPR w Polsce, Warszawa	
	Spieszny M. (2011): Analiza rozwoju cech somatycznych, motoryczno ci i umiej tno ci techniczno-taktycznych młodych sportowców uprawiaj cych gr w piłk r czn , AWF, Kraków	
	St pi ski M., Paluszek K. (2011): Trening pozycyjny w piłce no nej, Wydawnictwo MWW, Wrocław	
	Zatyrcz Z., Piasecki L. (2001): Piłka siatkowa, ZWPIW Plewnia	
Supplementary reading	Florkiewicz B., Fogtman S., Lesiakowski P., Zwierko T. (2015): Antropomotoryka. , Journal of Kinesiology and Exercise Sciences	
	Oficjalne przepisy gry w koszykówk , piłk no n , piłk siatkow , pik r czn :	
	Paluszek K., St pi ski M. (2009): Taktyka atakowania i bronienia w systemie 1-4-4-2., "Fundacja Widzew Łód – „Akademia Futbolu”, Łód	
	Piasecki L. Florkiewicz B., Krzepota J., Steciuk H., Zwierko T. (2015): System FitLight Trainer™ — nowoczesna technologia w kontroli procesu treningu sportowego w piłce siatkowej. W: Sport, turystyka i rekreacja wobec wyzwa współczesno ci., 11, 41-48	
	Steciuk H., Zwierko T. (2015): Gaze behavior in basketball shooting: Preliminary investigations. TRENDS in Sport Sciences., 2(22): 89-94	
	St pi ski M, Dorna M. (2011): Gra 1x1 we współczesnej piłce no nej., Trener 16-25, Czasopismo fachowe PZPN	
Zwierko T., Florkiewicz B., Fogtman S., Kszak-Krzy anowska A. (2014): The ability to maintain attention during visuomotor task performance in handball players and non-athletes, Centr Eur J Sport Sci Med, 7 (3): 99–106.		
STUDENT WORKLOAD		
	No. of hours	
		W tym e-learning
Contact hours	90	0
Participation in test / exam	4	0
Preparation for contact hours	60	0
Private reading and studying	40	0
Participation in tutorials	16	0
Preparation of project / essay / etc.	35	0
Preparation for test / exam	30	0
TOTAL workload	275	
ECTS credits	11	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-II-S-22/23Z-DiP S							
Course title: ywienie i suplementacja w wybranych jednostkach chorobowych (SPECJALNO CI / SPECJALIZACJE / MODUŁY SPECJALNO CIOWE)					Course code: KFZ113AIIJ3362_1S		
Name of field of study: diagnostyka sportowa							
Mode and cycle of study: second degree, full - time		Profile of study: general academic			Specjalty: diagnoza i planowanie ywienia sportowca		
Course / module status obligatory			Language of instruction: semester: 4 - polish language				
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				w tym e-learning			
2	4	discussion classes	20	0	pg	3	
		lecture	10	0	pg		
Total			30			3	
Course / module coordinator		dr MACIEJ BURYTA					
Course instructor		dr MACIEJ BURYTA					
Course / module objectives		The purpose of the course is to familiarize students with the causes of certain disease entities. To acquire the student's ability to apply rational nutrition and supplementation in selected disease entities. To develop in students an attitude of readiness to take measures to minimize the risk of selected diseases.					
Prerequisites		Basic knowledge of diet and supplementation					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	Understands the essence of human physiological processes and also the statistics of morbidity and mortality associated with selected disease entities, the origin of these diseases and ways of prevention	K_W15 K_W18			
skills	1	EP2	Student Can demonstrate the relationship between diet, diet and nutrition and selected disease entities.	K_U14			
	2	EP3	He is able to identify errors and negligence in nutrition, and demonstrates the ability to independently find the necessary data in available information sources.	K_U07 K_U08 K_U14			
social competences	1	EP4	Is aware of the application of knowledge on the prevention of selected disease entities.	K_K02			
CONTENT					Semester	No. of hours	
							w tym e-learning
Subject title: ywienie i suplementacja w wybranych jednostkach chorobowych							
Format of instruction: lecture							
1. Discussion of death and mortality statistics from selected diseases					4	2	0
2. Causes of selected disease units					4	4	0
3. Diagnostics of selected disease units					4	4	0
Format of instruction: discussion classes							
1. OFTT - oral fat tolerance test					4	2	0
2. Indicators of atherogenicity					4	2	0

