COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**						
Course title: **Assessment of the ecological condition of surface waters (ocena stanu ekologicznego wód powierzchniowych) (KIERUNKOWE)**					Course code: **SPR201AIJ3450_25S**	
Name of field of study: **Hydrobiology**						
Mode and cycle of study: **first-degree, full - time**		Profile of study: **general academic**			Specialty:	
Course / module status **obligatory**			Language of instruction: **semester: 4 - english language**			
Year	**Semester**	**Form of instruction**	**No. of hours**		**Type of credit**	**ECTS**
				including e-learning		
2	4	discussion classes	30	0	pg	5
		zajęcia terenowe	15	0	pg	
Total			**45**			**5**
Course / module coordinator	**dr TOMASZ KREPSKI**					
Course instructor	**dr TOMASZ KREPSKI**					
Course / module objectives	**The aim of the course is to familiarize students with the latest methods of surface water monitoring using biological, geomorphological and physico-chemical methods. The student should be able to choose the appropriate method to assess the condition of surface waters and carry out the collection and analysis of the samples, interpret the results and draw conclusions. The student is ready to constantly update the knowledge of water monitoring and initiate actions for protection the environment.**					
Prerequisites	**The student should know the basic concepts of limnology and potamology and be able to recognize aquatic organisms**					

LEARNING OUTCOMES

Category	**No.**	**Code**	**Description**	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows and understands the basic research, laboratory and field methods and techniques used in the monitoring of the aquatic environment**	**K_W02 K_W07**
	2	**EP2**	**The student knows and understands the basics of mathematical calculation methods that enable the proper assessment of the condition of the water environment**	**K_W08**
skills	**1**	**EP3**	**The student is able to choose the appropriate laboratory and field methods and research techniques and correctly use them in the monitoring of the aquatic environment**	**K_U03 K_U04**
	2	**EP4**	**The student is able to make mathematical calculations on the basis of the collected data enabling the proper assessment of the condition of the water environment**	**K_U01 K_U02**
	3	**EP5**	**The student is able to properly present the results of the monitoring, along with the correct interpretation of the obtained results**	**K_U05**
social competences	**1**	**EP6**	**The student is ready to carry out the monitoring in a reliable manner with respect to ethical principles and to share the collected data.**	**K_K03 K_K05**

CONTENT	Semester	No. of hours	
			including e-learning

Subject title: **Assessment of the ecological condition of surface waters (ocena stanu ekologicznego wód powierzchniowych)**			
Format of instruction: **discussion classes**			
1. **Biological monitoring of aquatic environment - phytoplankton**	4	4	0
2. **Biological monitoring of aquatic environment - macrophytes**	4	4	0
3. **Biological monitoring of aquatic environment - zooplankton**	4	4	0
4. **Biological monitoring of aquatic environment - benthic macroinvertebrates**	4	4	0
5. **Biological monitoring of aquatic environment - fishes**	4	4	0
6. **River Habitat Survey (RHS)**	4	4	0
7. **Monitoring of physical and chemical parameters of water**	4	2	0
8. **Analysis of the collected results, passing the course**	4	4	0
Format of instruction: **zajęcia terenowe**			
1. **Methods of collecting biological samples (zooplankton, benthos)**	4	3	0
2. **Processing and analysis of the collected material**	4	6	0
3. **The Macrophyte Index for Rivers (MIR)**	4	3	0
4. **River Habitat Survey 4 3 0**	4	3	0

Modes of delivery	**Presentation of methods of monitoring research, calculations and analysis of monitoring data, presentation and discussion of the results of water environment monitoring**
	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
	PROJEKT	**EP1,EP2,EP3,EP4,EP5**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Preparation of two reports: one of the seminars and the other of the field classes. Positive grade from reports.**
	Grade calculation principles
	The final grade for the course is the average of grades from room and field classes.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	Assessment of the ecological condition of surface waters (ocena stanu ekologicznego wód powierzchniowych)		Arytmetyczna	
	4	Assessment of the ecological condition of surface waters (ocena stanu ekologicznego wód powierzchniowych) [ćwiczenia]	zaliczenie z oceną		
	4	Assessment of the ecological condition of surface waters (ocena stanu ekologicznego wód powierzchniowych) [zajęcia terenowe]	zaliczenie z oceną		

Basic reading	Frank R. Burden; Ulrich Foerstner; Ian D. McKelvie; Alex Guenther (2002): Environmental Monitoring Handbook, The McGraw-Hill Companies, Inc, United States of America
Supplementary reading	David B Lindenmayer, Gene E Likens (2018): Effective Ecological Monitoring, The Commonwealth Scientific and Industrial Research Organisation

STUDENT WORKLOAD

	No. of hours	
		including e-learning

Contact hours	**45**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**25**	**0**
Private reading and studying	**20**	**0**
Participation in tutorials	**5**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**28**	**0**
TOTAL workload	**125**	
ECTS credits	**5**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Basics of entrepreneurship (podstawy przedsiębiorczości) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3432_52S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	2	conversation	8	0	pg	1
Total			**8**			**1**

Course / module coordinator	**dr hab. ANNA TURCZAK**
Course instructor	**dr hab. ANNA TURCZAK**
Course / module objectives	**The aim of the course is to introduce students to fundamentals of entrepreneurship and to explore the issues that future entrepreneurs must master before they start their own businesses. In particular, participants learn about the tasks and procedures that need to be completed to successfully launch a new business enterprise. Students become acquainted with selected financial problems and basic marketing concepts. By studying this subject, participants are able to apply the theory necessary for effective and efficient business management in practice. After completing the course, students are ready to plan their professional careers, start their own business and manage its development.**
Prerequisites	**Ingenuity, creativity, willingness to exchange views and openness to taking part in debates make it much easier to study the content of this subject. Knowledge of basic English terminology used in economics, finance and management is required.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**To understand the importance of entrepreneurship; to discuss what abilities are needed to be successful in running a business.**	**K_W11**
	2	EP2	**To explain the challenges and benefits of being an entrepreneur; to list factors to consider when making a decision to start a business.**	**K_W10 K_W11**
	3	EP3	**To be familiar with the basics of finance; to know how to estimate the cost of operating a business; to be prepared to compare the advantages and disadvantages of different business models.**	**K_W10 K_W11**
	4	EP4	**To comprehend the concept of marketing; to know how to classify products; to describe the applications of modern business technologies.**	**K_W10 K_W11**
skills	1	EP5	**To observe market trends; to be capable of finding gaps in the marketplace; to have the ability to identify the needs of potential customers.**	**K_U02**
	2	EP6	**To evaluate and choose a business concept; to be able to define the resources required; to suggest new products and services; to formulate proposals on how to create and maintain an advantage over competitors.**	**K_U02**

social competences	**1**	**EP7**	**To be aware of the role entrepreneurship plays in society; to realize that firms contribute considerably to the economic growth of a country.**	**K_K02 K_K03**
	2	**EP8**	**To be willing to determine the threats, opportunities, weaknesses and strengths of the business venture under consideration; to be ready to apply the acquired theoretical knowledge in real world situations; to be eager to recognize the entrepreneurial potential within themselves.**	**K_K01 K_K04 K_K05**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Basics of entrepreneurship (podstawy przedsiębiorczości)**			
Format of instruction: **conversation**			
1. **The concept of entrepreneurship. Characteristics of an entrepreneur. Reasons for establishing a company. Factors that influence business development. The impact of entrepreneurship on society and economy.**	2	2	0
2. **Generating and selecting business ideas. Recognizing business opportunities and assessing the competition. Gathering resources. Creating and developing a company. Gaining a competitive advantage.**	2	2	0
3. **Ways of raising start-up capital. Internal and external sources of financing. Basic components of costs and revenues. Key types of business models.**	2	2	0
4. **Planning and implementing a marketing strategy. Launching products and services. Benefits of using modern business technologies. Internet and e-commerce.**	2	2	0

Modes of delivery	**The theoretical issues are presented with the use of multimedia techniques. The way of teaching is interactive. Students acquire knowledge, skills and then prepare a written assignment. All didactic materials have been created in electronic form and are available to students via the Internet. Learners are encouraged to review additional sources of information, including recommended literature.**	
	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
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP3,EP4,EP5,EP6,EP8**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,EP3,EP4,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	**Passing the discussion classes on the basis of a written assignment.**	
	Grade calculation principles	
	The final grade for this course is equal to the grade regarding the discussion classes.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Basics of entrepreneurship (podstawy przedsiębiorczości)		Ważona	
	2	Basics of entrepreneurship (podstawy przedsiębiorczości) [konwersatorium]	zaliczenie z oceną		1,00

Basic reading	Sasin Robert (2015): Entrepreneurship training, Warsaw School of Economics, Warsaw
	Scott Jonathan T. (2017): The entrepreneur's guide to building a successful business, EFMD, Brussels
	Staniszewska Aleksandra, Szlęzak-Matusewicz Joanna (2015): Entrepreneurship - selected issues, Warsaw School of Economics, Warsaw

Supplementary reading	Brännback Malin, Carsrud Alan (2016): Fundamentals for becoming a successful entrepreneur: from business idea to launch and management, Pearson Education, Old Tappan, New Jersey
	Carsrud Alan, Brännback Malin (2007): Entrepreneurship, Greenwood Press, Westport, Connecticut
	Casson Mark, Yeung Bernard, Basu Anuradha, Wadeson Nigel (2008): The Oxford handbook of entrepreneurship, Oxford University Press, Oxford
	Stokes David, Wilson Nicholas, Mador Martha (2010): Entrepreneurship, Cengage Learning, London
	Westhead Paul, Wright Mike (2013): Entrepreneurship: a very short introduction, Oxford University Press, Oxford

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**8**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**2**	**0**
Private reading and studying	**6**	**0**
Participation in tutorials	**1**	**0**
Preparation of project / essay / etc.	**8**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**25**	
ECTS credits	**1**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Behavioral Economics (ekonomia behawioralna) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3432_10S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	6	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr AGNIESZKA BRETYN**
Course instructor	**dr AGNIESZKA BRETYN**
Course / module objectives	**The aim of the course is to familiarize the student with the behavioral perspective of economics and selected possibilities of applying this field in practice. Students will become acquainted with the interdisciplinary trend in economics in order to understand real, not abstract models of behavior of economic participants**
Prerequisites	**none**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows the concepts and theories of behavioral economic, an interdisciplinary approach in the analysis of behavioral models of economic life participants**	
	2	**EP2**	**The student knows and characterizes the key behavioral determinants influencing the process of evaluation and making economic decisions**	
skills	**1**	**EP3**	**The student designs decision situations with the use of economic experiment**	
	2	**EP4**	**The student is able to recognize, analyze and evaluate behavioral factors in the decision-making process**	
social competences	**1**	**EP5**	**The student is ready to get involved in the preparation of the project - economic experiment and presents the results of the team's work**	
	2	**EP6**	**The student demonstrates a willingness to discuss the behavioral aspects of economic activities**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Behavioral Economics (ekonomia behawioralna)**			
Format of instruction: **lecture**			
1. **null**	6	2	0
2. **null**	6	2	0
3. **null**	6	2	0

4. **null**	6	3	0
5. **null**	6	2	0
6. **null**	6	2	0
7. **null**	6	2	0

Modes of delivery	**- lecture with the use of multimedia techniques, - lecture with elements of conversations, - case studies**
	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
	PROJEKT	**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	**- Indyvidual or group project (and presentation) involving the use of the economic experiment method in a selected decision-making situation** **- Activity during discussion (during the lectures)**
	Grade calculation principles
	The final grade for the course is the lecture grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Behavioral Economics (ekonomia behawioralna)		Ważona	
	6	Behavioral Economics (ekonomia behawioralna) [wykład]	zaliczenie z oceną		1,00

Basic reading	Kahneman D. (2013): Thinking, Fast and Slow, Macmillan
	Thaler R. (2000): Mental accounting matters, w: w: Choices, Values and Frames, Cambridge, Massachussets
	Thaler R. (2018): Misbehaving: The Making of Behavioral Economics
Supplementary reading	Ariely D. (2018): Potęga irracjonalności, Smak Słowa, Sopot
	Orlik K. (2017): Makroekonomia behawioralna, CeDeWu, Warszawa

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**10**	**0**
Preparation of project / essay / etc.	**15**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Biochemistry (biochemia) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_6S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	2	laboratory	15	0	pg	3
		lecture	15	0	pg	
Total			**30**			**3**

Course / module coordinator	**dr inż. AGATA WSZOŁEK**
Course instructor	**dr inż. AGATA WSZOŁEK**
Course / module objectives	**Understanding the course and regulation of metabolic processes occurring in the cells of prokaryotic and eukaryotic organisms. Acquiring the ability to perform simple biochemical analyzes and to interpret the obtained results and to formulate conclusions correctly. Gaining social competence regarding responsibility for the effects of professional activities and its impact on the natural environment.**
Prerequisites	**Basic knowledge of inorganic and organic chemistry, cell biology and biophysics**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	Lists and describes the structure and biological role of amino acids, proteins, vitamins, sugars, lipids and nucleic acids	K_W01
	2	EP2	Discusses the course of metabolic processes taking place in eukaryotic cells and compares them with the course of selected metabolic processes taking place in prokaryotic cells	K_W01 K_W02
skills	1	EP3	Performs simple biochemical analyzes independently or in a team under the supervision of a research tutor	K_U04
	2	EP4	Demonstrates the ability to correctly infer on the basis of data from various sources	K_U01
	3	EP5	Is able to prepare a well-documented study of the results of experimental research in the field of biochemistry	K_U01 K_U03
	4	EP6	Able to interact and work in a group	K_U07
social competences	1	EP7	Is aware of the importance and understanding of the non-technical aspects and effects of activities, including its impact on the environment, and related to including responsibility for decisions made; in resolving dilemmas related to the profession, is guided by the principles of ethics and bioethics	K_K02 K_K05

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Biochemistry (biochemia)**			

Format of instruction: **lecture**			
1. **Amino acids - structure and properties. Structure of peptides and proteins.**	2	2	0
2. **Catalysis and kinetics of enzymatic reactions. Mechanisms of enzymatic activity regulation. Enzyme inhibitors and inactivators. Vitamins and coenzymes - structure and functions in cell metabolism**	2	2	0
3. **Structure of nucleic acids.**	2	1	0
4. **Structure of lipids. Biological membranes and the dynamics of their structure**	2	2	0
5. **Cell metabolism - anabolic and catabolic processes. Carbohydrate, lipid and protein metabolism.**	2	6	0
6. **Influence of toxic compounds on biochemical processes in living organisms.**	2	2	0
Format of instruction: **laboratory**			
1. **Introductory classes: rules of working in the laboratory, health and safety regulations, rules for passing the laboratory course.**	2	1	0
2. **Amino acids: color reactions.**	2	2	0
3. **Proteins: factors denaturing the native structure of proteins.**	2	2	0
4. **Enzymes: influence of selected physicochemical factors on enzyme activity.**	2	2	0
5. **Vitamins: detection of selected vitamins in biological material.**	2	2	0
6. **Carbohydrates: color reactions**	2	2	0
7. **The metabolism of carbohydrates.**	2	2	0
8. **Lipids: structure and biological functions.**	2	2	0

Modes of delivery	**Performing laboratory experiments (laboratory course), audiovisual presentation (lectures), work in groups (laboratory course)**
	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**
	SPRAWDZIAN	**EP1,EP2**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP3,EP4,EP5**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	
	Passing a positive grade: **1) Written test covering the knowledge of the lectures.** **2) Passing the laboratory course with a positive assessment on the basis of the presence, activity, tests and written reports on the experiments performed.**
	Grade calculation principles
	The final grade for the subject is calculated on the basis of the grade for the exercises and the lecture in a 1: 1 ratio

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Biochemistry (biochemia)		Arytmetyczna	
	2	Biochemistry (biochemia) [laboratorium]	zaliczenie z oceną		
	2	Biochemistry (biochemia) [wykład]	zaliczenie z oceną		

Basic reading	Berg J. M., Tymoczko J. L., Stryer L. (2018): Biochemia, PWN, Warszawa
	Kączkowski J (2009): Podstawy Biochemii, WNT, Warszawa
	Koolman J., Röhm K.-H (2005): "Biochemia. Ilustrowany przewodnik", PZWL, PZWL, , Warszawa
	Murray R.K., Granner D.K., Mayes P.A., Rodwell V.W. (2018): "Biochemia Harpera", PZWL, Warszawa
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**10**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**4**	**0**
Preparation of project / essay / etc.	**4**	**0**
Preparation for test / exam	**15**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Bioinformatics (bioinformatyka) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_16S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status: **obligatory**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	discussion classes	30	0	pg	2
Total			**30**			**2**

Course / module coordinator	**dr hab. LIDIA SKUZA**
Course instructor	**dr hab. LIDIA SKUZA**
Course / module objectives	**To introduce students to basic issues in bioinformatics, in particular to techniques of amino acid and nucleotide sequence analysis** **To introduce students to biological screening methods and literature databases** **The student acquires practical skills in using biological databases and is able to use basic and specialized programs as well as bioinformatics tools, is aware of the importance of these tools in scientific research, is ready to systematically deepen knowledge by learning new programs and methods used in bioinformatics**
Prerequisites	**Basic computer skills, knowledge of genetics**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student has knowledge of the basic techniques of bioinformatic sequence and structure analysis of biopolymers**	**K_W02 K_W06 K_W08**
	2	**EP2**	**The student has knowledge of terminology used in conducting research with bioinformatics methods**	**K_W01 K_W08**
skills	**1**	**EP3**	**The student uses basic functions of specialized bioinformatics software used to compare and edit amino acid and nucleotide sequences and to analyze the spatial structure of proteins**	**K_U03 K_U04**
	2	**EP4**	**The student is able to independently analyze the data available in biological and literature databases**	**K_U02 K_U04**
social competences	**1**	**EP5**	**The student is ready to work independently and in a team on the implementation of projects involving bioinformatic data analysis**	**K_K01 K_K05**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Bioinformatics (bioinformatyka)**			
Format of instruction: **discussion classes**			
1. **Capabilities and example applications of basic bioinformatics systems and biological databases (NCBI Entrez, RCSB PDB, Uniprot, Expasy, PROSITE i PRINTS, Gene Ontology)**	3	8	0
2. **Techniques for quantitative comparison of amino acid and nucleotide sequences (BLAST, FASTA, Clustal)**	3	8	0
3. **Basic methods of molecular phylogenetic analysis (models of molecular evolution, distance and optimization methods for determination of phylogenetic trees)**	3	8	0
4. **DNA barckoding analysis**	3	6	0

Modes of delivery	**case studies, problem solving, lecture with multimedia presentation, exercises**	
	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,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	**Final test - includes knowledge of exercises and recommended literature** **Presentation of the results based on skills acquired during the course**	
	Grade calculation principles	
	The final grade is the grade for the course	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Bioinformatics (bioinformatyka)		Ważona	
	3	Bioinformatics (bioinformatyka) [ćwiczenia]	zaliczenie z oceną		1,00

Basic reading	Andreas D. Baxevanis (Editor), B. F. Francis Ouellette (Editor) (2004): Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins, 3rd Edition, Wiley
	Paul G. Higgs Teresa K. Attwood (2005): Bioinformatics and Molecular Evolution, Blackwell Publishing Ltd.
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**3**	**0**
Private reading and studying	**5**	**0**
Participation in tutorials	**5**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**5**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Cell biology (biologia komórki) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_54S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	2	laboratory	20	0	pg	3
		lecture	10	0	e	
Total			**30**			**3**

Course / module coordinator	**dr hab. LIDIA SKUZA**
Course instructor	**dr hab. MAGDALENA ACHREM**
Course / module objectives	**The aim of the course is that the student should acquire basic knowledge of the structure and function of the eukaryotic and procariotic cells and its interaction with its environment. During the course the student lerns the methods used in the analyses of cells.**
Prerequisites	**Basic biological knowledge.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student characterizes the individual organelles and cell structures.**	**K_W01 K_W06**
	2	**EP2**	**The student explains the basic life processes of a eukaryotic and prokaryotic cell.**	**K_W01 K_W06**
skills	**1**	**EP3**	**The student performs basic analyzes of cells and interprets their results.**	**K_U03 K_U04**
	2	**EP4**	**The student works independently and in a group.**	**K_U04 K_U07**
social competences	**1**	**EP5**	**The student is able to critically assess his qualifications and is careful when conducting experiments in the laboratory.**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Cell biology (biologia komórki)**			
Format of instruction: **lecture**			
1. **Cell theory; the origin and evolution of cells; cellular organization - prokaryotic and eukaryotic cells**	2	1	0
2. **Architecture and dynamics of the cell nucleus**	2	1	0
3. **Structure and function of the cytoskeleton**	2	1	0
4. **Structure and role of cell wall of plants cells.**	2	1	0
5. **Extracellular matrix in animal tissues.**	2	1	0
6. **Cell membrane function and structure.**	2	1	0

7. **Structure and functioning of individual cell compartments.**	2	2	0
8. **Proteasomes**	2	1	0
9. **Cell aging and death.**	2	1	0
Format of instruction: **laboratory**			
1. **Optical microscopy. Observation of a living cells.**	2	4	0
2. **Structure and functioning of individual cell compartments.**	2	12	0
3. **The cell cycle, mitosis and meiosis.**	2	4	0

Modes of delivery	**Lectures with multimedia presentations,** **Laboratory experiments: performing experiments, preparing microscopic slides, working in groups.**
	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**
	SPRAWDZIAN	**EP1,EP2**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Positive grade for the laboratory part of the course.** **The examination form and requirements:The final examination tests if a student has achieved all the projected learning outcomesconcerningknowledge. The passing score is 60%**
	Grade calculation principles
	The final grade for the course is calculated on the basis of the arithmetic mean of the grades from the laboratory and the exam.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Cell biology (biologia komórki)		Arytmetyczna	
	2	Cell biology (biologia komórki) [laboratorium]	zaliczenie z oceną		
	2	Cell biology (biologia komórki) [wykład]	egzamin		

Basic reading	Dalton L., Young R. (2024): Fundamentals of Cell Biology , Oregon State University , Oregon
	LeClair R.J. (2021): Cell Biology, Genetics, and Biochemistry for Pre-Clinical Students, Virginia Tech Publishing
	Alberts B., Johnson A., Lewis J., Morgan D., Raff M., Roberts K., Walter P. (2015): Molecular biology of the cell, Norton&Company , Norton&Company
Supplementary reading	Stephen R. Bolsover, Elizabeth A. Shephard, Hugh A. White, Jeremy S. Hyams (2011): Cell Biology: A Short Course, 3rd Edition, Wiley-Blackwell

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**12**	**0**
Private reading and studying	**12**	**0**
Participation in tutorials	**10**	**0**
Preparation of project / essay / etc.	**0**	**0**

Preparation for test / exam	**9**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Unit: **Blok I**		
Course title: **Climatology (klimatologia) (KIERUNKOWE)**		Course code: **SPR201AIJ3446_18S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language**	

Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
2	3	discussion classes	30	0	pg	3
		lecture	15	0	pg	
Total			**45**			**3**

Course / module coordinator	**dr hab. ROMAN MARKS**
Course instructor	**dr hab. ROMAN MARKS**
Course / module objectives	**The aim of the course is to acquire by the student the knowledge of meteorological and climatic processes and reasons for climate change on Earth. After completing the course, the student is able to analyze the impact of weather conditions on the environment, make calculations and analyze the data necessary for climate studies, willing to be consulted in the event of difficulties in interpreting data.**
Prerequisites	**Basic knowledge of physics and chemistry**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Knows and understands phenomena and complex relationships in the field of meteorology and climatology knows and understands physical and chemical methods and tools necessary to understand natural laws and processes**	**K_W01 K_W07**
	2	**EP2**	**The student knows and understands the basic methods and research, laboratory and field techniques used in hydrobiology.**	**K_W02**
skills	**1**	**EP3**	**Student knows operational principles and handling of measurements and methods of elaborating the results of observations**	**K_U03 K_U04**
	2	**EP4**	**Student is able to interpret climatological data using various sources of information**	**K_U02 K_U04**
	3	**EP5**	**Student is able to uses professional terminology in the field of climatology**	**K_U05**
social competences	**1**	**EP6**	**Student is willing to share the acquired knowledge**	**K_K03**
	2	**EP7**	**Student is ready to consult experts in case of difficulties with solving problems on his own**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning

Subject title: **Climatology (klimatologia)**			
Format of instruction: **lecture**			
1. **Sources of energy for tropospheric processes**	3	2	0
2. **Atmospheric general circulation**	3	2	0
3. **Ocean-Atmosphere as thermo-dynamical system**	3	2	0
4. **Impact of gaseous compounds in troposphere on the Earth's thermal system**	3	2	0
5. **Climate importance of atmospheric aerosols**	3	2	0
6. **Impact of NAO on climatological forcing**	3	2	0
7. **Consequences of climate change**	3	1	0
8. **Earth climatic system**	3	2	0
Format of instruction: **discussion classes**			
1. **Analysis of cycles in solar irradiance**	3	2	0
2. **Measurements of solar irradiance spactra**	3	2	0
3. **Measurements of warming effects for different surfaces on land and water**	3	2	0
4. **Accumulation of heat on oil contaminated surfaces**	3	2	0
5. **Observations of thermal effects in the Baltic Sea coastal zone**	3	2	0
6. **Urban aerosol measurements using stage impactor**	3	2	0
7. **Measurements of total gaseous mercury content in air**	3	2	0
8. **Measurements of heat accumulation in Baltic Sea coastal water**	3	2	0
9. **Sea salt aerosol measurements using stage impactor in Miedzyzdroje**	3	2	0
10. **Measurements of oxygen concentration in air in profiles from Szczecin to Miedzyzdroje**	3	2	0
11. **Measurements of oxygen evasion from coastal waters**	3	2	0
12. **Surface water microlayer observations and sampling**	3	2	0
13. **Observation of static stability of water-air interface**	3	2	0
14. **Analyses of climatology data from Miedzyzdroje Station**	3	2	0
15. **Analysis of climatological data from urban station in Szczecin**	3	2	0

Modes of delivery	**Experiments, measurements and analyses of experimental data**	
	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**
	SPRAWDZIAN	**EP1,EP2,EP3**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,EP3,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	**The lectures - the final colloquium including the content discussed during the lecture** **Exercises - correct performance of individual tasks, positive evaluation of tests**
	Grade calculation principles
	The final grade for the course is the average of the grades from the exercises and lectures.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Climatology (klimatologia)		Arytmetyczna	
	3	Climatology (klimatologia) [ćwiczenia]	zaliczenie z oceną		
	3	Climatology (klimatologia) [wykład]	zaliczenie z oceną		

Basic reading	Ahrens D.C., (2011): Essentials of Meteorology: An Invitation to the Atmosphere
	Marks R. (2019): Water vpor iduced arborne rtational fatures. Meteorol Hydrol Water Manage 7: 39–47
	Marshal J. Plumb A. (2008): Atmosphere, Ocean and Climate Dynamics
	Seo E., Dirmeyer P.A., Barlage M., Heiln Wie H., Ek, M., (2024): Evaluation of Land–Atmosphere Coupling Processes and Climatological Bias in the UFS Global Coupled Model
	Webb P. (2023): Introduction to oceanography
Supplementary reading	Krüger O., Marks R., Graßl H. (2004): Influence of pollution on cloud reflectance. , Geophysical Res. Vol. 109, D24210,

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**45**	**0**
Participation in test / exam	**1**	**0**
Preparation for contact hours	**8**	**0**
Private reading and studying	**7**	**0**
Participation in tutorials	**5**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**9**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Unit: **Lecture in the humanities or the social sciences [moduł]**		
Course title: **Contemporary problems of administrative law and public administration (współczesne problemy prawa administracyjnego i administracji publicznej) (OGÓLNOUCZELNIANE)**		Course code: **SPR201AIJ3435_17S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **elective**	Language of instruction: **semester: 6 - english language**	

Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
3	6	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr DOMINIKA SKOCZYLAS**
Course instructor	**dr DOMINIKA SKOCZYLAS**
Course / module objectives	**Acquisition of knowledge on rules and regulations concerning selected contemporary problems of administrative law and public administration. Acquisition of skills to analyse selected contemporary problems of administrative law and public administration and skills for practical use of the issues discussed in the context of solving existing problems of administrative law and public administration.**
Prerequisites	**Basic knowledge of administrative law concepts, in particular factors that impact the model of public administration, sources of law, construction of the administrative apparatus and use of new technologies in public administration.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Student knows and has advanced understanding of the nature of administration and law studies, their place in the system of science and relation with other studies**	
	2	**EP2**	**Student knows and has advanced understanding of the history of administration and evolution of measures functioning today in the area of administrative law and public administration**	
skills	**1**	**EP3**	**Student can communicate appropriately with the environment using basic administrative law knowledge and terminology, also in the area of selected contemporary problems of administrative law and public administration**	
	2	**EP4**	**Student can formulate and solve complex and non-typical problems in the area of contemporary administrative law and public administration**	
social competences	**1**	**EP5**	**Student is prepared to perform social obligations and to co-organize activities for correct functioning of today's public administration**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Contemporary problems of administrative law and public administration (współczesne problemy prawa administracyjnego i administracji publicznej)**			
Format of instruction: **lecture**			
1. **null**	6	8	0

2. **null**	6	5	0
3. **null**	6	2	0

Modes of delivery	**Analysis of selected contemporary problems of administrative law and public administration - lectures with active participation of students and multimedia presentations. Analysis of judicial decisions of administrative courts currently in force and of views of legal scholars and commentators.** 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**
	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 form. Test composed of 20 questions (multiple choice test). Each correct answer gives 1 point. The final grade is determined by the number of points scored.** **Grading rules:** **- satisfactory - starting at 60%,** **- satisfactory plus - starting at 70%,** **- good - starting at 80%,** **- good plus - starting at 90%,** **- very good - 100%.**
	Grade calculation principles
	The final grade for the course is the lecture grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Contemporary problems of administrative law and public administration (współczesne problemy prawa administracyjnego i administracji publicznej)		Ważona	
	6	Contemporary problems of administrative law and public administration (współczesne problemy prawa administracyjnego i administracji publicznej) [wykład]	zaliczenie z oceną		1,00

Basic reading	Jagielski J., Wierzbowski M. (eds.) (2020): Prawo administracyjne, Wolters Kluwer Polska, Warszawa
	Jaworska-Dębska B., Kledzik P., Sługocki J. (eds.) (2020): Wzorce i zasady działania współczesnej administracji publicznej, Wolters Kluwer Polska, Warszawa
Supplementary reading	Duniewska Z., Rabiega-Przyłęcka A., Stahl M. (eds.) (2019): Standardy współczesnej administracji i prawa administracyjnego, Wolters Kluwer Polska, Warszawa
	Zimmermann J., Szewczyk M., Staniszewska L. (eds.) (2020): Myśl Mariana Zimmermanna a współczesne prawo administracyjne, Wolters Kluwer Polska, Warszawa

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**1**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**8**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**20**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Creativity and Innovations (kreatywność i innowacje) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3433_2S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**dr hab. KATARZYNA SZOPIK-DEPCZYŃSKA**
Course instructor	**dr hab. KATARZYNA SZOPIK-DEPCZYŃSKA**
Course / module objectives	**The aim of the course is to obtain basic knowledge about the innovative activities of enterprises and to familiarize students with methods and techniques supporting creativity. Moreover, it is necessary to stimulate students to search for and formulate innovative solutions.**
Prerequisites	**The student has general knowledge of economic conditions and is able to assess market conditions (in the context of innovative activities). Moreover, he is able to work in a group and has instilled lifelong learning habits**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**Student has knowledge about the essence of innovation, its determinants and connection with creativity and its impact on the development of organizations and the relationships between them**	K_W01
	2	EP2	**Student has knowledge about the role of creativity in the management of a small enterprise, knows the factors influencing the creativity of people in the organization and its barriers along with its connections in the sphere of innovative activity**	K_W11
skills	1	EP3	**Based on specific parameters, the student can analyze the company and its environment, assess the state of innovation and indicate potential sources of innovation along with a proposal for directions of innovative activities and the selection of an innovation strategy**	K_U02
	2	EP4	**The student can apply the creative thinking method**	K_U01
	3	EP5	**The student is able to cooperate and work in a group, taking on various roles in it**	K_U07
social competences	1	EP6	**Student is ready to seek information and propose innovative solutions in projects implemented for companies or local communities**	K_K04

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Creativity and Innovations (kreatywność i innowacje)**			
Format of instruction: **lecture**			

1. **null**	5	13	0
2. **null**	5	1	0
3. **null**	5	16	0

Modes of delivery	**Multimedia presentations, case studies, source text analysis, didactic discussion, lecture with interactive student participation** 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,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 final grade consists of: a positively assessed written test covering the content presented during the lecture and recommended literature (50%) as well as students"" activity when working with source texts and case studies, as well as group work in the context of using creativity tools during teaching discussions (50%)** **To pass the test, you need to obtain 60% correct answers. In terms of verification by observation, attendance and activity at lectures are assessed.** **Students"" activity is assessed when working with source texts and case studies aimed at proposing alternative solutions to economic and creative problems.**
	Grade calculation principles
	The final grade for the course is the lecture grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Creativity and Innovations (kreatywność i innowacje)		Ważona	
	5	Creativity and Innovations (kreatywność i innowacje) [wykład]	zaliczenie z oceną		1,00

Basic reading	ed. by Filip De Beule and Ysabel Nauwelaerts, Edward Elgar (2013): Innovation and creativity : pillars of the future global economy, Cheltenham
	Malcolm Goodman and Sandra Dingli (2013): Creativity and strategic innovation management, Routledge/Taylor & Francis, London/New York
Supplementary reading	Kumar, Vijay (2013): 101 design methods : a structured approach for driving innovation in your organization, John Wiley & Sons, Hoboken, N.J

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**1**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**18**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**20**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Current problems of education in Poland (aktualne problemy edukacji w Polsce) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3362_7S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**dr BARBARA ŻAKOWSKA**
Course instructor	**dr BARBARA ŻAKOWSKA**
Course / module objectives	**After completing the course students will have the knowledge on Polish educational system and will understand the essential problems of the system as well as the main directions of solving them.**
Prerequisites	**none**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Student knows and understand basic values and rules of Polish education system and dilemmas and conflicts**	
	2	**EP2**	**Student have a basic knowledge on educational**	
skills	**1**	**EP3**	**Student is able to use the knowledge for deliberating**	
	2	**EP4**	**Student is able to select and use information to present his/her viewpoint as well as formulate conclusions on educational problems in Poland**	
social competences	**1**	**EP5**	**Student is ready to communicate and cooperate with other to elaborate educational issues.**	
	2	**EP6**	**Student is ready to be involved in different educational projects.**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Current problems of education in Poland (aktualne problemy edukacji w Polsce)**			
Format of instruction: **lecture**			
1. **null**	5	4	0
2. **null**	5	4	0
3. **null**	5	4	0

4. **null**	5	2	0
5. **null**	5	4	0
6. **null**	5	4	0
7. **null**	5	4	0
8. **null**	5	4	0

Modes of delivery	**Wykład**
	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,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	**Student answers two questions. They can receive a maximum of 5pts from each question. This means that the student receives the following grade depending on the points earned:** **5-6pts - 3; 7-8pts - 4; 9-10pts- 5.**
	Grade calculation principles
	The final grade for the course is the lecture grade

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Current problems of education in Poland (aktualne problemy edukacji w Polsce)		Ważona	
	5	Current problems of education in Poland (aktualne problemy edukacji w Polsce) [wykład]	zaliczenie z oceną		1,00

Basic reading	J. Paris (2020): Health, and Nutrition in Early Childhood Education, California Community Colleges
	J. Paris, K. Beeve, C. Springer (2019): Introduction to Curriculum for Early Childhood Education, , California Community Colleges
	Z. Kwieciński (1995): The sociopathology of education, Edytor, Toruń
	(2020): The System of Education in Poland 2020, Foundation for the Development of the Education System, Warsaw
Supplementary reading	J. Marshall (2019): Introduction to comparative and international education, SAGE

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**17**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**20**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Design Thinking (myślenie projektowe) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3437_3S**
Name of field of study: **Hydrobiology**	
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 polish language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**dr KALINA KUKIEŁKO**
Course instructor	**dr KALINA KUKIEŁKO**
Course / module objectives	**The student is to acquire in-depth knowledge of the Design Thinking method, allowing them to use it for the public good and their own entrepreneurship.**
Prerequisites	**No entry requirements.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Knows and understands the principles of creative and design thinking aimed at creating value and social**	
skills	**1**	**EP2**	**Is able to use information sources to learn social trends and adapt our resources to them by providing innovative**	
social competences	**1**	**EP3**	**Is ready to act for the public interest using the Design Thinking method**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Design Thinking (myślenie projektowe)**			
Format of instruction: **lecture**			
1. **null**	5	1	0
2. **null**	5	4	0
3. **null**	5	4	0
4. **null**	5	4	0
5. **null**	5	4	0
6. **null**	5	4	0
7. **null**	5	4	0
8. **null**	5	4	0

9. **null**	5	1	0

Modes of delivery	**lecture**
	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
	PROJEKT	**EP1,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	**A group project (2-4 people) in the form of an idea for a start-up, joint-venture, or civic initiative that solves a diagnosed problem increases the effectiveness of meeting social needs or reduces barriers to access to meeting these needs. Project evaluation criteria: recognition of the needs of the target group (25%), innovativeness of the idea (25%), degree of thought of the idea based on available resources (25%), and idea commercialization plan (25%). Criteria for assessing the public presentation of the project (so-called pitch): time planning (25%), method of presentation (25%), concreteness and measurability of the idea (25%), and time frame for the implementation of the idea (25%). Final grade: calculation of the grade 51% -75% - satisfactory; 76% - 90% - good; 90% - 100% - very good.**
	Grade calculation principles
	The final grade for the course is the lecture grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Design Thinking (myślenie projektowe)		Ważona	
	5	Design Thinking (myślenie projektowe) [wykład]	zaliczenie z oceną		1,00

Basic reading	T. Lockwood (2013): Design Thinking: integrating innovation, customer experience, and brand value, Allworth Press, New York
Supplementary reading	J. Liedtka (2013): Solving problems with Design Thinking: Ten stories of what works, Columbia University Press /Columbia Business School Publishing, New York

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**15**	**0**
Participation in tutorials	**10**	**0**
Preparation of project / essay / etc.	**20**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Diploma laboratory (pracownia dyplomowa) (KIERUNKOWE)**		Course code: **SPR201AIJ3450_42S**
Name of field of study: **Hydrobiology**		
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 polish language, semester: 6 - english language polish language**	

Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
3	5	pracownia dyplomowa	15	0	pg	9
	6	pracownia dyplomowa	15	0	pg	12
Total			**30**			**21**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**The aim is to prepare a thesis. The student will acquire the ability to present the results, participate in discussions, and select the appropriate content from the scientific literature. Is ready for an ethical approach to research.**
Prerequisites	**Knowledge of the theoretical principles of laboratory methods used in biological sciences and the basic principles of practical application.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Student knows the techniques and research tools used in the field of science related to the written thesis.**	**K_W02**
	2	**EP2**	**Student knows and understands the principles of industrial property protection and copyright.**	**K_W10**
skills	**1**	**EP3**	**Student is able to assess the credibility of the obtained results and present them in the form of a presentation during a discussion.**	**K_U04 K_U05**
	2	**EP4**	**The student uses the available sources of information.**	**K_U02**
	3	**EP5**	**The student is able to plan and organize independent work, he can conduct experiments, collect, analyze and draw conclusions on the basis of the obtained results, using the world's scientific literature.**	**K_U04 K_U06 K_U07**
	4	**EP7**	**Able to use B2 level English and specialized terminology related to hydrobiology in its broadest sense.**	**K_U06**
	5	**EP8**	**The student is able to use the knowledge gained at the studies to perform tasks related to the thesis, formulate and solve complex and unusual problems and is able to perform tasks under conditions that are not fully predictable.**	**K_U01**
social competences	**1**	**EP6**	**The student is ready to work professional, to think and act in an entrepreneurial manner.**	**K_K04 K_K05**

CONTENT	Semester	No. of hours	including e-learning

Subject title: **Diploma laboratory (pracownia dyplomowa)**			
Format of instruction: **pracownia dyplomowa**			
1. **Developing a research methodology under the supervision of the supervisor. Methodical preparation of the student to perform the work: acquiring the ability to use the apparatus. Conducting, under the supervisor's control, research and making analysis and measurements related to the topic of work.**	5	15	0
2. **Treatment (including statistical) of the results obtained.**	6	15	0

Modes of delivery	**consultation, discussion, critical evaluation and analysis of research results and source materials**
	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
	PRACA DYPLOMOWA	**EP1,EP2,EP3,EP4,EP5,EP6,EP7,EP8**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP5,EP6,EP8**
	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 completing the diploma class is:** **- collecting research material and relevant literature data** **- processing the obtained collected data**
	Grade calculation principles
	The final grade for the course is the grade from diploma classes.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Diploma laboratory (pracownia dyplomowa)		Ważona	
	5	Diploma laboratory (pracownia dyplomowa) [pracownia dyplomowa]	zaliczenie z oceną		1,00
	6	Diploma laboratory (pracownia dyplomowa)		Ważona	
	6	Diploma laboratory (pracownia dyplomowa) [pracownia dyplomowa]	zaliczenie z oceną		1,00

Basic reading	literatura związana z tematem pracy/literature related to the topic of the diploma thesis :
Supplementary reading	literatura związana z tematem pracy/literature related to the topic of the diploma thesis. :

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**95**	**0**
Private reading and studying	**100**	**0**
Participation in tutorials	**100**	**0**
Preparation of project / essay / etc.	**200**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**525**	
ECTS credits	**21**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**						
Course title: **Diploma Seminar (seminarium dyplomowe) (KIERUNKOWE)**					Course code: **SPR201AIJ3450_43S**	
Name of field of study: **Hydrobiology**						
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 polish language, semester: 6 - english language polish language**				

Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
3	5	seminar	10	0	pg	6
	6	seminar	20	0	pg	8
Total			**30**			**14**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**The aim is to train the student to write a thesis. The aim is also to discuss the principles of implementing and writing a thesis, select a topic, prepare a thesis outline, review the subject literature, quantitative and qualitative analyzes in research, formulate research problems, select and develop research methodology. The student will acquire the ability to conduct research, write eleborates, thesis and correctly draw conclusions. The student is ready to make decisions independently and to perform the work responsibly professional.**
Prerequisites	**Knowledge of theoretical principles and research methods used in biological sciences.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**The student describes and explains the natural sciences processes related to the subject of the diploma thesis.**	**K_W01 K_W05 K_W09**
	2	EP2	**The student knows and understands the detailed rules of intellectual property and copyright protection.**	**K_W10**
skills	1	EP3	**Using a variety of sources of information and own research, is able to prepare, present a presentation, during a discussion on its topic correctly uses the terminology from the field of study.**	**K_U02 K_U03 K_U05**
	2	EP4	**The student is able to perform statistical analyzes and synthesize the obtained results data under the supervision of a tutor.**	**K_U03**
social competences	1	EP5	**The student is ready to care for the achievements and traditions of the profession of a hydrobiologist.**	**K_K06**
	2	EP6	**The student is ready to abide by the rules of professional ethics and to demand it from others when working together in the group.**	**K_K05**

CONTENT	Semester	No. of hours	
			including e-learning
Subject title: **Diploma Seminar (seminarium dyplomowe)**			
Format of instruction: **seminar**			

1. **An introduction to the problems of scientific research. Detailed discussion of typical undergraduate theses. Forms and methods of collecting results. Relation of research to practice, aspects of research Applied. Development of individual methodology of conducted research. Discussing, in stages, received research results. Writing and editing individual chapters of the thesis.**	5	10	0
2. **Presentation of the results obtained during the implementation of the various stages of the thesis. Discussion of the results. Discussing progress in writing the thesis.**	6	20	0

Modes of delivery	**Consultation with the thesis supervisor, discussion, multimedia presentation, text analysis with discussion, analysis of source materials, preparation of the thesis.** 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
	PREZENTACJA	**EP3**
	PRACA DYPLOMOWA	**EP1,EP2,EP4**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Collecting research material and relevant literature data. Processing the collected data. Assessment of the progress in the implementation of the diploma thesis.** **In semester 6, the condition for obtaining a positive grade is the submission of a diploma thesis.**
	Grade calculation principles
	The final grade for the course is the grade from seminars.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Diploma Seminar (seminarium dyplomowe)		Ważona	
	5	Diploma Seminar (seminarium dyplomowe) [seminarium]	zaliczenie z oceną		1,00
	6	Diploma Seminar (seminarium dyplomowe)		Ważona	
	6	Diploma Seminar (seminarium dyplomowe) [seminarium]	zaliczenie z oceną		1,00

Basic reading	literatura związana z tematem pracy/literature related to the research topic. :
	literatura związana z tematem pracy/literature related to the research topic. :
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**50**	**0**
Private reading and studying	**75**	**0**
Participation in tutorials	**85**	**0**
Preparation of project / essay / etc.	**110**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**350**	
ECTS credits	**14**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**						
Course title: **Ecology of water environment (ekologia środowiska wodnego) (PODSTAWOWE)**					Course code: **SPR201AIJ3450_53S**	
Name of field of study: **Hydrobiology**						
Mode and cycle of study: **first-degree, full - time**		Profile of study: **general academic**		Specialty:		
Course / module status **obligatory**			Language of instruction: **semester: 1 - english language polish language**			
Year	**Semester**	**Form of instruction**	**No. of hours**		**Type of credit**	**ECTS**
				including e-learning		
1	1	conversation	30	0	pg	3
Total			**30**			**3**
Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**					
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**					
Course / module objectives	**The aim of the course is to familiarize students with issues related to the ecology of the aquatic environment. After completing the course, the student knows the assumptions and the most important theories in contemporary ecology, and knows how to apply the acquired knowledge to the characteristics of aquatic ecosystems, is ready to update and deepen knowledge about aquatic ecosystems.**					
Prerequisites	**Basic knowledge of biology**					