3. Positive and negative effects of medication therapy	4	2	0
4. Facts and myths about cholesterol	4	3	0
5. Primary prevention of selected diseases	4	6	0
6. Secondary prevention of selected diseases	4	2	0
7. Recommended nutrition and supplementation in selected disease entities.	4	3	0

Modes of delivery	lectures, multimedia presentations, discussion		
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Assessment methods		No. of learning outcome from the syllabus
	KOLOKWIUM	EP1,EP2,EP3
	PREZENTACJA	EP1,EP2,EP3,EP4
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)	EP1,EP2,EP3,EP4
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 prerequisites for obtaining credit are: 1. attendance and active participation in class 2. a positive evaluation of the presentation 3. positive evaluation from the colloquium	
	Grade calculation principles	
	The final grade is: 1. presentation and colloquium from exercises - 50% of the final grade 2. colloquium from lectures - 50% of the final grade	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	ywienie i suplementacja w wybranych jednostkach chorobowych		Arytmetyczna	
	4	ywienie i suplementacja w wybranych jednostkach chorobowych [wiczenia]	zaliczenie z ocen		
	4	ywienie i suplementacja w wybranych jednostkach chorobowych [wykład]	zaliczenie z ocen		

Basic reading	H. Ciborowa, A. Rudnicka (2014): Dietetyka, ywienie zdrowego i chorego człowieka, PZWL, Warszawa	
	Paprocka-Borowicz M. i in. (2016): 5 minut dla serca, SBP, cop., Warszawa	
	Waller S. (2018): Dr Heart dbaj o swoje serce: jak zapobiega zawałowi serca oraz lepiej i bardziej wiadomie y , Edra Urban&Partner, copyright, Wrocław	

Supplementary reading	
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STUDENT WORKLOAD

	No. of hours	
		W tym e-learning
Contact hours	30	0
Participation in test / exam	3	0
Preparation for contact hours	8	0
Private reading and studying	7	0
Participation in tutorials	14	0
Preparation of project / essay / etc.	6	0
Preparation for test / exam	7	0
TOTAL workload	75	
ECTS credits	3	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: USKFZ-DS-O-I-S-22/23Z							
Unit: Moduł B: diagnostyka laboratoryjna [moduł]							
Course title: Exercise biochemistry with elements of bioenergetics (POZOSTAŁE PRZEDMIOTY / MODUŁY)					Course code: US113AIJ2980_33S		
Name of field of study: diagnostyka sportowa							
Mode and cycle of study: first-degree, full - time		Profile of study: general academic			Specialty:		
Course / module status elective				Language of instruction: semester: 3 - polish language			
Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS	
				w tym e-learning			
2	3	laboratory	30	0	pg	4	
		lecture	15	0	pg		
Total			45			4	
Course / module coordinator		dr n. med. PATRYCJA TOMASIAK					
Course instructor		dr hab. ROBERT NOWAK					
Course / module objectives		Familiarize yourself with the basic biochemical methods used in sports laboratory diagnostics to assess the athlete's health and diagnose selected disease states acquiring readiness for teamwork acquisition of laboratory work skills					
Prerequisites		Basic knowledge of human biochemistry and physiology					
LEARNING OUTCOMES							
Category	No.	Code	Description	Ref. to programme benchmarks			
knowledge	1	EP1	describes the most common metabolic leading disorders and post-exercise changes at the level of human biochemistry	K_W02 K_W04			
	2	EP2	Discusses the bioenergetic aspects of selected changes in laboratory diagnostic markers under the influence of sustained exercise	K_W13			
skills	1	EP3	Demonstrates the ability to correctly identify metabolic disorders and post-exertional changes based on test results obtained	K_U10 K_U14			
	2	EP4	performs biochemical analyses most commonly used in laboratory diagnostics under the guidance of a research supervisor	K_U02			
	3	EP5	Knows how to prepare a well-documented study of experimental results	K_U05			
social competences	1	EP6	is ready to interact and work in a group	K_K05			
	2	EP7	Updates his knowledge and is aware of its practical significance	K_K01			
CONTENT					Semester	No. of hours	
						w tym e-learning	
Subject title: Exercise biochemistry with elements of bioenergetics							
Format of instruction: lecture							
1. Introduction. The most important sources of energy during exercise. Carbohydrate metabolism - glycolysis					3	1	0

2. Integration of carbohydrate and lipid metabolism - Krebs cycle, beta-oxidation		3	2	0	
3. Chemiosmotic energy conversion		3	2	0	
4. Transport of molecules across membranes. A quantitative view of bioenergetics		3	2	0	
5. Chemiosmotic proton turnover		3	2	0	
6. Respiratory chain as the proper site of ATP synthesis		3	2	0	
7. ATP synthase and its role in energy production		3	4	0	
Format of instruction: laboratory					
1. Rules for safe work in the laboratory		3	2	0	
2. Energy carriers and energy stores in the human body		3	2	0	
3. Evaluation of purine nucleotide levels by instrumental methods		3	10	0	
4. Keratin kinase as a biochemical marker in sports diagnostics		3	4	0	
5. How to equip a trainer's handy laboratory?		3	10	0	
6. Summary of exercises		3	2	0	
Modes of delivery	Audio-visual presentation (lectures); group work (exercises); performance of laboratory experiments (exercises).				
Assessment methods				No. of learning outcome from the syllabus	
	KOLOKWIUM			EP1,EP2,EP3	
	ZAJ CIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJ)			EP4,EP5,EP6,EP7	
	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	Written colloquium covers knowledge from lectures and exercises (70% of the final grade). Credit for exercises based on attendance, correctness from performed experiments (30% of final grade).				
	Grade calculation principles				
	Written colloquium covers knowledge from lectures and exercises (70% of the final grade). Credit for exercises based on attendance, correctness from performed experiments (30% of final grade).				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	biochemia wysiłku fizycznego z elementami bioenergetyki		Ważona	
	3	biochemia wysiłku fizycznego z elementami bioenergetyki [wykład]	zaliczenie z ocen		0,70
	3	biochemia wysiłku fizycznego z elementami bioenergetyki [laboratorium]	zaliczenie z ocen		0,30
Basic reading	Autor David G. Nicholls, Stuart J. Ferguson (1995): Bioenergetyka 2, Wydawnictwo Naukowe PWN, Warszawa				
	Banfi G., Colombini A., Lombardi G., Lubkowska A. (2012): Metabolic markers in sports medicine., Adv Clin Chem 56: 1–54,				
	Hübner-Woniak E., Lutosławska G. (2000): Podstawy biochemii wysiłku fizycznego., Biblioteka Trenera Warszawa, Warszawa				
Supplementary reading	Chamera T., Spieszny M., Kłoczek T., Kostrzewa-Nowak D., Nowak R., Lachowicz M., Buryta R., Fice K., Moska W., Eider J., Ciżczyk P. (2015): Post-effort changes in activity of traditional diagnostic enzymatic markers in football players' blood, Journal of Medical Biochemistry 34, 179-190				
	Koolman J., Röhm K.-H. 2005 (2005): Biochemia. Ilustrowany przewodnik., PZWŁ, Warszawa				
	Kostrzewa-Nowak D., Nowak R., Chamera T., Buryta R., Moska W., Ciżczyk P. (2015): Post-effort changes in C-reactive protein level among soccer players at the end of the training season., Journal of Strength and Conditioning Research 2015; 29(5): 1399-1405				
STUDENT WORKLOAD					
		No. of hours			
		W tym e-learning			

Contact hours	45	0
Participation in test / exam	2	0
Preparation for contact hours	20	0
Private reading and studying	8	0
Participation in tutorials	10	0
Preparation of project / essay / etc.	0	0
Preparation for test / exam	15	0
TOTAL workload	100	
ECTS credits	4	