LEARNING OUTCOMES

Category	**No.**	**Code**	**Description**	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows and understands at an advanced level the concepts and ecological phenomena occurring in aquatic ecosystems.**	**K_W01**
	2	**EP2**	**The student knows and understands the basic research methods, calculations and formulas used in contemporary ecology of aquatic ecosystems**	**K_W02**
	3	**EP3**	**The student knows and understands at an advanced level the connection of ecology with hydrobiology and hydrology.**	**K_W03**
skills	**1**	**EP4**	**The student can perform tasks, solve problems, assess the ecological state based on the knowledge of the ecology of aquatic ecosystems.**	**K_U01**
	2	**EP5**	**The student can properly select and use ecological textbooks, ecological scripts and on their basis solve ecological problems**	**K_U02**
	3	**EP6**	**The student can use appropriate research methods and tools as well as literature and software in order to present research results and interpret them well.**	**K_U03**
social competences	**1**	**EP7**	**The student is ready to criticize the opinions of other ecologists, to interpret the results of research and content in textbooks and scientific works,, and to consult with experts the difficulties with solving problems on his own.**	**K_K02**
	2	**EP8**	**The student is ready to educate the local and regional community about the environment and ecology.**	**K_K03**

CONTENT	Semester	No. of hours	
			including e-learning

Subject title: **Ecology of water environment (ekologia środowiska wodnego)**			
Format of instruction: **conversation**			
1. **Population ecology and Interactions (Feeding Strategies, Foraging Theory, Population Dynamics)**	1	4	0
2. **Behavioral ecology, Natural Enemy-Victim Interactions (inc. Red Queen Theory)**	1	4	0
3. **Food Web Complexity, Network ecology (Keystone species and food webs)**	1	4	0
4. **Species Diversity (alpha, beta, gamma, etc)**	1	4	0
5. **The Metacommunity Concept**	1	2	0
6. **Theories of Freshwater Ecosystem Ecology**	1	4	0
7. **Integrity of ecosystems (Patchy Environment, ecological corridors)**	1	2	0
8. **Ecological Niche**	1	2	0
9. **Domain and Propositions of Succession Theory**	1	2	0
10. **Ecological Gradients (Biomes, The Equilibrium Theory of Island Biogeography)**	1	2	0

Modes of delivery	**multimedia presentation, case study, essay**	
	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
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP2,EP3,EP5,EP6,EP7,EP8**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**The condition for obtaining a credit for the course is a positive grade, which is the average grade obtained on the three essays.**	
	Grade calculation principles	
	The final grade for the course is the grade obtained after completing the discussion classes.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	Ecology of water environment (ekologia środowiska wodnego)		Ważona	
	1	Ecology of water environment (ekologia środowiska wodnego) [konwersatorium]	zaliczenie z oceną		1,00

Basic reading	Scheiner, S. M., & Willig, M. R. (Eds.). (2011): The theory of ecology, University of Chicago Press.
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**5**	**0**
Preparation for contact hours	**10**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**5**	**0**

Preparation of project / essay / etc.	**5**	**0**
Preparation for test / exam	**10**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Unit: **Lecture in the humanities or the social sciences [moduł]**		
Course title: **Economic relations in the Three Seas region (stosunki gospodarcze w rejonie Trójmorza) (OGÓLNOUCZELNIANE)**		Course code: **SPR201AIJ3434_16S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
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	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr hab. MACIEJ CZAPLEWSKI**
Course instructor	**dr hab. MACIEJ CZAPLEWSKI**
Course / module objectives	**To acquaint students with issues related to the countries of the Three Seas region, their internal and external economic ties, as well as with the mechanisms and regularities occurring in the modern economy of those countries. Acquiring the ability to analyze problems related to the Three Seas countries, classify them and solve them by means of creative identification of activities and building projects of a socio-political and economic**
Prerequisites	**none**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows the economic relations between various countries of the Three Seas Initiative**	
	2	**EP2**	**The student knows the ways of studying the similarities and differences occurring in the economies of individual Three Seas countries**	
skills	**1**	**EP3**	**The student classifies and critically assesses the economic changes and their consequences in the various countries of the Three Seas Initiative**	
	2	**EP4**	**The student analyzes and proposes solutions to problems in the economies of the Three Seas countries**	
social competences	**1**	**EP5**	**The student is ready to supplement and improve the acquired knowledge and skills regarding the assessment of economies in the Three Seas region and their importance in Europe as well globally**	
	2	**EP6**	**The student shows creativity and with commitment builds projects of a socio-political and economic nature**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Economic relations in the Three Seas region (stosunki gospodarcze w rejonie Trójmorza)**			
Format of instruction: **lecture**			
1. **null**	6	3	0
2. **null**	6	3	0

3. **null**	6	3	0
4. **null**	6	3	0
5. **null**	6	3	0

Modes of delivery	**Conversation lecture combined with multimedia presentation, case studies**
	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
	PROJEKT	**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	**Credit on the basis of a project in the field of the subject of the lecture.**
	Grade calculation principles
	The final grade for the course is the lecture grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Economic relations in the Three Seas region (stosunki gospodarcze w rejonie Trójmorza)		Ważona	
	6	Economic relations in the Three Seas region (stosunki gospodarcze w rejonie Trójmorza) [wykład]	zaliczenie z oceną		1,00

Basic reading	Ewa Bilewicz, Marcin Gryczka, Halina Nakonieczna-Kisiel (2017): Regionalisation issues in the age of global shifts, Szczecin University Press, Szczecin
	Wróbel Anna (2017): Geografia ekonomiczna : międzynarodowe struktury produkcji i wymiany, Wydawnictwo Naukowe Scholar, Warszawa
Supplementary reading	Barbara Kryk (2018): Gospodarka regionalna i międzynarodowa, T. 1, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin
	Małgorzata Grącik-Zajaczkowski, Joanna Stryjek (2020): Współczesna gospodarka w sieci międzynarodowych powiązań : aktorzy, rynki, współzależności, zagrożenia, Oficyna Wydawnicza SGH, Warszawa
	Paul R. Krugman, Maurice Obstfeld, Marc J. Melitz (2018): Ekonomia Międzynarodowa: teoria i polityka T.1 i T.2, PWN, Warszawa

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**12**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**17**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **E-learning Training (szkolenie e-learningowe) (ANOTHER TO PASS)**		Course code: **SPR201AIJ3605_2S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 1 - english language polish language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	discussion classes	2	2	p	0
Total			**2**			**0**

Course / module coordinator	**mgr KONRAD MIELKO**
Course instructor	**mgr KONRAD MIELKO**
Course / module objectives	**Training for students in the field of distance learning methods and techniques, including the functionality of an e-learning platform and forms of electronic communication with University lecturers and administration. Presentation of forms and methods of assessment using the methods and techniques of distance learning.**
Prerequisites	**Active student account in the stud.usz.edu.pl domain. Basic computer skills.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**knows the basic methods of using Microsoft 365 cloud tools for communication within the university.**	
	2	**EP2**	**has knowledge about the rules for completing subjects taught with the use of distance learning methods and techniques**	
	3	**EP3**	**knows the rules of navigating the e-learning platform**	
skills	**1**	**EP4**	**can log into the e-learning platform**	
	2	**EP5**	**can contact the lecturer and university employees in electronic form**	
	3	**EP6**	**is able to find the right subject taught online and correctly take the exam / test online.**	
social competences	**1**	**EP7**	**has the competence to cooperate and communicate with other students and lecturers in the remote work mode**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **E-learning Training (szkolenie e-learningowe)**			
Format of instruction: **discussion classes**			
1. **null**	1	1	1
2. **null**	1	1	1

Modes of delivery	**e-learning with the use of Moodle platform**	
	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,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	**Passing without a grade on the basis of the test results.**	
	Grade calculation principles	
	Obtaining at least 60% correct answers	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	E-learning Training (szkolenie e-learningowe)		Nieobliczana	
	1	E-learning Training (szkolenie e-learningowe) [ćwiczenia]	zaliczenie		
Basic reading					
Supplementary reading					

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**2**	**2**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**0**	**0**
Participation in tutorials	**0**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**2**	
ECTS credits	**0**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Foreign language (język obcy) [moduł]**	
Course title: **English language (język angielski) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3457_51S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language polish language, semester: 4 - english language polish language, semester: 5 - english language polish language, semester: 6 - english language polish language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	lektorat	30	0	pg	2
	4	lektorat	30	0	pg	2
3	5	lektorat	30	0	pg	3
	6	lektorat	30	0	e	3
Total			**120**			**10**

Course / module coordinator	**mgr IWONA NIEDZIELSKA**
Course instructor	**mgr IWONA NIEDZIELSKA**
Course / module objectives	**The aim is to obtain B2 level by students by expanding and systematizing knowledge in the field of grammar and vocabulary, increasing communication skills in everyday life situations as well as professional issues that interest them**
Prerequisites	**knowledge of grammar, vocabulary and phonetics at B1 level; according to the recommendations of the Common European Framework**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
skills	**1**	**EP1**	**The student has the ability to communicate at the B2 level with various people in verbal and written form and reads articles related to the field of his study**	**K_U06**
	2	**EP2**	**The student participates in conversations, discussions and formulates longer oral statements on general and specialist topics**	**K_U05 K_U06**
	3	**EP5**	**The student is able to independently plan and consistently, to the end of life, implement activities aimed at improving his/her language competence.**	**K_U08**
social competences	**1**	**EP4**	**The student independently plans and consistently improves his language skills, continues the process of training and self-improvement until the end of his life.**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **English language (język angielski)**			
Format of instruction: **lektorat**			
1. **words and phrases about everyday life**	3	10	0

2. **work with specialist material**	3	18	0
3. **test of acquired skills**	3	2	0
4. **exercises in speaking and reading**	4	16	0
5. **language communication**	4	12	0
6. **control test**	4	2	0
7. **professional vocabulary and phrases**	5	16	0
8. **exercises in speaking, listening, reading and writing**	5	12	0
9. **test**	5	2	0
10. **reading and speaking exercises**	6	20	0
11. **listening and writing exercises**	6	8	0
12. **knowledge test**	6	2	0

Modes of delivery	**Classes improving all language competences: reading, listening, speaking and writing relating to the vocabulary and topics in the scope proposed in the foreign language textbook and additional text materials; classes related to the lexical and grammatical material contained in the textbook and resulting from the learning objectives; basics of pronunciation and spelling; creating statements on various topics**
	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 USTNY	**EP1,EP2,EP5**
	SPRAWDZIAN	**EP1**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP5**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,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	**semester 3, 4, 5: the condition for passing the classes is to obtain a positive grade in tests, written assignments; semester 6: the condition for passing the exercises is obtaining a positive grade in the oral exam**
	Grade calculation principles
	semesters: 3, 4, 5: the final grade is the grade obtained for completing classes. Semester 6: the exam grade is the final grade for the subject.

	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
Final grade calculation method	3	English language (język angielski)		Ważona	
	3	English language (język angielski) [lektorat]	zaliczenie z oceną		1,00
	4	English language (język angielski)		Ważona	
	4	English language (język angielski) [lektorat]	zaliczenie z oceną		1,00
	5	English language (język angielski)		Ważona	
	5	English language (język angielski) [lektorat]	zaliczenie z oceną		1,00
	6	English language (język angielski)		Ważona	
	6	English language (język angielski) [lektorat]	egzamin		1,00

Basic reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :
Supplementary reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**120**	**0**
Participation in test / exam	**12**	**0**
Preparation for contact hours	**25**	**0**
Private reading and studying	**40**	**0**
Participation in tutorials	**18**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**35**	**0**
TOTAL workload	**250**	
ECTS credits	**10**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Blok III [moduł]**	
Course title: **Environmental policy (polityka środowiskowa) (KIERUNKOWE)**	Course code: **SPR201AIJ3432_30S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	conversation	15	0	pg	3
		lecture	15	0	pg	
Total			**30**			**3**

Course / module coordinator	**dr IZABELA SZAMREJ-BARAN**
Course instructor	**dr IZABELA SZAMREJ-BARAN**
Course / module objectives	**The aim is to acquire by students the knowledge of environmental policy, the ability to use methods and tools in the implementation of the SD goals, preparation to participate in social projects in the field of environmental protection and sustainable development.**
Prerequisites	**No prerequisites.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**Knowledge of the nature, objectives, functions, principles of environmental policy and Sustainable Development and its relationship with economy**	**K_W01**
	2	EP2	**Knowledge of the mechanisms and instruments for implementing environmental policy and SD goals and of indicators and ways of measuring its effectiveness.**	**K_W10**
skills	1	EP3	**Student identifies and interprets the links between the environment, society and the economy in the context of environmental policy and Sustainable Development**	**K_U01**
	2	EP4	**Uses knowledge of environmental policy instruments to describe the responsibilities of those involved in its implementation; analyses processes and phenomena in the field of environmental policy and SD.**	**K_U02 K_U05**
social competences	1	EP6	**Student has understanding/awareness of the need to protect the environment. Willingness to participate in the preparation of social projects in the field of environmental protection and sustainable development.**	**K_K03 K_K04**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Environmental policy (polityka środowiskowa)**			
Format of instruction: **lecture**			

1. **The Role of Economics in Environmental Policy. Theoretical basis and application of environmental policy. Concept, functions, subject, object of environmental policy.**	5	4	0
2. **Development of economic thought ideas on Natural Resources and the Environment**	5	2	0
3. **Legal aspects of environmental protection (legal regulations, organisation of environmental protection, responsibility). Environmental Policy System in Poland. Instruments of environmental policy and its effects.**	5	2	0
4. **Environmental Policy of the European Union. Principles of the EU environmental policies. Circular economy.**	5	2	0
5. **Sustainable development - basic concepts, genesis and principles of sustainable development. Sustainable Development Goals (SDGs) and measurement.**	5	3	0
6. **Course revision**	5	2	0
Format of instruction: **conversation**			
1. **Nature, the natural environment, natural resources (natural capital and its protection). The natural environment as a basis for economic processes (environment and its functions).**	5	3	0
2. **Ecosystem services**	5	2	0
3. **Ecosystem valuation**	5	2	0
4. **Environmental pollution and degradation**	5	3	0
5. **Water management and waste management.**	5	2	0
6. **Zrównoważona polityka energetyczna a problem wyczerpywania zasobów energetycznych**	5	2	0
7. **Course revision**	5	1	0

Modes of delivery	**- informative lecture** **- multimedia presentations** **- case study** **- group work** **- text / film analysis with 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
	PREZENTACJA	**EP1,EP3,EP4,EP6**
	PROJEKT	**EP4,EP6**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,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	**Classes: the student receives a credit when he/she prepares and gives a presentation and is active during the classes** **Lectures: a student gets a credit when he/she prepares and presents a group project.** **Classes: 70% grade from presentation, 30% grade from activity in class** **Lectures: grade from project.**
	Grade calculation principles
	The final assessment will be calculated as the arithmetic mean of the classes and lecture

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Environmental policy (polityka środowiskowa)		Arytmetyczna	
	5	Environmental policy (polityka środowiskowa) [konwersatorium]	zaliczenie z oceną		
	5	Environmental policy (polityka środowiskowa) [wykład]	zaliczenie z oceną		

Basic reading	Atkinson G., Dietz S., Neumayer E. (2010): Handbook of Sustainable Development, Edward Elgar Publishing
	Barry C. Field, Martha K. Field (2016): Environmental Economics An Introduction, Published by McGraw-Hill, New York
	Burchard-Dziubińska M.(Ed.) (2015): Towards a Green Economy, Wydawnictwo Uniwersytetu Łódzkiego
	Daly H. (1996): Beyond Growth: The Economics of Sustainable Development, Beacon Press Boston
	Folmer H., Gabel L. (Eds) (2000): Principles of Environmental and Resource Economics: A Guide for Students and Decision-Makers, 2nd edition, Edward Elgar, Cheltenham; Northampton MA
	Hanley N., Barbier E. B. (2010): Pricing Nature, Edward Elgar
	Hein L. (2010): The Economics of Ecosystem, Edward Elgar Publishing
	Lovett J. C., Ockwell D. G. (2010): A Handbook of Environmental Management, Edward Elgar Publishing
	Poskrobko B., Poskrobko T. (2012): Environment management in Poland, Białystok University Press
	Sachs J. (2008): Common Wealth. Economics for a Crowded Planet
	Current Polish and EU documents on environmental policy, energy, sustainable development and green economy
	Thematic articles from foreign journals such as
	Thematic reports from ministries and research institutes (eg World Bank, World Economic Forum, the World Resources Institute, United Nations Institute for Sustainable Development).
Supplementary reading	Kryk B. (red.) (2012): Gospodarowanie i zarządzanie środowiskiem , Press University of Szczecin
	Stiglitz J. E., Sen A., Fitoussi J.P. (2013): Report by the Commission on the Measurement of Economic Performance and Social Progress, www.stiglitz-sen-fitoussi.fr
	www.europa-lex.europa.eu
	www.eurostat
	www.foe.co.uk
	www.onz.org.pl/rozwój
	www.stat.gov.pl
	www.waterfootprint.org

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**10**	**0**
Private reading and studying	**15**	**0**
Participation in tutorials	**3**	**0**
Preparation of project / essay / etc.	**5**	**0**
Preparation for test / exam	**10**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Unit: **Lecture in the humanities or the social sciences [moduł]**		
Course title: **Evolution and prospects for the development of the English language (ewolucja i perspektywy rozwoju języka angielskiego) (OGÓLNOUCZELNIANE)**		Course code: **SPR201AIJ3442_13S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **elective**	Language of instruction: **semester: 6 - english language**	

Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
3	6	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr MONIKA SKORASIŃSKA**
Course instructor	**dr MONIKA SKORASIŃSKA**
Course / module objectives	**to familiarize students with the processes of language change that have led to the development of Present-Day English and with potential prospects for the future development of the English language**
Prerequisites	**the knowledge of English language on B2 level**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**knows and understands the evolutionary nature of language, general characteristics of the systems of the English language in the most important stages of its development, changes taking place in the English language, and prospects for its future development**	
skills	**1**	**EP2**	**develops their own research skills in terms of historical linguistics and language change; conducts a linguistic analysis of texts coming from the earlier stages of the development of the English language**	
social competences	**1**	**EP3**	**conducts self-assessment of their competences, directs their development**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Evolution and prospects for the development of the English language (ewolucja i perspektywy rozwoju języka angielskiego)**			
Format of instruction: **lecture**			
1. **null**	6	2	0
2. **null**	6	2	0
3. **null**	6	2	0
4. **null**	6	2	0
5. **null**	6	2	0
6. **null**	6	5	0

Modes of delivery	**interactive presentation, lecture**	
	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
	PROJEKT	**EP1,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	**a positive grade for the project**	
	Grade calculation principles	
	The final grade for the course is the lecture grade	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Evolution and prospects for the development of the English language (ewolucja i perspektywy rozwoju języka angielskiego)		Ważona	
	6	Evolution and prospects for the development of the English language (ewolucja i perspektywy rozwoju języka angielskiego) [wykład]	zaliczenie z oceną		1,00

Basic reading	Crystal, D. (2003): English as a Global Language, CUP, Cambridge
	Crystal, D. : The Past, Present, and Future of World English
	Crystal, D. (1997): The Cambridge Encyclopedia of Language, , CUP, Cambridge
	Millward, C.M., Hayes, M. (2012): A Biography of the English Language, Boston
Supplementary reading	Baugh, A.C., Cable, T. (2002): A History of the English Language, Routledge, London
	Freeborn, D. (1992): From Old English to Standard English, Macmillan, London
	HBJFisiak, J. (2000): An Outline History of English. External History, Wydawnictwo Poznanskie
	McArthur, T. : The Oxford Companion to the English language, OUP, Oxford
	Pyles, T., Algeo, J . (1982): The Origins and Development of the English Language
	Trask, R.L. (1996): Historical Linguistics, Arnold, London

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**13**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**16**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Blok II**	
Course title: **Evolution (ewolucja) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_41S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	conversation	20	0	pg	2
Total			**20**			**2**

Course / module coordinator	**dr hab. LIDIA SKUZA**
Course instructor	**dr hab. LIDIA SKUZA**
Course / module objectives	**Understanding the molecular basis of species evolution and evolutionary mechanisms and acquiring the ability to look at all biological phenomena from the point of view of their evolution**
Prerequisites	**Knowledge of basic general biology and genetics**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student understands the mechanism of action of evolution based on random mutational variation and the operation of genetic drift and natural selection. He/she understands where the diversity of the organic world comes from**	**K_W01 K_W04 K_W06**
skills	**1**	**EP2**	**Student is able to look at all biological phenomena from the point of view of their evolution; to be able to see and show the inconsistency of explanations of biological observations with the theory of evolution and to explain the principles of evolution**	**K_U02 K_U07**
social competences	**1**	**EP3**	**The student treats the theory of evolution as the overarching theory of biology and is able to courageously defend it against ideological attacks, such as creationism or the concept of intelligent design**	**K_K01 K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Evolution (ewolucja)**			
Format of instruction: **conversation**			
1. **History of the study of evolution. Darwin's theory of evolution, history of evolutionary thought**	5	2	0
2. **Biogenesis, hypotheses about the origin and early evolution of life; main stages of life on Earth.**	5	2	0
3. **The molecular basis of evolution. Variability in natural populations. Inter-population variability.**	5	3	0
4. **Direct evidence of evolution.**	5	2	0

5. **Natural selection. Hardy and Weinberg's law, mutation-selection equilibrium. Interaction of drift and selection, molecular clock, natural and artificial selection for quantitative traits. Natural selection and adaptation.**	5	3	0
6. **The evolution and persistence of sexual reproduction. Mating systems and sexual selection. Conflicts within the genome.**	5	2	0
7. **Classification and phylogeny.**	5	2	0
8. **Speciation; adaptive radiations. Species extinctions; great extinctions.**	5	2	0
9. **Macroevolution - evolution of higher taxonomic units, history of evolutionary process on geological time scale.**	5	2	0

Modes of delivery	**Information-conversation lecture conducted with the use of multimedia presentations and analysis of scientific articles combined with 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
	KOLOKWIUM	**EP1,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	
	Colloquium covering knowledge from lectures and recommended literature
	Grade calculation principles
	The grade from the colloquium is the grade from the course

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Evolution (ewolucja)		Ważona	
	5	Evolution (ewolucja) [konwersatorium]	zaliczenie z oceną		1,00

Basic reading	Futuyma Douglas J. , Kirkpatrick Mark (2018): Evolution, Oxford University Press
	, https://tsjok45.wordpress.com/wp-content/uploads/2011/01/evolution__3rd_edition-ridley-book.pdf
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**20**	**0**
Participation in test / exam	**4**	**0**
Preparation for contact hours	**6**	**0**
Private reading and studying	**8**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**6**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Genetics (genetyka) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_10S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	2	laboratory	30	0	pg	5
		lecture	30	0	e	
Total			**60**			**5**

Course / module coordinator	**dr hab. LIDIA SKUZA**
Course instructor	**dr hab. LIDIA SKUZA**
Course / module objectives	**Transfer of knowledge of the basics of genetics, in relation to pro and eukaryotic organisms. The main objectives of the course are: (a) to get acquainted with cellular and molecular mechanisms responsible for inheritance processes, (b) to indicate the importance of environmental factors in shaping the variability of complex features and causing mutations, (c) to present selected mutations responsible for the development of hereditary diseases and responsible for variability of selected quantitative traits, (d) to present the basis of population genetics.** **The student acquires the ability to apply basic methods of genetic research and critical data analysis, is ready to constantly update the knowledge in the field of genetics**
Prerequisites	**Knowledge of biology and genetics from the high school curriculum**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows and understands the basic concepts of general genetics, the basic laws of heredity, the structure and organization of genetic material, its transformations and routes of its transmission within the organism and between organisms**	**K_W01 K_W06**
	2	**EP2**	**The student has knowledge about the sources and types of genetic variability, inheritance patterns, basic genetic diseases occurring in humans and their causes**	**K_W01 K_W03 K_W06**
skills	**1**	**EP3**	**The student will apply basic genetic techniques, solves genetic problems and tasks. The student is able to classify Drosophila melanogaster mutations and chooses the method of cross-breeding and predicts progeny genotypes and analyze them in practice.**	**K_U02 K_U03 K_U04**
	2	**EP4**	**The student draws conclusions on the basis of crosses about the principles of inheritance of traits**	**K_U02 K_U04**
social competences	**1**	**EP5**	**The student is aware of the level of his/her knowledge and skills, understands the need for constant professional training, performs self-assessment of his/her own competences and improves skills, determines the directions of his/her own development and education**	**K_K01 K_K02**

CONTENT	Semester	No. of hours	including e-

			learning
Subject title: **Genetics (genetyka)**			
Format of instruction: **lecture**			
1. **Outline of the history of genetics**	2	2	0
2. **Structure and properties of nucleic acids. Prokaryote and Eukaryote genome organization. Mitochondrial DNA organization. Transposons. Types and functions of RNA.**	2	4	0
3. **Mechanism of DNA replication of bacterial and eukaryotic cells.**	2	3	0
4. **Gene organization in bacterial and eukaryotic cells. Transcription. Regulation of gene expression in Pro- and Eukaryotes at the transcriptional level. Protein and DNA modifications. Regulation of gene expression post-transcriptionally. splicing, mechanism of mRNA maturation. Genetic code. Translation. Posttranslational modifications and protein transport in the cell.**	2	4	0
5. **Basics of classical and molecular genetics**	2	3	0
6. **Mechanisms of inheritance, hereditary variability and the disclosure of genotypic features**	2	3	0
7. **Sex determination, gender-related traits. Parental genomic stigma (mechanism, significance).**	2	3	0
8. **The interaction of the genotype and the environment on the examples of plants and animals (including humans)**	2	3	0
9. **Gene, chromosome and genomic mutations. Examples of genetic diseases**	2	3	0
10. **Concepts of genetic and cell engineering (cloning) and GMO**	2	2	0
Format of instruction: **laboratory**			
1. **Breeding of D. melanogaster according to Mendel's I and II law**	2	5	0
2. **Mendel's I and II law. Multiple alleles, pleiotropy, lethality, epistasis**	2	5	0
3. **Inheritance of qualitative and quantitative traits. Sex determination. Inheritance of sex-linked traits.**	2	5	0
4. **Organization of genetic material, cell division.**	2	5	0
5. **DNA isolation as a stage of genetic analysis**	2	4	0
6. **PCR and electrophoresis as tools of molecular genetics**	2	6	0

Modes of delivery	**Lectures based on current knowledge of mechanisms responsible for inheritance and variability of traits. , Laboratory exercise conducted using the group work method.**
	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,EP5**
	KOLOKWIUM	**EP1,EP3,EP4,EP5**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**1. Obtaining a passing grade from the laboratory, which is the criterion for taking the written exam. The laboratory is passed on the basis of receiving a positive grade of the test on each topic and the conclusions formulated on the basis of the experiments performed during the laboratories. 2. Positive evaluation of the lecture content during the written examination**
	Grade calculation principles
	The final grade for the course is calculated as the arithmetic mean of the grades from the lectures and exercises in the ratio 1:1

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Genetics (genetyka)		Arytmetyczna	
	2	Genetics (genetyka) [wykład]	egzamin		

	2	Genetics (genetyka) [laboratorium]	zaliczenie z oceną		

Basic reading	Benjamin Pierce (2018): Genetics Essentials, W.H.Freeman & Co Ltd
	T.A. Brown (2018): Genomes 4th Edition, Taylor & Francis Inc
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**3**	**0**
Preparation for contact hours	**15**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**18**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**19**	**0**
TOTAL workload	**125**	
ECTS credits	**5**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Geology and paleontology (geologia i paleontologia) (KIERUNKOWE)**	Course code: **SPR201AIJ3446_44S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	6	discussion classes	30	0	pg	5
		lecture	15	0	pg	
		zajęcia terenowe	15	0	pg	
Total			**60**			**5**

Course / module coordinator	**dr hab. JAKUB WITKOWSKI**
Course instructor	**dr hab. JAKUB WITKOWSKI**
Course / module objectives	**Developing a synthetic understanding of Earth's evolution, and the geological processes shaping the Earth system. Acquiring basic skills in rock, mineral and fossil identification.**
Prerequisites	**High school-level knowledge of physics, chemistry and physical geography, and the ability to work with various written and cartographic resources.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Understands the basic geological terminology and recognizez geological processes shaping the hydrosphere.**	**K_W01**
	2	**EP2**	**Appreciates the links beetween geological structure and the occurrence of water bodies, and water chemistry over a given area.**	**K_W03**
skills	**1**	**EP3**	**Performs macroscopic identification of the major minerals, rocks and fossils, and uses the collected information to obtain an in-depth understanding of the processes shaping a water body.**	**K_U01**
	2	**EP4**	**Is capable of extracting geological data required for hydrobiological research using various sources of information.**	**K_U02**
social competences	**1**	**EP5**	**Appreciates the need to order, synthetize and update geological knowledge using the available sources of information.**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Geology and paleontology (geologia i paleontologia)**			
Format of instruction: **lecture**			
1. **Planet Earth: physical and chemical composition, structure and evolution.**	6	1	0
2. **Outline of continent and ocean geology.**	6	2	0

3. **Płyty litosferyczne Ziemi (podział i granice)**	6	1	0
4. **The rock cycle: magmatism - erosion - transport - deposition - metamorphism - melting.**	6	2	0
5. **Igneous and metamorphic processes.**	6	2	0
6. **Main morphogenetic factors,**	6	2	0
7. **Main sedimentary settings.**	6	2	0
8. **Groundwaters and karst processes.**	6	3	0
Format of instruction: **discussion classes**			
1. **Basic terminology; physical features of minerals; rock textures.**	6	2	0
2. **Minerals and textures found in igneous rocks.**	6	2	0
3. **Igneous rocks.**	6	2	0
4. **Identifying mineral physical features and igneous rocks - test.**	6	1	0
5. **Minerals and textures found in sedimentary rocks.**	6	2	0
6. **Sedimentary rocks**	6	2	0
7. **Identifying sedimentary rocks - test.**	6	1	0
8. **Minerals and textures found in metamorphic rocks.**	6	2	0
9. **Metamorphic rocks.**	6	2	0
10. **Identifying metamorphic rocks - test.**	6	1	0
11. **Introduction to paleontology.**	6	2	0
12. **Fossils: Porifera and Coelenterata.**	6	2	0
13. **Fossils: Arthropoda and Brachiopoda**	6	3	0
14. **Fossils: Mollusca**	6	3	0
15. **Fossils: Echinodermata and Graptolithina**	6	2	0
16. **Paleontology - test.**	6	1	0
Format of instruction: **zajęcia terenowe**			
1. **Geological compass, geological maps, geological sections.**	6	5	0
2. **Geology versus relief.**	6	5	0
3. **Geology versus occurrences of water bodies, and physical/chemical water parameters.**	6	5	0

Modes of delivery	**Field classes (using geological cartographic resources; relationship between geological structure and terrain relief; impact of geology on the occurrence of water bodies and water chemistry), Lecture in the form of a multimedia presentation., Practical classes in mineralogy and petrography (mineral and rock identification)., Practical classes in paleontology (learning to identify basic fossil groups).**	
	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**
	SPRAWDZIAN	**EP3,EP4**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Positive grade required from a written test covering the scope of lectures. Positive grades required from spoken and written tests carried out during practical and field classes.**
	Grade calculation principles
	Final grade is a weighed average involving 40% of the lecture grade + 30% of the practical class grade + 30% of the field classes grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Geology and paleontology (geologia i paleontologia)		Ważona	
	6	Geology and paleontology (geologia i paleontologia) [zajęcia terenowe]	zaliczenie z oceną		0,30
	6	Geology and paleontology (geologia i paleontologia) [ćwiczenia]	zaliczenie z oceną		0,30
	6	Geology and paleontology (geologia i paleontologia) [wykład]	zaliczenie z oceną		0,40

Basic reading	Borówka, R.K. (2001): Budowa Ziemi bez tajemnic, Wydawnictwo Kurpisz, Poznań
	Ciesielczuk J., Jabłońska M., Kozłowski K. (2006): Geologia dla studentów geografii,, Wydawnictwo Uniwersytetu Śląskiego, Katowice
	Mizerski W. (2014): Geologia dynamiczna, PWN, Warszawa
	Radwańska U. (2007): Podstawy paleontologii,, Wydawnictwo Uniwersytetu Warszawskiego, Warszawa
	Stanley S. (2002): Historia Ziemi, PWN, Warszawa
	Świerczewska-Gładysz E., Czubla P., Mizerski W. (2017): Przewodnik do ćwiczeń z geologii, PWN, Warszawa
Supplementary reading	Duxbury A.O., Duxbury A.B., Sverdrup K.A. (2002): Oceany świata, PWN, Warszawa
	Mizerski W. Orłowski S. (2017): Geologia historyczna, PWN, Warszawa

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**10**	**0**
Private reading and studying	**18**	**0**
Participation in tutorials	**5**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**30**	**0**
TOTAL workload	**125**	
ECTS credits	**5**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Foreign language (język obcy) [moduł]**	
Course title: **German language (język niemiecki) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3457_50S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language, semester: 4 - english language, semester: 5 - english language, semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	lektorat	30	0	pg	2
	4	lektorat	30	0	pg	2
3	5	lektorat	30	0	pg	3
	6	lektorat	30	0	e	3
Total			**120**			**10**

Course / module coordinator	**mgr JOANNA PAŚNICKA-STOPA**
Course instructor	**mgr JOANNA PAŚNICKA-STOPA**
Course / module objectives	**The aim is to obtain B2 level by students by expanding and systematizing knowledge in the field of grammar and vocabulary, increasing communication skills in everyday life situations as well as professional issues that interest them**
Prerequisites	**knowledge of grammar, vocabulary and phonetics at B1 level; according to the recommendations of the Common European Framework**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
skills	**1**	**EP1**	**The student has the ability to communicate at the B2 level with various people in verbal and written form and reads articles related to the field of his st**	**K_U06**
	2	**EP2**	**The student participates in conversations, discussions and formulates longer oral statements on general and specialist topics**	**K_U05 K_U06**
	3	**EP3**	**The student independently plans and consistently improves his language skills, continues the process of training and self-improvement until the end of his life.**	**K_U08**
social competences	**1**	**EP4**	**He is aware of his linguistic competence and the usefulness of his knowledge in professional work, therefore when he cannot solve the problem himself, he is ready to use expert consultations**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **German language (język niemiecki)**			
Format of instruction: **lektorat**			

1. **words and phrases about everyday life**	3	10	0
2. **work with specialist material**	3	18	0
3. **test of acquired skills**	3	2	0
4. **exercises in speaking and reading**	4	16	0
5. **language communication**	4	12	0
6. **control test**	4	2	0
7. **professional vocabulary and phrases**	5	16	0
8. **exercises in speaking, listening, reading and writing**	5	12	0
9. **test**	5	2	0
10. **reading and speaking exercises**	6	20	0
11. **listening and writing exercises**	6	8	0
12. **knowledge test**	6	2	0

Modes of delivery	**Classes improving all language competences: reading, listening, speaking and writing relating to the vocabulary and topics in the scope proposed in the foreign language textbook and additional text materials; classes related to the lexical and grammatical material contained in the textbook and resulting from the learning objectives; basics of pronunciation and spelling; creating statements on various topics**
	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 USTNY	**EP1,EP2,EP3**
	SPRAWDZIAN	**EP1**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP3**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,EP3,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	**semester 3, 4, 5: the condition for passing the exercises is to obtain a positive grade in tests, written assignments; semester 6: the condition for passing the exercises is obtaining a positive grade in the oral exam**
	Grade calculation principles
	semesters: 3, 4, 5: the final grade is the grade obtained for completing classes. Semester 6: the exam grade is the final grade for the subject

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	German language (język niemiecki)		Ważona	
	3	German language (język niemiecki) [lektorat]	zaliczenie z oceną		1,00
	4	German language (język niemiecki)		Ważona	
	4	German language (język niemiecki) [lektorat]	zaliczenie z oceną		1,00
	5	German language (język niemiecki)		Ważona	
	5	German language (język niemiecki) [lektorat]	zaliczenie z oceną		1,00
	6	German language (język niemiecki)		Ważona	
	6	German language (język niemiecki) [lektorat]	egzamin		1,00

Basic reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :

Supplementary reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**120**	**0**
Participation in test / exam	**8**	**0**
Preparation for contact hours	**30**	**0**
Private reading and studying	**50**	**0**
Participation in tutorials	**25**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**17**	**0**
TOTAL workload	**250**	
ECTS credits	**10**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Global water resources (zasoby wodne Ziemi) (PODSTAWOWE)**		Course code: **SPR201AIJ3446_1S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 1 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	laboratory	30	0	pg	4
		lecture	30	0	pg	
Total			**60**			**4**

Course / module coordinator	**dr hab. ROMAN MARKS**
Course instructor	**dr hab. ROMAN MARKS**
Course / module objectives	**The aim of the course is for the student to acquire knowledge about water resources on Earth and the properties of water. Student after the course can make observations and correctly interpret hydrological phenomena and is aware of importance of problems concerning water resources.**
Prerequisites	**Basic knowledge in physics and chemistry**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**Student knows and understands the phenomena and processes that direct the water cycle, and the phenomena and processes that affect the global state of water resources.**	**K_W01**
	2	EP2	**The student knows and understands the basic research methods used in laboratories and the field to study water properties**	**K_W02 K_W07**
skills	1	EP3	**The student uses appropriate measurement techniques.**	**K_U03**
	2	EP4	**Student is able to independently and in team to conduct experiments, measurements and simulations and hydrological observations. Formulates conclusions on the basis of observations and analysis results.**	**K_U04 K_U07**
social competences	1	EP5	**The student is prepared to initiate actions to address aquatic environmental hazards and to control and evaluate the state of the hydrosphere.**	**K_K04**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Global water resources (zasoby wodne Ziemi)**			
Format of instruction: **lecture**			
1. **Distribution of water resources on the Earth**	1	3	0
2. **Impact of water resources on temperature distribution on the Earth**	1	3	0
3. **Ocean as the main medium that transport mass and heat on the Earth**	1	3	0

4. **Water-air interactions**	1	3	0
5. **Physical and chemical properties of water molecule**	1	3	0
6. **Physical and chemical properties of ionic hydrates**	1	3	0
7. **Rotational features of water molecules and ionic hydrates**	1	3	0
8. **Climate change related transition of water resources on the Earth**	1	3	0
9. **Contamination of water resources on the Earth**	1	3	0
10. **Water resources for biosphere**	1	3	0
Format of instruction: **laboratory**			
1. **Physical properties of water**	1	3	0
2. **Experiments reviling specific and latent heat of water**	1	3	0
3. **Thermal capacity of water**	1	3	0
4. **Observations of effects induced by water rotational motions in the coastal zone**	1	4	0
5. **Experimental observation of rotational features of water vapor**	1	2	0
6. **Recording of salt dissociation**	1	3	0
7. **Measurements of conductivity in water**	1	3	0
8. **Measurements of distribution of electric charge in airborne droplets**	1	3	0
9. **Experimental observations of marine aerosol s and its physical properties**	1	3	0
10. **Experimental measurements using TriOS and WetLab measuring systems**	1	3	0

Modes of delivery	**Experiments, measurements and observations conducted in laboratory and in marine coastal zone, Presentation of research results, 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**
	SPRAWDZIAN	**EP1,EP2,EP3**
	PROJEKT	**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.	
Grading criteria	**The lectures - getting positive evaluation from the test covering the lectures' contents The laboratory: the student receives a positive evaluation of the tests and project.**	
	Grade calculation principles	
	The final grade for the course is the average of grades from lectures and laboratories	

	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
Final grade calculation method	1	Global water resources (zasoby wodne Ziemi)		Arytmetyczna	
	1	Global water resources (zasoby wodne Ziemi) [wykład]	zaliczenie z oceną		
	1	Global water resources (zasoby wodne Ziemi) [laboratorium]	zaliczenie z oceną		

Basic reading	Knauss J.A (2005): Introduction to Physical Oceanography, , Waveland Pr. Inc.
	Marks R. (2019): Water Vapor Induced Airborne Rotational Features , Meteorology Hydrology and Water Management, 7, 2, 29-47
	Marks R., Górecka E., McCartney K., Borkowski W. (2019): Rising bubbles as mechanism for scavenging and aerosolization of diatoms , Journal of Aerosol Science, Vol. 128, 79-88.
	Webb P. (2023): Introduction to oceanography
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**6**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**4**	**0**
Preparation of project / essay / etc.	**3**	**0**
Preparation for test / exam	**15**	**0**
TOTAL workload	**100**	
ECTS credits	**4**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Gothic literature and its adaptations (literatura grozy i jej adaptacje) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3443_5S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**dr BARBARA BRAID**
Course instructor	**dr BARBARA BRAID**
Course / module objectives	**To familiarize students with the tradition of gothic literature and its influence on contemporary culture, in particular film and television adaptations**
Prerequisites	**English skills at B2 level**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows general trends in Gothic literature**	
	2	**EP2**	**The student knows the most important examples and aspects of Gothic adaptations**	
skills	**1**	**EP3**	**The student can recognise and interpret characteristic features of the Gothic genre in literature and adaptation**	
	2	**EP4**	**The student can evaluate and characterise the influence of Gothicisms on European and American literature and culture**	
social competences	**1**	**EP5**	**The student is ready to plan their work and complete it on time**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Gothic literature and its adaptations (literatura grozy i jej adaptacje)**			
Format of instruction: **lecture**			
1. **null**	5	2	0
2. **null**	5	2	0
3. **null**	5	2	0
4. **null**	5	2	0
5. **null**	5	2	0
6. **null**	5	2	0

7. **null**	5	2	0
8. **null**	5	2	0
9. **null**	5	2	0
10. **null**	5	2	0
11. **null**	5	2	0
12. **null**	5	2	0
13. **null**	5	2	0
14. **null**	5	2	0
15. **null**	5	2	0

Modes of delivery	**Lecture, audiovisual presentation**
	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
	PROJEKT	**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	**Students write a reading & watching journal on 3 selected gothic works.**
	Grade calculation principles
	The final grade for the course is the lecture grade

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Gothic literature and its adaptations (literatura grozy i jej adaptacje)		Ważona	
	5	Gothic literature and its adaptations (literatura grozy i jej adaptacje) [wykład]	zaliczenie z oceną		1,00

Basic reading	Botting Fred (2013): Gothic. 2nd ed, Routledge, London and New York
	Byron, Glennis, and Dale Townshend, eds. (2014): The Gothic World. 1st ed., Routledge, London and New York
	Reyes, Xavier Aldana (2020): Gothic Cinema, Routledge, London and New York
Supplementary reading	Goddu, Teresa A. (1997): Gothic America: Narrative, History, and Nation, Columbia UP, New York
	Hogle, Jerrod E. (2014): The Cambridge Companion to Modern Gothic, Cambridge University Press, Cambridge
	Hughes, William (2017): Key Concepts in the Gothic, Edinburgh University Press, Edinburgh
	Jones, David J. (2018): Gothic Effigy: A Guide to Dark Visibilities, Manchester University Press, Manchester
	Leitch, Thomas, ed. (2017): The Oxford handbook of adaptation studies, Oxford University Press, Oxford
	Punter, David, ed. (2001): A Companion to the Gothic, Blackwell, Oxford

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**

Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**19**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**20**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Herpetology and mammalogy (herpetologia i teriologia) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_21S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 4 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	4	discussion classes	15	0	pg	3
		lecture	15	0	pg	
Total			**30**			**3**

Course / module coordinator	**dr hab. ŁUKASZ JANKOWIAK**
Course instructor	**dr hab. ŁUKASZ JANKOWIAK**
Course / module objectives	**Knowledge about the factors determining the biology of amphibians, reptiles and mammals** **Ability to identification specimens of amphibians, reptiles and mammals**
Prerequisites	**Knowledge of the zoology at the secondary school grade**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Defines the sources of biodiversity of amphibians, reptiles and mammals. Discusses the causes of the biodiversity in terms of time and geography**	**K_W05**
skills	**1**	**EP2**	**Uses the scientific literature**	**K_U02**
social competences	**1**	**EP3**	**maintains a fact-based and critical attitude in evaluating his own work**	**K_K01**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Herpetology and mammalogy (herpetologia i teriologia)**			
Format of instruction: **lecture**			
1. **Amphibians and reptiles: origin**	4	1	0
2. **Amphibians and reptiles: reproduction and life histories**	4	2	0
3. **Amphibians and reptiles: physiological ecology**	4	1	0
4. **Amphibians and reptiles: Behavioural ecology**	4	2	0
5. **Amphibians and reptiles: population dynamics and conservation**	4	2	0
6. **Mammals: origins**	4	1	0
7. **Mammals: reproduction and life history**	4	2	0
8. **Mammals: behavioural ecology**	4	2	0
9. **Mammals: population dynamics and conservation**	4	2	0

Format of instruction: **discussion classes**			
1. **Classification and diversity: Caecilians**	4	1	0
2. **Classification and diversity: Caudata**	4	2	0
3. **Classification and diversity: Anura**	4	2	0
4. **Classification and diversity: Turtles**	4	2	0
5. **Classification and diversity: Crocodylians**	4	2	0
6. **Classification and diversity: Tuataras and Lizards**	4	1	0
7. **Classification and diversity: Snakes**	4	1	0
8. **General classification and diversity of mammals with the distinction of mammals in aquatic environments**	4	4	0

Modes of delivery	**prezentacja multimedialna, opracowanie projektu, praca w grupach**
	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**
	SPRAWDZIAN	**EP1,EP2**
	PROJEKT	**EP1,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	
	- writing test **- performance of a final work: slides** **- the final credit based on partial credits received during the semester for specific activities (partial tests covering the knowledge of the lectures and recommended literature, completion of classes, presentation and tests)**
	Grade calculation principles
	The final grade will be calculated as an average of the grades (1:1) acquired by the student.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	Herpetology and mammalogy (herpetologia i teriologia)		Arytmetyczna	
	4	Herpetology and mammalogy (herpetologia i teriologia) [ćwiczenia]	zaliczenie z oceną		
	4	Herpetology and mammalogy (herpetologia i teriologia) [wykład]	zaliczenie z oceną		

Basic reading	
	Donald W. Linzey (2020): Vertebrate biology : systematics, taxonomy, natural history, and conservation Third edition, Johns Hopkins University Press, Baltimore, Maryland
	Hadoram Shirihai, Brett Jarrett (2021): Whales, Dolphins and Seals: A field guide to the marine mammals of the world, Bloomsbury Wildlife
	Mike Pingleton, Joshua Holbrook (2019): The Field Herping Guide: Finding Amphibians and Reptiles in the Wild (Wormsloe Foundation Nature Books) , University of Georgia Press

Supplementary reading	
	Annalisa Berta, James L. Sumich, Kit M. Kovacs (2005): Marine Mammals - Evolutionary Biology, Academic Press
	Laurie J. Vitt, Janalee P. Caldwell (2013): Herpetology: An Introductory Biology of Amphibians and Reptiles, Academic Press
	Thomas A. Jefferson, Stephen Leatherwood, Marc A. Webber (1993): Marine Mammals of the World, FAO and UNEP, Rzym

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	**5**	**0**
Participation in tutorials	**4**	**0**
Preparation of project / essay / etc.	**8**	**0**
Preparation for test / exam	**9**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Hydrobotany (hydrobotanika) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_8S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	2	laboratory	30	0	pg	7
		lecture	30	0	e	
		zajęcia terenowe	20	0	pg	
Total			**80**			**7**

Course / module coordinator	**prof. dr hab. AGNIESZKA POPIELA**
Course instructor	**prof. dr hab. AGNIESZKA POPIELA**
Course / module objectives	**Students are acquainted with the methodology of research on aquatic flora and vegetation, adaptations of plants to aquatic environment. Student is able to recognize aquatic and reed species and identify plant communities. The student acquires practical skills of working with microscope, binocular magnifier, conducting microscopic observation and drawing under microscope and binocular magnifier. The student is ready to protect plant species diversity.**
Prerequisites	**Knowledge of biology at the high school level.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student understands the specificity of the conditions for the occurrence of aquatic plants.**	**K_W01**
	2	**EP2**	**The student knows and understands the basic research methods used in contemporary hydrobotany**	**K_W02**
skills	**1**	**EP3**	**The student is able to properly select and use appropriate research methods and tools, and present the results of observations and conclusions, including the analysis of professional literature, in written and oral form, using advanced information and communication techniques**	**K_U02 K_U03 K_U04**
	2	**EP4**	**The student is able to carry out observations and measurements using appropriate research and laboratory tools and methods, as well as interpret the obtained results and draw conclusions based on his knowledge**	**K_U01**
	3	**EP5**	**The student is able to properly select and use sources of scientific information, critically analyze and evaluate them, and perform data synthesis to formulate and solve problems**	**K_U03**

social competences	**1**	**EP6**	**The student is ready to critically assess his knowledge and received content and to recognize the importance of general and specialist knowledge in the field of hydrobiology in solving cognitive and practical problems, and to consult with experts the difficulties with solving problems on his own.**	**K_K03 K_K04**
	2	**EP7**	**The student is ready to fulfill social obligations, including sharing knowledge in the field of hydrobota with others and co-organizing activities for the social environment**	**K_K04**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Hydrobotany (hydrobotanika)**			
Format of instruction: **lecture**			
1. **Adaptation of plants to the aquatic environment**	2	4	0
2. **Classifications of aquatic plants based upon morphology: Amphiphytes, Elodeids, Isoetids, Helophytes, Nymphaeids, Pleuston**	2	2	0
3. **The importance of plants in the aquatic environment. Classification of Macrophytes: Emergent, Submerged, 3.3 Floating-leaved, Free-floating**	2	2	0
4. **Phytogeographic problems of aquatic macrophytes. Areas of global and local distribution. factors determining the distribution of aquatic and marsh plants**	2	4	0
5. **Systematics of aquatic plants. Chlorophyta: Chara, Nitella, Cladophora, Enteromorpha Rhodophyta: Lemanea, Batrachospermum Xanthophyta: Vaucheria Bryophyta and liverworts: Fontinalis, Riella, Ricciocarpus Pteridophyta: Azolla, Salvinia, Isoetes Spermatophyta: Sagittaria, Alisma, Butomus, Brasenia, Cabomba, Callitriche, Ceratophyllum, Scirpus, Carex, Myriophyllum, Elodea, Vallisneria, Juncus,Lemna,Utricularia, Nelumbo, Nymphaea, Nuphar, Spartina, Eichhornia, Potamogeton, Ranunculus, Sparganium, Typha**	2	12	0
6. **Plant communities of fresh waters of Central Europe. Syntaxa: Fontinatetea, Lemnetea, Charaetea, Phragmitetea, Potametea, Litorelletea, Utricularietea, Alnetea glutinosae,**	2	6	0
Format of instruction: **laboratory**			
1. **Biodiversity of aquatic plants. determination of species: Taxa of genus: Acorus, Aldrovanda, Alisma, Batrachium, Berula, Bulboschoenus, Butomus, Chara, Calla, Calliergon, Caltha, Carex, Cladium, Comarum, Dreplanocladus, Eleocharis, Elisma, Epilobium, Equisetum, Filipendula, Galium, Glyceria, Heleocharis, Helodium, Hippuris, Hydrilla, Hydrocharis, Hydrocotyle, Iris, Isoetes, Juncus, Lemna, Limnanthemum, Litorella, Lobelia, Luronium, Lysimachia, Mentha, Menyanthes, Nitelopsis, Parnassia, Nuphar, Nymphaea, Oenanthe, Parnassia, Phalaris, Phragmites, Potamogeton, Ranuncuus, Riccia, Rumex, Sagittaria, Salwinia, Salix, Schoenoplectus, Scirpus, Senecio, Sium, Solanum, Sparganium, Spirodela, Stachys, Stellaria, Stratioides, Trapa, Typha, Utricularia, Veronica, Wolffia.**	2	30	0
Format of instruction: **zajęcia terenowe**			
1. **Learning to recognize water and rush plant communities. Field work methods.**	2	20	0

Modes of delivery	**group work, multimedia presentation, macroscopic and microscopic observation, drawings**	
	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,EP7**
	SPRAWDZIAN	**EP5,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	**lecture: written exam: the condition to get a credit for passing lectures is obtaining a positive grade from the exam covering the content presented in the lectures** **The student is allowed to get the pass mark credit of the laboratory classes.** **field classes: the student is required to get a positive mark for practical plant identification skills and knowledge of fieldwork methods**
	Grade calculation principles
	Average of exam grade and laboratory and field classes

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Hydrobotany (hydrobotanika)		Arytmetyczna	
	2	Hydrobotany (hydrobotanika) [laboratorium]	zaliczenie z oceną		
	2	Hydrobotany (hydrobotanika) [zajęcia terenowe]	zaliczenie z oceną		
	2	Hydrobotany (hydrobotanika) [wykład]	egzamin		

Basic reading	Hrivnák, R., Bubíková, K., Oťaheľová, H., & Šumberová, K. (2019): Formalised classification of aquatic vegetation in Slovakia. , Phytocoenologia, 49, 107–133. https://doi.org/10.1127/phyto/2018/0276
	Landucci, F., Šumberová, K., Tichý, L., Hennekens, S., Aunina, L., Bi?ă-Nicolae, C. et al. (2020) (2020): Classification of the European marsh vegetation (Phragmito-Magnocaricetea) to the association level., Applied Vegetation Science, 23, 297–316. https://doi.org/10.1111/avsc.12484
	Lewandowska AM, Milecka K, Niedzielski P, Czerwiński S, Gałka M (2023): Late glacial development of lakes and wetland vegetation in a dune area in Central Poland. , Acta Palaeobot 63:1–20. https://doi.org/10.35535/acpa-2023-0001
Supplementary reading	Christopher D. Cook (1996): Aquatic Plant Book Hardcover, Balogh Scientific Books; 2nd edition
	Eglantine Chappuis, Enric Ballesteros, Esperanca Gacia (2012): Distribution and richness of aquatic plants acrossEurope and Mediterranean countries: patterns,environmental driving factors and comparison withtotal plant richness, Journal of Vegetation Science23(2012) 985–997
	P. A. Chambers, P. Lacoul, K.J. Murphy, S.M. Thomaz (2008): Global diversity of aquatic macrophytes in freshwater, Hydrobiologia (2008) 595:9–26, DOI 10.1007/s10750-007-9154-6

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**80**	**0**
Participation in test / exam	**4**	**0**
Preparation for contact hours	**20**	**0**
Private reading and studying	**26**	**0**
Participation in tutorials	**25**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**20**	**0**
TOTAL workload	**175**	
ECTS credits	**7**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Hydrology (hydrologia) (KIERUNKOWE)**		Course code: **SPR201AIJ3446_27S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 5 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	5	discussion classes	15	0	pg	2
		lecture	15	0	pg	
Total			**30**			**2**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**Familiarize students with the phenomena and processes concerning inland water hydrology, both surface water and underground one. Educate students in the ability to analyze, including graphical and statistical ones, phenomena and processes occurring in the terrestrial part of the hydrosphere. Educating students of readiness to care for water resources.**
Prerequisites	**Basic knowledge of physical geography at the high school level.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**One knows and understands to an advanced degree the concepts and phenomena concerning the hydrology of inland waters, both surface and underground ones.**	**K_W01**
	2	**EP2**	**Knows and understands the physical tool necessary to understand the functioning of the hydrosphere.**	**K_W07**
skills	**1**	**EP3**	**One can use hydrological data, synthesize and analyze them and use it to solve specific problems.**	**K_U02**
	2	**EP4**	**Can communicate with the other people using specialized terminology in the field of hydrology.**	**K_U05**
	3	**EP5**	**Is able to use the knowledge in the field of hydrology to carry out written studies and analyzes.**	**K_U01**
social competences	**1**	**EP6**	**One is ready to critically evaluate his/her knowledge of hydrology and recognize the importance of that knowledge in solving hydrobiological problems.**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Hydrology (hydrologia)**			
Format of instruction: **lecture**			
1. **The cycle of water circulation in nature, water balance and river basin characteristics.**	5	3	0
2. **Characteristics of watercourses, river network and river runoff.**	5	3	0
3. **Lakes, their types, morphology and morphometry; lake content.**	5	4	0

4. **Characteristics of marshy areas.**	5	2	0
5. **Groundwater, their origin and classification**	5	2	0
6. **Glaciers, their genesis, types and supply; glacier movement.**	5	1	0
Format of instruction: **discussion classes**			
1. **Determination of the surface watershed of the catchment area for the selected river.**	5	3	0
2. **River kilometers; calculating the expansion, torsion and slope of the river.**	5	2	0
3. **Analysis of the seasonal variability of river outflows.**	5	2	0
4. **Characteristics of marshy areas.**	5	2	0
5. **Preparation of a graph of fluctuations in the groundwater table during the year**	5	2	0
6. **Preparation of a bathymetric plan and a section through the lake basin.**	5	2	0
7. **Determination of morphometric parameters of the lake.**	5	2	0

Modes of delivery	**The lecture with multimedia materials, performance of written analyzes (including graphic and computational analyzes), 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
	KOLOKWIUM	**EP1,EP2,EP6**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP2,EP3,EP5**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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 passing the course is positive completion of all written studies and positive passing of the final test.**
	Grade calculation principles
	The final grade for the course is the average of grades from lectures and practical classes in a 1: 1 ratio.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Hydrology (hydrologia)		Arytmetyczna	
	5	Hydrology (hydrologia) [ćwiczenia]	zaliczenie z oceną		
	5	Hydrology (hydrologia) [wykład]	zaliczenie z oceną		

Basic reading	T. Davie, N.W. Quinn (2019): Fundamentals of hydrology, 3nd ed., Routlefge, London and New York, książka dostępna on-line
Supplementary reading	A Yousuf, M Singh (2020): Watershed hydrology, management and modeling, CRC Press, Boca Ruton, London, New York; książka dostępna on-line
	W. Brutsaert (2023): Hydrology , Cambridge University Press, Cambridge

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**1**	**0**
Preparation for contact hours	**2**	**0**

Private reading and studying	**3**	**0**
Participation in tutorials	**9**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**5**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Blok I**	
Course title: **Hydrometeorology (hydrometeorologia) (KIERUNKOWE)**	Course code: **SPR201AIJ3446_17S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	discussion classes	30	0	pg	3
		lecture	15	0	pg	
Total			**45**			**3**

Course / module coordinator	**dr hab. ROMAN MARKS**
Course instructor	**dr hab. ROMAN MARKS**
Course / module objectives	**Acquiring knowledge in the field of hydrometeorology and developing the ability to observe atmospheric phenomena related to water, the ability to describe these phenomena and the use of basic measurement techniques and developing readiness to apply the acquired skills in practice.**
Prerequisites	**Basic knowledge of physics and chemist**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP3**	**Students will know and understand the basic concepts and terminology used in meteorology. Knows the states of the atmosphere and how they vary in space and time.**	**K_W01**
	2	**EP4**	**Students know and understand the theoretical basis of the methodology of measurements of the basic meteorological elements.**	**K_W02**
skills	**1**	**EP5**	**Students will correctly select and use equipment used for meteorological measurements.**	**K_U03**
	2	**EP6**	**Be able to perform basic hydrometric measurements, interpret the results obtained**	**K_U04**
	3	**EP7**	**Student is able to use professional terminology to describe the processes taking place in the atmosphere and hydrosphere**	**K_U05**
social competences	**1**	**EP8**	**The student is willing to initiate community action to protect the hydrosphere and atmosphere.**	**K_K04**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Hydrometeorology (hydrometeorologia)**			
Format of instruction: **lecture**			
1. **Energy transfer across the air-water interface**	3	2	0
2. **Convective forcing in troposphere**	3	2	0

3. **Wind fields and surface waves**	3	2	0
4. **Water vapor mediated rotational features in troposphere**	3	2	0
5. **Water vapor latent and specific heats**	3	2	0
6. **Heat capacity of water and air**	3	2	0
7. **Electric field in troposphere**	3	3	0
Format of instruction: **discussion classes**			
1. **Meteorological instruments**	3	3	0
2. **Data acquisition at Coastal station in Miedzyzdroje and in urban station in Szczecin**	3	3	0
3. **Rain gauges**	3	3	0
4. **Observations of splash droplets**	3	3	0
5. **Observations of oxygen evasion from water**	3	3	0
6. **Observations of Ekman spiral in air currents**	3	3	0
7. **Gradient measurements in wind vertical profiles**	3	3	0
8. **Observations of wind gustiness**	3	3	0
9. **Measurements of thermal gradients in the coastal zone**	3	3	0
10. **Measurements of humidity gradients in the coastal zone**	3	3	0

Modes of delivery	**Experimental observations conducted in laboratory and in marine coastal zone**
	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	**EP3,EP4**
	SPRAWDZIAN	**EP3,EP4,EP5**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP3,EP4,EP5,EP6,EP7,EP8**
	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	**Lectures: getting a positive mark for 3 random questions covering the topics of lectures** **Exercises: getting positive grades from tests, partial assignments and colloquium**
	Grade calculation principles
	The final grade for the course is the arithmetic mean of the grades from the lectures and exercises.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Hydrometeorology (hydrometeorologia)		Arytmetyczna	
	3	Hydrometeorology (hydrometeorologia) [wykład]	zaliczenie z oceną		
	3	Hydrometeorology (hydrometeorologia) [ćwiczenia]	zaliczenie z oceną		

Basic reading	Seo E., Dirmeyer P.A., arlage M., Wie H., Ek,M. (2024): Evaluation of Land–Atmosphere Coupling Processes and Climatological Bias in the UFS Global Coupled Model.
	Walraven B., Overeem A., Coenders-Gerrits M., Hut R., van der Valk l., Uijlenhoet R. (2024): Relating Rainfall Retrieval Parameters to Network and Environmental Features to Improve Rainfall Estimates from Commercial Microwave Links in the Tropics.
	Webb P., (2023): Introduction to oceanography

Supplementary reading	Ahrens D.C. (2011): Essentials of Meteorology: An Invitation to the Atmosphere, 528
	Marks R. (2019): Water Vapor Induced Airborne Rotational Features, Meteorology Hydrology and Water Management, 7, 2, 29-47, DOI: https://doi.org/10.26491/mhwm/104634
	Marks R. (2006): Dissolved oxygen supersaturation and its impact on bubble formation in the southern Baltic Sea coastal waters, Hydrology Research. Vol. 39, No 3, 229-236

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**45**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**8**	**0**
Private reading and studying	**8**	**0**
Participation in tutorials	**2**	**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-H-O-I-S-25/26Z**						
Course title: **Hydrozoology of invertebrates I (hydrozoologia bezkręgowców I) (PODSTAWOWE)**					Course code: **SPR201AIJ3450_2S**	
Name of field of study: **Hydrobiology**						
Mode and cycle of study: **first-degree, full - time**		Profile of study: **general academic**			Specialty:	
Course / module status **obligatory**			Language of instruction: **semester: 1 - english language**			

Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
1	1	laboratory	30	0	pg	6
		lecture	30	0	e	
Total			**60**			**6**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**The aim of the course is to familiarize students with the systematics, taxonomy and biology of water inertebrates. After completing the course the student is able to identify the most important taxonomic groups of water invertebrates and is ready to independently complement the knowledge and skills acquired during the classes.**
Prerequisites	**Basic knowledge of biology**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows and understands at an advanced level the concepts and natural phenomena, the biology of aquatic organisms and the relationships between the elements of the aquatic environment.**	**K_W01**
	2	**EP2**	**The student knows and understands the basic research methods used in water organisms identyfication**	**K_W02**
	3	**EP3**	**The student knows and understands at an advanced level the relationships of hydrobiology with other natural disciplines, botany, hydrology, ecology enabling the understanding of the principles of the functioning of organisms and the interpretation and generalization of knowledge.**	**K_W03**
skills	**1**	**EP4**	**Student Is able to properly select, analyze and use the keys for the determination of aquatic organisms, lexicons, a textbook and on their basis to identify and solve the problem**	**K_U02**
	2	**EP5**	**The student is able to use the microscope and other research tools, literature and software in order to present the results of research and observations.**	**K_U03**
	3	**EP6**	**The student is able to carry out observations and measurements using microscope and other laboratory tools and methods, as well as interpret the obtained results and draw conclusions based on his knowledge**	**K_U04**

social competences	**1**	**EP7**	**The student critically evaluates his knowledge and recognizes the importance of general and specialist knowledge in the field of hydrobiology, and recognizes the knowledge of specialists.**	**K_K02**
	2	**EP8**	**The student is ready to educate the local and regional community in the field of hydrobiology.**	**K_K03**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Hydrozoology of invertebrates I (hydrozoologia bezkręgowców I)**			
Format of instruction: **lecture**			
1. **Introduction - phylogenesis, taxonomic features, systematics, biology**	1	2	0
2. **Protozoa 1: Sarcodina, Flagellates (Flagellata)**	1	2	0
3. **Protozoa 2: Ciliates (Ciliata)**	1	2	0
4. **Sponges (Porifera)**	1	2	0
5. **Coelenterata**	1	2	0
6. **Nematodes and gastrotrichs (Nematoda, Gastrotricha)**	1	2	0
7. **Armored rotifers (Rotifera: Armored Monongononta)**	1	2	0
8. **Unrmored rotifers, flatworms (Rotifera: Unarmored Monogononta, Digononta, Platyhelminthes)**	1	2	0
9. **Polychaetes and oligochaetes (Polychaeta, Oligochaeta)**	1	2	0
10. **Leeches (Hirudina)**	1	2	0
11. **Copepods (Copepoda)**	1	2	0
12. **Cladocerans 1 (Cladocera 1) - (Ctenopoda, Anomopoda, Radopoda)**	1	2	0
13. **Cladocerans 2 (Cladocera 2) - (Haplopoda, Onochypoda)**	1	2	0
14. **Triops and ostracods (Triops, Ostracoda, Branchiura)**	1	2	0
15. **Arachnids and tardigrades (Arachnida, Tardigrada)**	1	2	0
Format of instruction: **laboratory**			
1. **Introduction - microscope operation, laboratory work, laboratory equipment, notebook**	1	2	0
2. **Protozoa 1: Sarcodina, Flagellates (Flagellata)**	1	2	0
3. **Protozoa 2: Ciliates (Ciliata)**	1	2	0
4. **Sponges (Porifera)**	1	2	0
5. **Coelenterata**	1	2	0
6. **Nematodes and gastrotrichs (Nematoda, Gastrotricha)**	1	2	0
7. **Armored rotifers (Rotifera: Armored Monongononta)**	1	2	0
8. **Unrmored rotifers, flatworms (Rotifera: Unarmored Monogononta, Digononta, Platyhelminthes)**	1	2	0
9. **Polychaetes and oligochaetes (Polychaeta, Oligochaeta)**	1	2	0
10. **Leeches (Hirudina)**	1	2	0
11. **Copepods (Copepoda)**	1	2	0
12. **Cladocerans 1 (Cladocera 1) - (Ctenopoda, Anomopoda, Radopoda)**	1	2	0
13. **Cladocerans 2 (Cladocera 2) - (Haplopoda, Onochypoda)**	1	2	0
14. **Triops and ostracods (Triops, Ostracoda, Branchiura)**	1	2	0
15. **Arachnids and tardigrades (Arachnida, Tardigrada)**	1	2	0

Modes of delivery	**macroscopic and microscopic observation, drawings, multimedia presentation**	
	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 USTNY	**EP1,EP3,EP4,EP5,EP8**
	KOLOKWIUM	**EP2,EP7,EP8**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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 credit for the exercises is a positive grade, which is the average grade obtained from the test verifying the mastery of the knowledge provided to the student in the course of the exercises. The condition for obtaining a credit for the lecture is a positive grade from the oral exam verifying the mastery of the knowledge passed to the student during the lectures**	
	Grade calculation principles	
	Average of the final grade for exercises and lectures (exam).	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	Hydrozoology of invertebrates I (hydrozoologia bezkręgowców I)		Arytmetyczna	
	1	Hydrozoology of invertebrates I (hydrozoologia bezkręgowców I) [laboratorium]	zaliczenie z oceną		
	1	Hydrozoology of invertebrates I (hydrozoologia bezkręgowców I) [wykład]	egzamin		

Basic reading	Edward E. Ruppert, Richard S. Fox, Robert D. Barnes (2003): Invertebrate Zoology: A Functional Evolutionary Approach 7th Edition., Cengage Learning, Inc.
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**38**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**15**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**25**	**0**
TOTAL workload	**150**	
ECTS credits	**6**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Hydrozoology of invertebrates II (hydrozoologia bezkręgowców II) (PODSTAWOWE)**	Course code: **SPR201AIJ3446_9S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	2	laboratory	30	0	pg	7
		lecture	30	0	e	
		zajęcia terenowe	20	0	pg	
Total			**80**			**7**

Course / module coordinator	**dr TOMASZ KREPSKI**
Course instructor	**dr TOMASZ KREPSKI**
Course / module objectives	**The aim of the course is to familiarize students with the systematics, taxonomy and biology of aquatic invertebrates. After completing the course, the student can recognize the most important taxonomic groups of aquatic invertebrates and is ready to put the acquired knowledge into practice.**
Prerequisites	**Basic knowledge of biology**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Knows and understands at an advanced level selected elements of the morphology and anatomy of invertebrates, complex dependencies between them and theories explaining their relationship, which constitute the basic general knowledge in the field of invertebrate zoology**	**K_W01**
	2	**EP2**	**Knows and understands the basic research methods and tools used in modern science in the field of invertebrate zoology**	**K_W02**
	3	**EP3**	**Knows and understands at an advanced level the relationships of invertebrate zoology with other scientific disciplines, enabling the understanding of the principles of functioning and organization of organisms along with the interpretation of knowledge**	**K_W03**
skills	**1**	**EP4**	**Can find and use sources of various scientific information, conduct a critical analysis of them in order to formulate and solve problems**	**K_U02**
	2	**EP5**	**Can properly select and use appropriate research methods and tools in order to perform observations, present the results of observations, compare with the existing knowledge, and present the obtained results in writing and oral form, using advanced information and communication techniques**	**K_U03**
	3	**EP6**	**Is able to perform preparations and measurements using appropriate tools and research methods, as well as compare the obtained results and draw conclusions based on the acquired knowledge**	**K_U04**

social competences	**1**	**EP7**	**Is ready to critically evaluate his knowledge and conclusions, and to recognize the importance of existing knowledge in the field of invertebrate zoology in solving cognitive and practical problems, and to use expert knowledge in the event of difficulties in solving problems on his own**	**K_K02**
	2	**EP8**	**Is ready to fulfill social obligations, including sharing knowledge in the field of invertebrate zoology to educate the society**	**K_K03**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Hydrozoology of invertebrates II (hydrozoologia bezkręgowców II)**			
Format of instruction: **lecture**			
1. **Crustacea (Phyllocarida, Hoplocarida)**	2	2	0
2. **Crustacea (Syncarida, Pancarida)**	2	2	0
3. **Crustacea (Peracarida)**	2	2	0
4. **Crustacea (Eucarida)**	2	2	0
5. **Collembola, wprowadzenie do Insecta**	2	2	0
6. **Neuroptera, Odonata, Ephemeroptera, Plecoptera**	2	2	0
7. **Coleoptera, Heteroptera**	2	2	0
8. **Trichoptera, Lepidoptera**	2	2	0
9. **Diptera**	2	2	0
10. **Mollusca, Polyplacophora, Monoplacophora, Aplacophora, Bivalvia**	2	2	0
11. **Gastropoda**	2	2	0
12. **Cephalopoda**	2	2	0
13. **Bryozoa, Brachiopoda**	2	2	0
14. **Echinodermata**	2	2	0
15. **Chordata: Tunicata**	2	2	0
Format of instruction: **laboratory**			
1. **Crustacea (Phyllocarida, Hoplocarida)**	2	2	0
2. **Crustacea (Syncarida, Pancarida)**	2	2	0
3. **Crustacea (Peracarida)**	2	2	0
4. **Crustacea (Eucarida)**	2	2	0
5. **Collembola, wprowadzenie do Insecta**	2	2	0
6. **Neuroptera, Odonata, Ephemeroptera, Plecoptera**	2	2	0
7. **Coleoptera, Heteroptera**	2	2	0
8. **Trichoptera, Lepidoptera**	2	2	0
9. **Diptera**	2	2	0
10. **Polyplacophora, Bivalvia**	2	2	0
11. **Gastropoda**	2	2	0
12. **Cephalopoda**	2	2	0
13. **Bryozoa, Brachiopoda**	2	2	0

14. **Echinodermata**	2	2	0
15. **Chordata: Tunicata**	2	2	0
Format of instruction: **zajęcia terenowe**			
1. **Field observations of selected groups of invertebrates, identification of diagnostic features**	2	16	0
2. **Working with devices and equipment for conducting field research. Learning field work techniques**	2	2	0
3. **Search for selected invertebrates in habitats**	2	2	0

Modes of delivery	**multimedia presentation** 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**
	KOLOKWIUM	**EP2,EP4,EP5,EP7**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP5,EP6,EP7,EP8**
	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 a positive grade, which is the average grade obtained in the lab (colloquium), field practices and the test verifying the mastery of the knowledge passed to the student in the course of the lectures and passing the drawings.** Grade calculation principles **The rules for calculating the grade for the course: average grade of the course credit for labs, field practices and lectures (exam)**

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Hydrozoology of invertebrates II (hydrozoologia bezkręgowców II)		Nieobliczana	
	2	Hydrozoology of invertebrates II (hydrozoologia bezkręgowców II) [zajęcia terenowe]	zaliczenie z oceną		
	2	Hydrozoology of invertebrates II (hydrozoologia bezkręgowców II) [wykład]	egzamin		
	2	Hydrozoology of invertebrates II (hydrozoologia bezkręgowców II) [laboratorium]	zaliczenie z oceną		

Basic reading	Richard C. Brusca, Gary J. Brusca (2003): Invertebrates. 2nd Edition. , Sinauer Associates, Inc., Publishers
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**80**	**0**
Participation in test / exam	**3**	**0**
Preparation for contact hours	**40**	**0**
Private reading and studying	**25**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**25**	**0**

TOTAL workload	**175**
ECTS credits	**7**

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Hydrozoology of vertebrates (hydrozoologia kręgowców) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_3S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status: **obligatory**	Language of instruction: **semester: 1 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	laboratory	30	0	pg	8
		lecture	30	0	e	
		zajęcia terenowe	20	0	pg	
Total			**80**			**8**

Course / module coordinator	**dr hab. ŁUKASZ JANKOWIAK**
Course instructor	**dr hab. ŁUKASZ JANKOWIAK**
Course / module objectives	**Knowledge of the basic systematics traits of the main taxon units of vertebrate animals living in the aquatic environments. Presentation of the systematic of the vertebrates including characteristic of specimens of the main orders. The aim is also to acquire the skill of recognition of selected species.**
Prerequisites	**Knowledge of the biology at the secondary school grade**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Student understands and uses nomenclature and terminology in the field of systematic zoology. He knows the basics of biology of selected animal groups.**	**K_W04**
	2	**EP2**	**Student describes the characteristics of the discussed taxonomic groups, taking into account diagnostic traits, morphology and he knows the representatives of these groups**	**K_W01**
skills	**1**	**EP3**	**Student recognizes and classifies the morphological features of selected taxa and assigns them to the appropriate systematic group. He evaluates the features of several species presented to him and distinguishes them from one another, giving their characteristic features.**	**K_U01**
	2	**EP4**	**Student is able to use selected tools and devices for field research on the vertebrates.**	**K_U04**
social competences	**1**	**EP5**	**Student is ready to act effectively individually and in the group**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Hydrozoology of vertebrates (hydrozoologia kręgowców)**			
Format of instruction: **lecture**			
1. **The vertebrate story: an overview**	1	6	0
2. **Systematics and Vertebrate Evolution**	1	6	0

3. **Vertebrate Zoogeography**	1	3	0
4. **Population dynamics**	1	3	0
5. **Movements**	1	4	0
6. **Intra- and Interspecific interactions**	1	4	0
7. **Conservation and management**	1	4	0
Format of instruction: **laboratory**			
1. **Early chordates and jawless fishes**	1	6	0
2. **Gnathostome Fishes (Chondrichthyes and Osteichthyes)**	1	6	0
3. **Amphibians**	1	5	0
4. **Reptiles**	1	5	0
5. **Mammals**	1	8	0
Format of instruction: **zajęcia terenowe**			
1. **Field observations of selected groups of vertebrates, identification of diagnostic features**	1	7	0
2. **Field work with scientific tools. Learning of wield work techniques**	1	6	0
3. **Knowledge how to find selected vertebrates in their habitats. Recognizing traces and tracks of animals**	1	7	0

Modes of delivery	**slides, discussions with students, practical exercises in the laboratory, microscopic observations, making drawings**
	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**
	KOLOKWIUM	**EP1,EP2**
	SPRAWDZIAN	**EP1,EP2**
	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.	

Grading criteria	**Exam** **Test on the content of lectures and classes** **Passing laboratory exercises and field classes based on activity,**
	Grade calculation principles
	Final credit based on the classes credit and exam credit in the ratio 1:2

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	Hydrozoology of vertebrates (hydrozoologia kręgowców)		Ważona	
	1	Hydrozoology of vertebrates (hydrozoologia kręgowców) [wykład]	egzamin		0,50
	1	Hydrozoology of vertebrates (hydrozoologia kręgowców) [laboratorium]	zaliczenie z oceną		0,25
	1	Hydrozoology of vertebrates (hydrozoologia kręgowców) [zajęcia terenowe]	zaliczenie z oceną		0,25

Basic reading	Donald W. Linzey (2020): Vertebrate biology : systematics, taxonomy, natural history, and conservation Third edition,, Johns Hopkins University Press, Press, Baltimore, Maryland
	Lars Svensson; Killian Mullarney; Dan Zetterstrom, P J Grant (2023): Collins bird guide, Collins, London
	Peter Castro and Michael Huber (2023): Marine Biology Twelfth Edition, McGraw-Hill Education

Supplementary reading	Berger L. (2000): Płazy i gady Polski, PWN, Warszawa, Poznań
	Pucek Z. (1984): Klucz do oznaczania ssaków Polski, PWN, Warszawa

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**80**	**0**
Participation in test / exam	**4**	**0**
Preparation for contact hours	**52**	**0**
Private reading and studying	**50**	**0**
Participation in tutorials	**14**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**200**	
ECTS credits	**8**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Ichthyology (ichtiologia) (KIERUNKOWE)**		Course code: **SPR201AIJ3450_1S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 3 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	discussion classes	20	0	pg	3
		lecture	20	0	pg	
Total			**40**			**3**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**The aim of the course is to familiarize students with the systematics, taxonomy and biology of fish. After completing the course the student is able to identify the most important species and taxonomic groups of fish.**
Prerequisites	**Basic knowledge of biology**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows and understands at an advanced level selected facts, concepts and theories, which are the basic general knowledge in the field of natural sciences, forming the theoretical foundations of ichthyology**	**K_W01**
	2	**EP2**	**The student knows and understands the basic research and laboratory methods and techniques used in contemporary ichthyology**	**K_W02**
	3	**EP3**	**The student knows and understands at an advanced level the relationships of ichthyology with other natural disciplines, enabling the understanding of the principles of the functioning of organisms and the interpretation and generalization of knowledge**	**K_W03**
skills	**1**	**EP4**	**The student is able to properly select and use sources of scientific information, critically analyze and evaluate them, and perform data synthesis to formulate and solve problems**	**K_U02**
	2	**EP5**	**The student is able to properly select and use appropriate research methods and tools, and present the results of observations and conclusions, including the analysis of professional literature, in written and oral form, using advanced information and communication techniques**	**K_U03**
	3	**EP6**	**The student is able to carry out observations and measurements using appropriate research and laboratory tools and methods, as well as interpret the obtained results and draw conclusions based on his knowledge**	**K_U04**

social competences	**1**	**EP7**	**The student is ready to critically assess his knowledge and received content and to recognize the importance of general and specialist knowledge in the field of ichthyology in solving cognitive and practical problems, and to consult with experts the difficulties with solving problems on his own.**	**K_K02**
	2	**EP8**	**The student is ready to fulfill social obligations, including sharing knowledge in the field of ichthyology with others and co-organizing activities for the social environment.**	**K_K03**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Ichthyology (ichtiologia)**			
Format of instruction: **lecture**			
1. **Fish systematics**	3	5	0
2. **Adaptation of fish to life in a diversified aquatic environment**	3	3	0
3. **Migratory and sedentory fish**	3	3	0
4. **Fish reproduction**	3	3	0
5. **Development and growth in early ontogenesis.**	3	3	0
6. **Species protection of fish**	3	3	0
Format of instruction: **discussion classes**			
1. **Identifying fish species**	3	2	0
2. **Morphological and anatomical structure of fish, cartilaginous fish**	3	3	0
3. **Morphological and anatomical structure of fish, bone skeleton fish**	3	3	0
4. **Methods for determining the age of fish**	3	3	0
5. **The structure and growth of gonads and the cycle of annual development of the gonads.**	3	3	0
6. **Methods of determining the stages of gonad development**	3	3	0
7. **Development of fish in artificial conditions**	3	3	0

Modes of delivery	**macroscopic and microscopic observation, drawings, multimedia presentation**	
	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,EP7**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP5,EP6,EP7,EP8**
	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 credit for the exercises is a positive grade, which is the average grade obtained from the test verifying the mastery of the knowledge provided to the student in the course of the exercises. The condition for obtaining a credit for the lecture is a positive grade from the test verifying the mastery of the knowledge passed to the student during the lectures.**	
	Grade calculation principles	
	Average of the final grade for exercises and lectures.	

	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
Final grade calculation method	3	Ichthyology (ichtiologia)		Arytmetyczna	
	3	Ichthyology (ichtiologia) [ćwiczenia]	zaliczenie z oceną		
	3	Ichthyology (ichtiologia) [wykład]	zaliczenie z oceną		
Basic reading	Helfman, G., Collette, B. B., Facey, D. E., Bowen, B. W. (2009): The diversity of fishes: biology, evolution, and ecology. , John Wiley & Sons.				
Supplementary reading					

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**40**	**0**
Participation in test / exam	**5**	**0**
Preparation for contact hours	**5**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**5**	**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-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Informatization of Civil Procedure (informatyzacja postępowania cywilnego) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3435_6S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**dr MICHAŁ WOJDAŁA**
Course instructor	**dr MICHAŁ WOJDAŁA**
Course / module objectives	**The goal of the course is to introduce to the students basic computer instruments and tools used in the system of judicial authorities with the special consideration of the judicial proceedings.**
Prerequisites	**The student should know the basics of civil material law (with the special consideration of the issues regarding the Land and Mortgage Register) and should have the basic knowledge regarding concepts of the jurisprudence.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**The student knows and distinguishes computer tools that are being used in the judicial and extrajudicial proceedings**	
	2	EP2	**The students knows the types of judicial and extrajudicial proceedings in the computer tools are used**	
	3	EP3	**The student typifies tasks of the judicial authorities in the field of creating and using computer tools in the jurisdiction**	
skills	1	EP4	**The student solves problems described in simple cases**	
	2	EP5	**The student is able to properly use the available computers tools used in the judicial and extrajudicial proceedings**	
	3	EP6	**The student is able to prepare applications and pleadings in the proceedings that use computers tools**	
social competences	1	EP7	**The student is ready to undertake individual and team activities related to the administration of justice**	
	2	EP8	**The student is ready to identify with the tasks carried out in the practice of law with the use of tools to inform the administration of justice**	

CONTENT	Semester	No. of hours	including e-learning

Subject title: **Informatization of Civil Procedure (informatyzacja postępowania cywilnego)**

Format of instruction: **lecture**			
1. **null**	5	3	0
2. **null**	5	3	0
3. **null**	5	3	0
4. **null**	5	3	0
5. **null**	5	3	0
6. **null**	5	3	0
7. **null**	5	3	0
8. **null**	5	3	0
9. **null**	5	3	0
10. **null**	5	2	0
11. **null**	5	1	0

Modes of delivery	**Lecture**	
	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,EP6,EP7,EP8**
	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	**Credit on the grade in the form of test (100% of the final grade): 10 pts - grade: 5,0;** **9 pts - grade: 4,5;** **8 pts - grade: 4,0;** **7 pts - grade: 3,5;** **5 - 6 pkt - ocena 3,0;** **below 5 pts - grade: 2,0**	
	Grade calculation principles	
	The final grade for the course is the lecture grade.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Informatization of Civil Procedure (informatyzacja postępowania cywilnego)		Ważona	
	5	Informatization of Civil Procedure (informatyzacja postępowania cywilnego) [wykład]	zaliczenie z oceną		1,00

Basic reading	Flaga-Gieruszyńska K. (red.), Gołaczyński J. (red.), Szostek D. (red.) (2016): Informatyzacja postępowania cywilnego. Teoria i praktyka, , C.H. Beck
	Flaga-Gieruszyńska K., Zieliński A. (2020): Postępowanie cywilne. Kompendium, C.H. Beck
Supplementary reading	Klich A. (2014): Computerization of evidence proceedings as a manifestation of state action to modernize the administration of justice in civil cases.
	Klich A., Flaga-Gieruszyńska K., Wacinkiewicz, D., Cała-Wacinkiewicz E. (red.) (2014): Organy państwa wobec wyzwań współczesności na przykładzie informatyzacji postępowania cywilnego [w:] Obywatel - państwo - społeczność międzynarodowa. Zbiór studiów

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**

Participation in test / exam	**2**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**18**	**0**
Participation in tutorials	**5**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**20**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Intellectual property protection (ochrona własności intelektualnej) (OGÓLNOUCZELNIANE)**		Course code: **SPR201AIJ3435_36S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 1 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	lecture	8	0	pg	1
Total			**8**			**1**

Course / module coordinator	**dr PRZEMYSŁAW KATNER**
Course instructor	**dr PRZEMYSŁAW KATNER**
Course / module objectives	**The Student has knowledge and skill to analyse the basic issues of the copyright and industrial property laws. The student is ready to observe the intellectual property law and the rules of professional ethics**
Prerequisites	**Student has a basic knowledge of civil law**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The Student knows and understands basic concepts and principles of the protection of industrial property and of copyright and the need for intellectual property management.**	**K_W10**
skills	**1**	**EP2**	**The Student uses acquired knowledge in his activity**	**K_U01**
	2	**EP5**	**Students can independently plan and systematically supplement their knowledge, especially in the field of updating the legal status.**	**K_U08**
social competences	**1**	**EP4**	**The Student is convinced of importance of behaving in professional manner and obeying rules of professional ethics.**	**K_K05 K_K06**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Intellectual property protection (ochrona własności intelektualnej)**			
Format of instruction: **lecture**			
1. **Introduction to intellectual property law.**	1	1	0
2. **The subject of copyright.**	1	1	0
3. **The content of copyright.**	1	1	0
4. **The transfer of author's economic rights.**	1	1	0
5. **The protection of author's moral and economic rights. Criminal liability.**	1	1	0
6. **Inventions, utility models and industrial models.**	1	1	0

7. **Trademarks and geographical indications.**	1	1	0
8. **Pursuing claims on account of violating exclusive rights.**	1	1	0

Modes of delivery	**Problem lecture.**
	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,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	**Test with assessment. The assessment includes knowledge from lecture and legal acts and recommended literature. Single-choice test with 15 questions. Final evaluation depends on the amount of points earned from the test:** **50% - 65% - 3.0 satisfactory (dst) the work meets the minimum criteria** **66% - 75% - 3.5 satisfactory plus (dst +) satisfactory, but with significant shortcomings** **76% -85% - 4.0 good (db) generally solid work with noticeable errors** **86% 90% - 4.5 good plus (db +) above average standard - with some errors** **91%-100% - 5.0 very good (very good) results with only minor errors.**
	Grade calculation principles
	Final grade for the course is the grade for passing the lectures.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	Intellectual property protection (ochrona własności intelektualnej)		Ważona	
	1	Intellectual property protection (ochrona własności intelektualnej) [wykład]	zaliczenie z oceną		1,00

Basic reading	Barta J., Markiewicz R. (2019): Prawo autorskie i prawa pokrewne. , Wolters Kluwer business
	Katner W.J. (red) (2019): Prawo cywilne i handlowe w zarysie., Wolters Kluwer business
	Act of 30 June 2000 on law of industrial property
	Act of 4 February 1994 on copyright and related rights.
Supplementary reading	Golat R. (2018): Prawo autorskie i prawa pokrewne., C.H. Beck
	Katner W.J. (red) (2020): Prawo gospodarcze i handlowe., Wolters Kluwer business
	Nowińska E., Promińska U., du Vall M. (2011): Prawo własności przemysłowej. , LexisNexis

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**8**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**8**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**5**	**0**

TOTAL workload	**25**
ECTS credits	**1**

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Introduction to Psychology (wprowadzenie do psychologii) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3436_15S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	6	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr ELŻBIETA PIEŃKOWSKA**
Course instructor	**dr ELŻBIETA PIEŃKOWSKA**
Course / module objectives	**The course will examine the different models upon which modern psychology has been built, along with such things as the history and origins of psychology, research methods, biological aspects of psychology, human development, perception, consciousness, learning, personality**
Prerequisites	**none**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**demonstrate understanding of the terminology used in psychology**	
	2	**EP2**	**identify research models and relate the findings of research to life situations**	
skills	**1**	**EP3**	**demonstrate understanding of the different theoretical approaches to psychology and be able to articulate the different assumptions behind them**	
	2	**EP4**	**apply psychology practically to problems confronting them in society**	
social competences	**1**	**EP5**	**being self-aware, reflective and flexible and have the capacity to accept and give constructive feedback**	
	2	**EP6**	**demonstrate understanding of the workings of their own consciousness, behavior, and interpersonal relationships**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Introduction to Psychology (wprowadzenie do psychologii)**			
Format of instruction: **lecture**			
1. **null**	6	2	0
2. **null**	6	2	0
3. **null**	6	2	0
4. **null**	6	2	0

5. **null**	6	2	0
6. **null**	6	2	0
7. **null**	6	3	0

Modes of delivery	**Lectures with a PowerPoint presentation and a case study 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,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	**Written form**
	Grade calculation principles
	The final grade for the course is the lecture grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Introduction to Psychology (wprowadzenie do psychologii)		Ważona	
	6	Introduction to Psychology (wprowadzenie do psychologii) [wykład]	zaliczenie z oceną		1,00

Basic reading	Reber, R. (2020): Psychology. The Basics. , Routledge, London
Supplementary reading	Eysenck, M.W. (2022): Simply Psychology. , Routledge, London

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**12**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**15**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Language acquisition and foreign language learning strategies (przyswajanie języka i strategie uczenia się języków obcych) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3442_4S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**dr MONIKA SKORASIŃSKA**
Course instructor	**dr MONIKA SKORASIŃSKA**
Course / module objectives	**familiarizing students with the theory of language acquisition and foreign language learning strategies**
Prerequisites	**the knowledge of English language on B2 level**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**knows specialist terminology related to language acquisition and has structured and in-depth knowledge of language acquisition and learning strategies**	
	2	**EP2**	**understands the connections between language acquisition and other branches of science, with particular emphasis on psychology and pedagogy**	
skills	**1**	**EP3**	**is able to apply knowledge of language acquisition and foreign language learning strategies in order to complete a project using a variety of modern methods and techniques**	
	2	**EP4**	**is able to use professional terminology appropriate for language acquisition**	
social competences	**1**	**EP5**	**is ready to further, continuous development of one's own competences**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Language acquisition and foreign language learning strategies (przyswajanie języka i strategie uczenia się języków obcych)**			
Format of instruction: **lecture**			
1. **null**	5	2	0
2. **null**	5	4	0
3. **null**	5	4	0
4. **null**	5	4	0

5. **null**	5	4	0
6. **null**	5	4	0
7. **null**	5	4	0
8. **null**	5	4	0

Modes of delivery	**interactive presentation, lecture**
	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
	PROJEKT	**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	**a positive grade for the project**
	Grade calculation principles
	The final grade for the course is the lecture grade

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Language acquisition and foreign language learning strategies (przyswajanie języka i strategie uczenia się języków obcych)		Ważona	
	5	Language acquisition and foreign language learning strategies (przyswajanie języka i strategie uczenia się języków obcych) [wykład]	zaliczenie z oceną		1,00

Basic reading	O'Malley J. M. (1995): Learning Strategies in Second Language Acquisition, Cambridge University Press, Cambridge
	Prabhu, N. S. (1987): Second language pedagogy, Oxford University Press, Oxford
Supplementary reading	Chamot, A. (2001): The role of learning strategies in second language acquisition. In M. Breen (Ed.), Learner contributions to language learning (pp. 25-43). , Longman, Harlow
	Komorowska H. (2001): Metodyka nauczania języków obcych, Fraszka Edukacyjna, Warszawa
	Noels, K., Pelletier, L, Clement, R., & Vallerand, R. (2000): Why are you learning a second language? Motivational orientations and self-determination theory. Language Learning, 50, 57-85.
	Willing, K. (1987): Learning styles and adult migrant education, National Curriculum Resource Centre., Adelaide
	Wlodkowski, R. (1986): Enhancing adult motivation to learn, CA: Jossey-Bass, San Francisco

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**16**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**23**	**0**
Preparation for test / exam	**0**	**0**

TOTAL workload	**75**
ECTS credits	**3**

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Library Training (szkolenie biblioteczne) (ANOTHER TO PASS)**	Course code: **SPR201AIJ3362_31S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 1 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	lecture	2	2	p	0
Total			**2**			**0**

Course / module coordinator	**mgr MARTA SZTARK-ŻUREK**
Course instructor	**mgr DOROTA GILL-TARNOWSKA**
Course / module objectives	**Familiarizing the student with the structure of a library, its resources and the traditional and electronic catalogue. Using computers, in particular using available databases. Acquiring skills obtaining information by searching data in the Electronic Main Catalog: quick search, advanced search.**
Prerequisites	**The student must complete the pre-registration form available on the website of the University's Main Library**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Knows basic terms related to the use of the Library (such as library system, catalog, reference number, interlibrary loans, extensions), with the library's nformation system and is able to use them**	
skills	**1**	**EP2**	**can search for the necessary publications in the library catalog using various search fields and using various search methods**	
	2	**EP3**	**can use information search tools in full-text and bibliographic databases**	
social competences	**1**	**EP4**	**demonstrates responsibility for borrowed collections**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Library Training (szkolenie biblioteczne)**			
Format of instruction: **lecture**			
1. **null**	1	1	1
2. **null**	1	1	1

Modes of delivery	**e-learning course**
	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**
	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 a final task (on-line test), setting up a library account, activating it and ordering and borrowing at least one publication**	
	Grade calculation principles	
	Passing the test	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	Library Training (szkolenie biblioteczne)		Nieobliczana	
	1	Library Training (szkolenie biblioteczne) [wykład]	zaliczenie		

Basic reading	Regulamin Biblioteki Głównej US
	Regulamin Organizacyjny Biblioteki Głównej US
	Regulaminy Bibliotek Wydziałowych
Supplementary reading	Red. Z. Żmigrodzki (1998): Bibliotekarstwo, Wyd. SBP, Warszawa

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**2**	**2**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**0**	**0**
Participation in tutorials	**0**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**2**	
ECTS credits	**0**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Marketing and Communication (marketing i komunikacja marketingowa) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3433_11S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	6	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr KAMILA SŁUPIŃSKA**
Course instructor	**dr KAMILA SŁUPIŃSKA**
Course / module objectives	**The aim of the course is to acquaint students with the theory and practice of marketing, presenting fundamental concepts, principles, and issues in marketing; demonstrating methods for solving marketing problems; and enabling students to acquire the skills to adapt marketing activities to the needs of a business in the market environment.**
Prerequisites	**none**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student understanding of key concepts in the field of marketing**	
	2	**EP2**	**The student understanding behaviors and communication activities of entities operating in the market**	
skills	**1**	**EP3**	**The student can identify and characterize various marketing instruments**	
	2	**EP4**	**The student identifies segments for selected markets, positions them, and adjusts marketing solutions accordingly**	
social competences	**1**	**EP5**	**The student is ready for ethical application of specific marketing actions to a given entity**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Marketing and Communication (marketing i komunikacja marketingowa)**			
Format of instruction: **lecture**			
1. **null**	6	2	0
2. **null**	6	1	0
3. **null**	6	1	0
4. **null**	6	2	0
5. **null**	6	1	0

6. **null**	6	1	0
7. **null**	6	1	0
8. **null**	6	1	0
9. **null**	6	4	0
10. **null**	6	1	0

Modes of delivery	**Lecture using multimedia techniques, case studies, thought experiments, and discussions**
	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**
	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 examination**
	Grade calculation principles
	The final grade for the course is the lecture grade.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Marketing and Communication (marketing i komunikacja marketingowa)		Ważona	
	6	Marketing and Communication (marketing i komunikacja marketingowa) [wykład]	zaliczenie z oceną		1,00

Basic reading	L. Garbarski (2022): Marketing. Kluczowe pojęcia i praktyczne zastosowania
	Red. G. Rosa (2011): Marketing. Materiały do ćwiczeń, Wydawnictwo C.H. Beck, Warszawa
Supplementary reading	Ph. Kotler (2021): Marketing 5.0. Technologie Next Tech
	Ph. Kotler, k. Keller (2012): Marketing, Rebis, Poznań
	Czasopisma Marketing i rynek
	Czasopismo Marketing w praktyce

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**10**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**15**	**0**

TOTAL workload	**50**
ECTS credits	**2**

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Methods of hydrobiology (metody badań hydrobiologicznych) (KIERUNKOWE)**	Course code: **SPR201AIJ3446_18S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 1 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	conversation	25	0	pg	2
Total			**25**			**2**

Course / module coordinator	**dr hab. ŁUKASZ SŁUGOCKI**
Course instructor	**dr hab. ŁUKASZ SŁUGOCKI**
Course / module objectives	**Mastery of knowledge and skills of sampling and preparing of experimants, segregation of material as well as analytical and comparative methods used in hydrobiological research**
Prerequisites	**Knowlegde of basic statistics and ecology**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Knows and understands the methods of collection (qualitative and quantitative), conservation and processing of hydrobiological material; and principles of planning and carrying out hydrobiological experiments (microcosms, mesocosms, macrocosms).**	**K_W02**
	2	**EP2**	**Knows and understands analytical and comparative methods used in hydrobiological research.**	**K_W03**
skills	**1**	**EP3**	**Can use appropriate mathods and tools for making hydrobiological samples; plan and carry experiments out; can take observations and measurements using appropriate tools and investigative, laboratory or/and fieldworks methods, as well as interpret the obtained results take conclusions basing on the knowledge**	**K_U03**
social competences	**1**	**EP4**	**Being critical in formulating conclusions**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Methods of hydrobiology (metody badań hydrobiologicznych)**			
Format of instruction: **conversation**			
1. **Fieldwork: methods of taking quantitative and qualitive samples of: benthos, plankton and periphyton in different types of environments (lotic and sagnant waters).**	1	6	0
2. **Methods of selecting and segregating hydrobiological material. Principles of conservation and preparation of the material. Methods for determining the density and distribution of hydrobionts. Descriptions and characteristics of habitats. Assessment of material representativeness.**	1	6	0
3. **Descriptions of biocenosis: biodiversity indicators, indicators of faunistic/floristic similarity, biocenotic indicators**	1	5	0
4. **Ordering methods: dendrites (classic, erected), Czekanowski's diagram. Assessment of the state of preservation of biocenosis - indicators of naturalness (Fischer, Czachorowski), - indicators of faunistic/floristic value.**	1	4	0

5. **Experimental work in hydrobiology: microcosms, mesocosms, macrocosms - rules of conduct, advantages and limitations.**	1	4	0

Modes of delivery	**multimedia presentation, discussion in the group forum**
	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
	PREZENTACJA	**EP1,EP2,EP3,EP4**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,EP3,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	**Independent performance of a presentation on the topic; activity in discussions**
	Grade calculation principles
	The final grade for the course is the grade from lectures

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	Methods of hydrobiology (metody badań hydrobiologicznych)		Nieobliczana	
	1	Methods of hydrobiology (metody badań hydrobiologicznych) [konwersatorium]	zaliczenie z oceną		

Basic reading	Sergey Baranov (2016): Hydrobiology: Manual for teacher of school and college, LAP LAMBERT Academic Publishing
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**25**	**0**
Participation in test / exam	**1**	**0**
Preparation for contact hours	**8**	**0**
Private reading and studying	**2**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**4**	**0**
Preparation for test / exam	**8**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Microbiology of the aquatic environment (mikrobiologia środowiska wodnego) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_11S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	laboratory	30	0	pg	5
		lecture	30	0	e	
Total			**60**			**5**

Course / module coordinator	**dr hab. PAULINA NIEDŹWIEDZKA-RYSTWEJ**
Course instructor	**dr hab. PAULINA NIEDŹWIEDZKA-RYSTWEJ**
Course / module objectives	**Acquainting with the structure and physiology of microorganisms, including environmental ones, and demonstrating the role of microorganisms in environment. Acquire skills of performing laboratory test in environmental microbiology. Learning to plan, execute, and learn from an experiment. Independent and group work.**
Prerequisites	**Knowledge of cell structure. Basic manual skills. Ability to work in team.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**The student describes the morphological and physiological features of bacteria, with particular emphasis on those that affect their use in the environment.**	**K_W01 K_W03**
	2	EP2	**The student knows the structure and characteristics of viruses (bacteriophages) and fungi.**	**K_W04**
	3	EP3	**Has knowledge of bacteria, viruses and fungi performing bioindication functions. Describes the role of microorganisms in biogeochemical cycles and biodegradation.**	**K_W01 K_W06**
	4	EP4	**Knows selected methods, techniques and research tools used in microbiology of the aquatic environment.**	**K_W02 K_W08**
skills	1	EP5	**Can plan and execute an experiment with using basic microbiological methods.**	**K_U03**
	2	EP6	**Uses available sources of information, including electronic ones, to obtain, collect and process data from various fields of knowledge related to hydrobiology.**	**K_U02**
	3	EP7	**Performs alone or in a team, under the supervision of a research supervisor, simple research tasks and expert opinions as well as tasks in the field of hydrobiology, noticing their microbiological aspects.**	**K_U04 K_U07**
social competences	1	EP8	**Understands the need for continuous training in the field environmental microbiology.**	**K_K05**
	2	EP9	**Is aware of the influence of microorganisms on shaping the natural environment.**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Microbiology of the aquatic environment (mikrobiologia środowiska wodnego)**			
Format of instruction: **lecture**			
1. **Characteristics of bacteria; their morphological properties; physiology: growth and reproduction. Metabolic processes of microorganisms in the environmental aspect. Application microorganisms in environmental protection. Ecology of microorganisms and bacterial variability.**	3	10	0
2. **Structure and physiology of viruses (bacteriophages) and fungi in waters.**	3	8	0
3. **Biological characteristics of the more important groups of microorganisms, i.e. bacteria, viruses and fungi, with particular emphasis on species with bioindication functions. Role microorganisms in biogeochemical and biodegradation cycles, i.e. the participation of microorganisms in changes in the environment.**	3	12	0
Format of instruction: **laboratory**			
1. **Methods of identifying microorganisms**	3	12	0
2. **Microbiology of waters. Methods of assessing these environments with particular water (bacteria of physiological groups, sanitary bacteria, bacteriophages FRNA and FDNA). Microbiological analysis of water samples taken from selected water reservoirs.**	3	18	0

Modes of delivery	**multimedia presentation, group work, practical classes**
	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**
	KOLOKWIUM	**EP1,EP2,EP3,EP4**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP2,EP3,EP4,EP6**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Exam - written test concerning the knowledge of the lectures; passing laboratories on the basis of activity, and written tests**
	Grade calculation principles
	The final grade is 75% of the grade for the written lectures and 25% of the grade for the laboratories.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Microbiology of the aquatic environment (mikrobiologia środowiska wodnego)		Ważona	
	3	Microbiology of the aquatic environment (mikrobiologia środowiska wodnego) [laboratorium]	zaliczenie z oceną		0,25
	3	Microbiology of the aquatic environment (mikrobiologia środowiska wodnego) [wykład]	egzamin		0,75

Basic reading	Błaszczyk, M.K. (2023): Mikrobiologia środowisk, Wydawnictwo Naukowe PWN, Warszawa
	Murray, P.R.; Pfaller, M.A.; Rosenthal, K.S. (red. wyd. polskie Martirosian G.; Przondo-Mordarska, A; Szkaradkiewicz, A.) (2022): Mikrobiologia, Edra Urban & Partner, Wrocław
Supplementary reading	Kowal, K.; Libudzisz, Z.; Żakowska, Z. (red.) (2023): Mikrobiologia techniczna. Tom 1, Wydawnictwo Naukowe PWN, Warszawa
	Kowal, K.; Libudzisz, Z.; Żakowska, Z. (red.) (2023): Mikrobiologia techniczna. Tom 2, Wydawnictwo Naukowe PWN, Warszawa
	Czasopisma: Aura Ekologia polska Kosmos Laboratorium Medycyna środowiskowa Polish Journal of Ecology Polish Journal of Environmental Studies Postępy Mikrobiologii Problemy Higieny i Epidemiologii Przegląd epidemiologiczny Roczniki PZH Wszechświat

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**20**	**0**
Private reading and studying	**10**	**0**
Participation in tutorials	**10**	**0**
Preparation of project / essay / etc.	**3**	**0**
Preparation for test / exam	**20**	**0**
TOTAL workload	**125**	
ECTS credits	**5**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**						
Course title: **Nature conservation (ochrona przyrody) (KIERUNKOWE)**					Course code: **SPR201AIJ3450_28S**	
Name of field of study: **Hydrobiology**						
Mode and cycle of study: **first-degree, full - time**		Profile of study: **general academic**			Specialty:	
Course / module status **obligatory**			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	30	0	pg	2
Total			**30**			**2**

Course / module coordinator	**prof. dr hab. AGNIESZKA POPIELA**
Course instructor	**prof. dr hab. AGNIESZKA POPIELA**
Course / module objectives	**The aim of the course is to familiarize students with the problems and methods of biodiversity conservation. Students can define the threats of nature, indicate the forms of its protection, and see and assess the existing and potential threats to the environment, is ready to appreciate the value of the natural environment.**
Prerequisites	**biological knowledge at the high school level.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Sudent knows and understands the history and development of scientific conservation**	**K_W02 K_W03**
	2	**EP2**	**Student knows, understands and describes the current legal basis for nature protection**	**K_W02**
	3	**EP3**	**Student knows the main types of ecosystems, identifies threats, knows methods of their protection.**	**K_W02 K_W03**
skills	**1**	**EP4**	**The student analyzes the processes taking place in nature**	**K_U02**
	2	**EP5**	**The student is able to properly select and use appropriate research methods and tools, and present the results of observations and conclusions, including the analysis of professional literature, in written and oral form, using advanced information and communication techniques**	**K_U02 K_U03**
	3	**EP6**	**The student is able to carry out observations and measurements using appropriate research and laboratory tools and methods, as well as interpret the obtained results and draw conclusions based on his knowledge**	**K_U02 K_U03**
social competences	**1**	**EP7**	**The student is ready to critically assess his knowledge and received content and to recognize the importance of general and specialist knowledge in the field of nature conservation in solving cognitive and practical problems, and to consult with experts the difficulties with solving problems on his own.**	**K_K02 K_K04**
	2	**EP8**	**The student is ready to fulfill social obligations, including sharing knowledge in the field of nature conservation with others and co-organizing activities for the social environment.**	**K_K04 K_K05**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Nature conservation (ochrona przyrody)**			
Format of instruction: **conversation**			
1. **History of the biodiversity of the biosphere**	5	4	0
2. **History of human influence on the biosphere.**	5	4	0
3. **The history and development of scientific conservation.**	5	4	0
4. **Main types of ecosystems and methods of their protection, with particular emphasis on hydrogenic ecosystems.**	5	4	0
5. **Types and conditions of surface protection.**	5	4	0
6. **Types and conditions of species protection.**	5	4	0
7. **Alien and invasive species.**	5	4	0
8. **Red lists and books, atlases of protected and rare species, internet databases**	5	2	0

Modes of delivery	**Lecture, presentation**	
	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,EP6,EP7,EP8**
	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	**Positive evaluation of the test.**	
	Grade calculation principles	
	The final grade for the course is the grade from discussion classes.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Nature conservation (ochrona przyrody)		Ważona	
	5	Nature conservation (ochrona przyrody) [konwersatorium]	zaliczenie z oceną		1,00

Basic reading	Burdett, H. L. (2024): “Cautious Positivity for the Future of Aquatic Conservation in Europe.” , Aquatic Conservation: Marine and Freshwater Ecosystems 34, no. 7: e4222. https://doi.org/10.1002/aqc.4222
	M. Prosser, H. Wallace, D. Gowing (2023): Phytosociology informs the conservation of species-rich meadows in hydrologically dynamic habitats: an example from British floodplains in a wider European context , Brit. Irish Botany, 5 (1) (2023), 10.33928/bib.2023.05.001
	Tucker, G. M., ed. (2023): Nature conservation in Europe: approaches and lessons. Cambridge,, UK: Cambridge University Press.
Supplementary reading	Andrew S. Pullin (2012): Conservation Biology , Cambridge University Press, Cambridge

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**5**	**0**

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

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Oceanography (oceanografia) (KIERUNKOWE)**	Course code: **SPR201AIJ3446_20S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 4 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	4	discussion classes	15	0	pg	5
		lecture	15	0	e	
Total			**30**			**5**

Course / module coordinator	**dr hab. ROMAN MARKS**
Course instructor	**dr hab. ROMAN MARKS**
Course / module objectives	**Assimilation of knowledge of oceanography by the student. After completing the course the student is able to apply the techniques and measuring equipment used in oceanography and correctly interpret the obtained results. The student is ready to expand his knowledge and improve professional competences.**
Prerequisites	**Basic knowledge of physics and chemistry**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	knows and understands chemical and physical tools necessary to understand basic laws and natural phenomena	K_W01
	2	EP2	Students know and understand the importance of basic analytical techniques and research tools used in the work of oceanographer to describe and interpret marine environmental processes	K_W02 K_W07
	3	EP3	Know and understand at an advanced level the issues and research problems in the field of oceanography	K_W01
skills	1	EP4	Student is able to operate measuring systems used in oceanographic research	K_U03
	2	EP5	Student is able to carry out experiments and observations using appropriate research methods and interpret the obtained results of observations	K_U04
	3	EP6	Student is able to use scientific terminology and is able to explain the concepts of oceanography	K_U05
social competences	1	EP7	Student is ready to critically assess owned knowledge	K_K02
	2	EP8	Student is ready to use his / her qualifications to initiate actions for the public interest	K_K04

CONTENT	Semester	No. of hours	including e-learning

Subject title: **Oceanography (oceanografia)**

Format of instruction: **lecture**			
1. **History of oceanography**	4	2	0
2. **Instruments used in oceanography**	4	2	0
3. **Thermal, saline and density structures of oceanic water**	4	2	0
4. **Ocean-atmosphere interactions**	4	3	0
5. **Gases dissolved in sea water**	4	2	0
6. **Biogenic matter in oceanic waters**	4	2	0
7. **Bubble mediated formation and functioning of RNA and DNA**	4	2	0
Format of instruction: **discussion classes**			
1. **Measurements of wind waves parameters in the coastal zone**	4	2	0
2. **Observation of wind wave transformation in the coastal zone**	4	2	0
3. **Photography recording of whitecap cover in the coastal water**	4	2	0
4. **Observation of Langmuir circulation**	4	2	0
5. **Photography recording of rotational features generated around bubbles rising in sea water**	4	3	0
6. **Measurements of dissolved oxygen concentration in coastal water**	4	2	0
7. **Experimental observations of droplets produced by bursting bubbles**	4	2	0

Modes of delivery	**Experimental observations conducted in laboratory and in marine coastal zone**
	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 USTNY	**EP1,EP2,EP3,EP4,EP6,EP7,EP8**
	SPRAWDZIAN	**EP1,EP2,EP3**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP4,EP5,EP6,EP7,EP8**
	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	**Practical classes: Correct performance of partial tasks, positive evaluation of the tests** **Lecture: a positive evaluation of the oral exam - covering the content of lectures**
	Grade calculation principles
	The final grade for the course is the average of grades from lectures and practical classes in a 1: 1 ratio.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	Oceanography (oceanografia)		Arytmetyczna	
	4	Oceanography (oceanografia) [wykład]	egzamin		
	4	Oceanography (oceanografia) [ćwiczenia]	zaliczenie z oceną		

Basic reading	Marks R. (2022): Bubble mediated polymerization of RNA and DNA , AIMS Biophys 9: 6–107
	Marks R. (2019): Water Vapor Induced Airborne Rotational Features. Meteorology Hydrology and Water Management, 7, 2, 29-47
	Marks R., Górecka E., McCartney K., Borkowski W. (2019): Rising bubbles as mechanism for scavenging and aerosolization of diatoms, Journal of Aerosol Science, Vol. 128, 79-88
	Webb P., (2023): Introduction to oceanography

Supplementary reading	Knauss J.A. (2005): Introduction to Physical Oceanography , Waveland Pr Inc.

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**6**	**0**
Private reading and studying	**30**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**30**	**0**
Preparation for test / exam	**25**	**0**
TOTAL workload	**125**	
ECTS credits	**5**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **OHS training (szkolenie BHP) (ANOTHER TO PASS)**		Course code: **SPR201AIJ3432_1S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 1 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	lecture	5	5	p	0
Total			**5**			**0**

Course / module coordinator	**dr MONIKA PRADZIADOWICZ**
Course instructor	**dr MONIKA PRADZIADOWICZ**
Course / module objectives	**Acquiring knowledge and skills in the field of occupational health and safety, fire protection, first aid in emergencies and the rights and obligations of a university student.**
Prerequisites	**No requirements.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**knows and understands the legal, organizational and ethical conditions for performing professional activities during education at a university.**	
skills	**1**	**EP2**	**Student is able to identify errors and omissions in practice.**	
	2	**EP3**	**Student is able to perform basic resuscitation procedures, recognize threats and take appropriate actions.**	
social competences	**1**	**EP4**	**performs tasks in a way that ensures own and surrounding safety, including compliance with safety principles.**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **OHS training (szkolenie BHP)**			
Format of instruction: **lecture**			
1. **Legal regulations: legal regulations regarding occupational safety and health protection in Polish and European Union legislation, obligations of universities and superiors in ensuring safe and hygienic conditions of study and internships, ergonomic factors in shaping conditions during education at universities, including hygienic standards for permanent rooms work.**	1	1	1
2. **Hazardous physical, biological and chemical factors during laboratory classes and workshops field activities. Accident hazards during classes and during professional internships, sports camps, and field activities. Avoiding threats with particular emphasis on collective protection measures i individual post-accident proceedings (legal regulations, accident insurance).**	1	2	2
3. **Providing first aid in emergencies, recognizing a health emergency, cardiopulmonary resuscitation with the use of an AED defibrillator, operating a first aid kit.**	1	1	1
4. **Legal basis in the field of fire protection, fire detection systems, flammable substances and explosives, preventing fire hazards, actions during a fire and others local threats, handy fire extinguishing equipment, evacuation.**	1	1	1

Modes of delivery	**e-learning course**	
	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**
	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	**obtaining at least 60% correct answers from the test**	
	Grade calculation principles	
	Zaliczenie kursu e-learningowego z zakresu BHP - uzyskanie min 60% poprawnych odpowiedzi z testu.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	OHS training (szkolenie BHP)		Nieobliczana	
	1	OHS training (szkolenie BHP) [wykład]	zaliczenie		

Basic reading	M. Goniewicz (2022): Pierwsza pomoc. Podręcznik dla studentów, PZWL Wydawnictwo Lekarskie, Warszawa
	Zarządzenie Rektora US w sprawie organizowania szkoleń w zakresie BHP dla studentów i doktorantów US, Szczecin
	(2022): Kodeks pracy – tekst jednolity, Dziennik Ustaw RP, Warszawa
Supplementary reading	S. Wieczorek (2014): Ergonomia. Poradnik BHP., Wydawnictwo Tarbonus, Tarnobrzeg
	(2022): Ustawa o Państwowym Ratownictwie Medycznym – tekst jednolity, Dziennik Ustaw RP, Warszawa

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**5**	**5**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**0**	**0**
Participation in tutorials	**0**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**5**	
ECTS credits	**0**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Ornithology (ornitologia) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_39S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	discussion classes	15	0	pg	3
		lecture	15	0	pg	
Total			**30**			**3**

Course / module coordinator	**dr hab. ŁUKASZ JANKOWIAK**
Course instructor	**dr hab. ŁUKASZ JANKOWIAK**
Course / module objectives	**Knowledge about the factors determining the biology of birds. Ability to birds identification and ability to count indicator bird species. The student is aware of the importance of birdlife in nature.**
Prerequisites	**Knowledge of the zoology at the secondary school grade**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Defines the sources of birds biodiversity, discusses the causes of the biodiversity in terms of time and geography**	**K_W06**
skills	**1**	**EP2**	**Uses the scientific literature**	**K_U02**
social competences	**1**	**EP3**	**Student maintains a fact-based and critical attitude in evaluating his own work**	**K_K01**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Ornithology (ornitologia)**			
Format of instruction: **lecture**			
1. **Origins**	3	3	0
2. **Form and function**	3	3	0
3. **Behaviour and communication**	3	2	0
4. **Behaviour and the environment**	3	2	0
5. **Avian life histories**	3	3	0
6. **Population dynamics and conservation**	3	2	0
Format of instruction: **discussion classes**			
1. **Identification of wetland birds**	3	6	0
2. **Identification of farmland birds**	3	3	0

3. **Identification of urban birds**	3	3	0
4. **Identification of forest birds**	3	3	0

Modes of delivery	**slides presentation, project development, working in groups**
	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**
	SPRAWDZIAN	**EP1,EP2**
	PREZENTACJA	**EP1,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	**- writing test** **- performance of a final work: slides** **- the final credit based on partial credits received during the semester for specific activities (partial tests covering the knowledge of the lectures and recommended literature, completion of classes, presentation and tests)**
	Grade calculation principles
	The final grade will be calculated as an average of the grades (1:1) acquired by the student.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Ornithology (ornitologia)		Arytmetyczna	
	3	Ornithology (ornitologia) [wykład]	zaliczenie z oceną		
	3	Ornithology (ornitologia) [ćwiczenia]	zaliczenie z oceną		

Basic reading	Lindsay Young , Eric VanderWerf (2022): Conservation of Marine Birds 1st Edition, Academic Press
	Frank B. Gill , Richard O. Prum, Scott Kuehner Robinson (2019): Ornithology (Foruth Edition), W.H. Freeman, Macmillan Learning, New York
	Lars Svensson; Killian Mullarney; Dan Zetterstro?m; P J Grant (2023): Collins bird guide, Collins, London
Supplementary reading	E.A. Schreiber, Joanna Burger (2002): Biology of Marine Birds, CRC Press , Boca Raton, London, New York, Washington D.C

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	**5**	**0**
Participation in tutorials	**4**	**0**
Preparation of project / essay / etc.	**8**	**0**
Preparation for test / exam	**9**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Parasitology (parazytologia) (KIERUNKOWE)**		Course code: **SPR201AIJ3446_19S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**	

Year	Semester	Form of instruction	No. of hours		Type of credit	ECTS
				including e-learning		
1	2	laboratory	15	0	pg	2
		lecture	15	0	pg	
Total			**30**			**2**

Course / module coordinator	**dr hab. IZABELLA RZĄD**
Course instructor	**dr hab. IZABELLA RZĄD , dr TOMASZ KREPSKI**
Course / module objectives	**Providing students with knowledge about the biology and ecology of parasites related to the aquatic environment, parasitological diagnostics, the importance of parasites in human economy and monitoring of the aquatic environment. Identification of parasite species in the aquatic environment and diagnostics of infestations with parasites important in water management and monitoring of the aquatic environment. Readiness to assess to importance of particular species of parasites for hmans.**
Prerequisites	**Basic knowledge of zoology and ecology.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows parasite species associated with the aquatic environment, types of parasite - host systems and relationships between the parasite and host. The student knows parasite reservoirs in the aquatic environment, routes of transmission, life cycles, and sources of infection.**	**K_W01 K_W03 K_W04**
	2	**EP2**	**The student knows the research methods used in research on parasites associated with the aquatic environment and parasitic diseases of aquatic animals.**	**K_W02 K_W06**
skills	**1**	**EP3**	**The student carries out parasitological dissections of animals associated with the aquatic environment, collects and fixes parasites, and prepares parasitological slides.**	**K_U03 K_U04**
	2	**EP4**	**The student performs taxonomic identification of parasites using keys and identifies various development stages of parasites, including dispersal stages.**	**K_U05 K_U07**
social competences	**1**	**EP5**	**The student is ready to follow the appropriate patterns of conduct and the rrules of ethics and work safety.**	**K_K01 K_K05**
	2	**EP6**	**The student is ready do share knowledge about parasites and to take action to monitor parasitic infestations in the aquatic environment.**	**K_K03 K_K04**

CONTENT	Semester	No. of hours	
			including e-learning

Subject title: **Parasitology (parazytologia)**			
Format of instruction: **lecture**			
1. **Parasitism as one of the types of interaction between species of animals; types and properties of parasite-host systems.**	2	2	0
2. **Systematic review of parasites associated with the aquatic environment - protists.**	2	2	0
3. **Systematic review of parasites associated with the aquatic environment - flatworms, roundworms and acanthocephalans.**	2	2	0
4. **Systematic review of parasites associated with the aquatic environment - arthropods.**	2	2	0
5. **Ecology and evolution of parasites, hosts, and the parasite - host system.**	2	2	0
6. **The role of parasites in aquatic ecosystems and in the human economy.**	2	2	0
7. **The use of parasites in biological monitoring of the aquatic environment**	2	2	0
8. **Zoonoses caused by parasites associated with the aquatic environment.**	2	1	0
Format of instruction: **laboratory**			
1. **Biotic and abiotic factors affecting parasites in the aquatic environment.**	2	2	0
2. **Parasitic protists in the aquatic environment - structure and recognition.**	2	2	0
3. **Parasitic flatworms, roundworms and acanthocephalans - structure and recognition.**	2	2	0
4. **Parasitic arthropods in the aquatic environment - structure and recognition**	2	2	0
5. **Parasitological examination of the host - parasitological dissection of invertebrates in the aquatic environment.**	2	2	0
6. **Parasitological examination of the host - parasitological dissection of vertebrates associated with the aquatic environment.**	2	2	0
7. **Parasitological testing of water for the presence of forms of parasites posing a threat to humans.**	2	2	0
8. **Taxonomic identification of parasite eggs and cysts.**	2	1	0

Modes of delivery	**Mmultimedia presentation, group work, individual work, performing sections and preparations.**	
	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,EP6**
	SPRAWDZIAN	**EP1,EP2,EP6**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Written statement covering knowledge from lecturers and basic literature. Credit for classes -based on attendance and tests.**	
	Grade calculation principles	
	The final mark is the arithmetic average of the marks from lecturers and classes in a 2:1 ratio.	

	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
Final grade calculation method	2	Parasitology (parazytologia)		Ważona	
	2	Parasitology (parazytologia) [laboratorium]	zaliczenie z oceną		0,33
	2	Parasitology (parazytologia) [wykład]	zaliczenie z oceną		0,67

Basic reading	Magurran A.E. (2004): Measuring Biological Diversity, Willey-Blackwell
	Moravec F. (2004): Metazoan parasites of salmonid fishes of Europe, ACADEMIA, Praha
	Poulin R. (2007): Evolutionary Ecology of Parasites, Princeton University Press, Princeton and Oxford
Supplementary reading	Combes C. (1995): Interactions durables. Ecologie et evolution du parasitisme., Masson, Editieur, Paris
	Dash G. (2012): Freshwater fish parasites, NIPA
	Klimpel S. et al. (2019): Parasites of Marine Fish and Cephalopods, Springer
	Moravec F. (1995): Parasitic Nematodes of Freshwater Fishes of Europe, Kluwer Academic Publishers, Springer
	Rhode K. (2005): Marine parasitology, CSiro Publishing, Victoria, Australia

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**3**	**0**
Private reading and studying	**3**	**0**
Participation in tutorials	**8**	**0**
Preparation of project / essay / etc.	**2**	**0**
Preparation for test / exam	**2**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Unit: **Lecture in the humanities or the social sciences [moduł]**		
Course title: **Pedagogical and Social Themes in Polish Cinema (pedagogiczne i społeczne aspekty w polskim kinie) (OGÓLNOUCZELNIANE)**		Course code: **SPR201AIJ3438_14S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **elective**	Language of instruction: **semester: 6 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	6	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr ALEKSANDER CYWIŃSKI**
Course instructor	**dr ALEKSANDER CYWIŃSKI**
Course / module objectives	**The aim of the classes is to familiarize students with Polish film heritage in a social and pedagogical context. The most important issues related to human rights and politics will be discussed.**
Prerequisites	**No prerequisites**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Knowledge about Polish cinematography**	
	2	**EP2**	**Knowledge about pedagogical and social aspects of Polish history**	
skills	**1**	**EP3**	**The ability to recognize the different types of motives in polish cinematography**	
	2	**EP4**	**The ability to notice the intertextuality of Polish cinematography**	
social competences	**1**	**EP5**	**The competence to talk about polish cinematography**	
	2	**EP6**	**The competence to teach about polish cinematography**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Pedagogical and Social Themes in Polish Cinema (pedagogiczne i społeczne aspekty w polskim kinie)**			
Format of instruction: **lecture**			
1. **null**	6	3	0
2. **null**	6	3	0
3. **null**	6	3	0
4. **null**	6	3	0
5. **null**	6	3	0

Modes of delivery	**Lectures: Problem-based lecture with multimedia presentations.**	
	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
	PRACA PISEMNA/ ESEJ/ RECENZJA	**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	**Activity in classes during discussions. Writing an essay on the topics discussed in class.**	
	Grade calculation principles	
	The final grade for the course is the lecture grade.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Pedagogical and Social Themes in Polish Cinema (pedagogiczne i społeczne aspekty w polskim kinie)		Ważona	
	6	Pedagogical and Social Themes in Polish Cinema (pedagogiczne i społeczne aspekty w polskim kinie) [wykład]	zaliczenie z oceną		1,00

Basic reading	Haltof Marek (2007): Historical dictionary of polish cinema, Scarecrow Press
	Soban?ski Oskar (1987): Polish feature films : a reference guide : 1945-1985, Locust Hill Press
Supplementary reading	Krakus Anna (2018): No end in sight : polish cinema in the late socialist period, University of Pittsburgh Press

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**9**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**20**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Phycology (fykologia) (KIERUNKOWE)**		Course code: **SPR201AIJ3446_22S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 4 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	4	laboratory	30	0	pg	6
		lecture	30	0	e	
Total			**60**			**6**

Course / module coordinator	**dr PRZEMYSŁAW DĄBEK**
Course instructor	**dr PRZEMYSŁAW DĄBEK**
Course / module objectives	**The aim of the course is to understand the key issues of the morphology, classification, ecology and ecophysiology of algae and seagrass, algae phylogeny and genomics, harmful algal blooms, assessment of the ecological quality of coastal waters using macrophytes as biomarkers, applied phycology and commercial algae. Students will be able to classify and recognise basic types of algae.**
Prerequisites	**Knowledge and skills acquired in courses such as Botany and Ecology are recommended.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**knows and understands research and field techniques used in phycology**	**K_W02**
	2	**EP2**	**Knows and understands the principles of preserving biodiversity in the context of obtaining algae and marine plants for economic purposes**	**K_W04**
skills	**1**	**EP3**	**is able to properly plan phycological sampling methods and identify the main groups of algae and marine plants**	**K_U04**
	2	**EP4**	**is able to search for information on the identified organisms and associate their occurrence with specific environmental conditions**	**K_U02**
social competences	**1**	**EP5**	**it is ready to balance the need to conserve biodiversity with the need to exploit the living resources of the seas and the oceans**	**K_K01**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Phycology (fykologia)**			
Format of instruction: **lecture**			
1. **Introduction to phycology.**	4	4	0
2. **Cyanobacteria, formerly the blue lineage.**	4	4	0
3. **Macroalgae.**	4	4	0
4. **The vast world of microalgae, part 1.**	4	4	0

5. **The vast world of microalgae, part 2.**	4	4	0
6. **Aquaculture and blue biotechnologies**	4	4	0
7. **The use of genomics in phycology**	4	4	0
8. **Algae and biomonitoring.**	4	2	0
Format of instruction: **laboratory**			
1. **Establishing a culture collection of microalgae.**	4	4	0
2. **Taxonomy of algae.**	4	4	0
3. **Molecular biology and genomics applied to algae part 1**	4	6	0
4. **Molecular biology and genomics applied to algae part 2**	4	6	0
5. **Molecular biology and genomics applied to algae part 3**	4	6	0
6. **Molecular biology and genomics applied to algae part 4**	4	4	0

Modes of delivery	**Lecture based on the original script in the form of multimedia presentations. Laboratory exercises in the form of tasks to be performed with the use of optical equipment - microscopes and binoculars or, if carried out online, with the use of photos, figures and databases.**
	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 USTNY	**EP1,EP2**
	KOLOKWIUM	**EP3,EP4**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Performing correctly all laboratory tasks and passing a test in laboratories, as well as obtaining a positive exam grade in the lectures.**
	Grade calculation principles
	The final grade is the average of the grades from exercises and the exam.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	Phycology (fykologia)		Nieobliczana	
	4	Phycology (fykologia) [wykład]	egzamin		
	4	Phycology (fykologia) [laboratorium]	zaliczenie z oceną		

Basic reading	Lee R.E. (1999): Phycology, Cambridge Univ. Press, Cambridge
	van den Hoek C., Mann D.G., Jahns H.M. (1995): Algae. An introduction to phycology, Cambridge Univ. Press, Cambridge
Supplementary reading	powierzone na bieżąco materiały w postaci artykułów i książek :

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**4**	**0**
Preparation for contact hours	**20**	**0**

Private reading and studying	**25**	**0**
Participation in tutorials	**25**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**16**	**0**
TOTAL workload	**150**	
ECTS credits	**6**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Blok II**	
Course title: **Phylogeny of water organisms (filogeneza organizmów wodnych) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_40S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	conversation	20	0	pg	2
Total			**20**			**2**

Course / module coordinator	**dr hab. LIDIA SKUZA**
Course instructor	**dr hab. LIDIA SKUZA**
Course / module objectives	**To acquaint students with the basic issues concerning the origin of water organisms and the relationship between them at various taxonomic levels and to prepare students to use modern molecular methods in the study of the relationship of water organisms. The student is ready to popularize the knowledge about the evolutionary origin of species.**
Prerequisites	**Basic knowledge of botany and biology**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**The student knows the hypotheses on the origin of life on Earth and explains the main paths of phylogenetic development of aquatic organisms using knowledge from various fields of biological sciences**	**K_W01 K_W03 K_W05**
	2	EP2	**The student knows and explains the concepts and terms used in modern phylogenetics**	**K_W01 K_W05**
skills	1	EP3	**The student uses the available sources of genetic information, critically assessing the available resources**	**K_U01 K_U02 K_U03**
	2	EP4	**The student understands the essence of undertaken actions, is able to assess the efficiency and effectiveness of used methods, interprets the results and suggests possible methodical changes**	**K_U03 K_U04 K_U07**
social competences	1	EP5	**Students are aware of the level of their knowledge and skills, they understand the need for constant professional development, they self-assess their own competences and improve their skills, they set directions for their own development and education.**	**K_K02 K_K05 K_K06**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Phylogeny of water organisms (filogeneza organizmów wodnych)**			
Format of instruction: **conversation**			
1. **The origin of life and the theory of endosymbiosis**	5	2	0

2. **The concept of species. Features important in the assessment of species relatedness. Phenetic and phylogenetic taxonomy**	5	4	0
3. **Main assumptions of molecular evolution**	5	4	0
4. **Molecular phylogeny: selection of appropriate genetic markers and characterization of the main methods for constructing phylogenetic trees**	5	6	0
5. **Phylogenetics of major groups of organisms in the marine environment**	5	4	0

Modes of delivery	**Information-conversation lecture conducted with the use of multimedia presentations and analysis of scientific articles combined with 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
	KOLOKWIUM	**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	**Passing the test with a positive grade**
	Grade calculation principles
	The grade from the colloquium is the grade from the course

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Phylogeny of water organisms (filogeneza organizmów wodnych)		Ważona	
	5	Phylogeny of water organisms (filogeneza organizmów wodnych) [konwersatorium]	zaliczenie z oceną		1,00

Basic reading	Arnason U., Gullberg A., Janke A., Kullberg M., Lehman N., Petrov E.A., Vainola R. (2006): Pinniped phylogeny and a new hypothesis for their origin and dispersal., Molecular Phylogeny and Evolution. 41: 345-354.
	Bourlat S.J., Nielsen C., Economou A.D., Telford M.J. (2008): Testing the new animal phylogeny: a phylum level molecular analysis of the animal kingdom., Molecular Phylogenetics and Evolution. 49: 23-31.
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**20**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**6**	**0**
Private reading and studying	**6**	**0**
Participation in tutorials	**10**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**6**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Physical Education (wychowanie fizyczne) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3362_19S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language, semester: 4 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	zajęcia z wychowania fizycznego	30	0	p	0
	4	zajęcia z wychowania fizycznego	30	0	p	0
Total			**60**			**0**

Course / module coordinator	**mgr CEZARY JANISZYN**
Course instructor	**mgr CEZARY JANISZYN**
Course / module objectives	**The aim of the course is to obtain by students selected motor skills from the basic departments of gym, development of general physical fitness.**
Prerequisites	**No health contraindications for exercising**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Students know and understand to an advanced degree the impact of exercise on the human body. The student knows and understands the effects of exercise on the human body, ways to maintain health and fitness The student also understands the principles of organization of physical activities.**	
skills	**1**	**EP2**	**The student has mastered movement skills in team games, individual sports, qualified tourism and useful The student is able to organize and participate in games and plays The student will be able to learn how to play team games, individual sports, qualified tourism and useful for organizing and participating in games and plays.**	
social competences	**1**	**EP3**	**The student is ready to promote the social, cultural significance of of sport and physical activity and to form his/her own preferences of physical culture.**	

CONTENT	Semester	No. of hours	including e-learning

Subject title: **Physical Education (wychowanie fizyczne)**

Format of instruction: **zajęcia z wychowania fizycznego**

1. **to to choose from:** **1. Team games - methods of moving around the sports field, - improving the basic elements of the technique and tactics of the game, - game fragments and the school game, - games and activities used in team games, - rules of the game and refereeing rules, - organization of tournaments in team games, - participation in sports competitions (Academic Polish Championships, Intercollegiate League, Universiade, Academic European Championships).** **2. Aerobics, Dance - improvement of general physical fitness, - the ability to properly perform exercises and dance techniques, - strengthening of postural muscles and other muscle groups, - increasing the respiratory and circulatory capacity of the body, - body awareness, knowledge of individual muscle groups and appropriate exercises for them .** **3. Individual sports (tennis, table tennis, squash, karate, self-defense, Nordic walking, swimming, cycling, skiing, rowing): - improvement of general physical fitness, - learning and improvement of techniques in the field of individual sports disciplines, - implementation of independent physical exercises, - strengthening the postural muscles and other muscle groups, - the ability to properly perform exercises and techniques specific to a given sport discipline, - games and games appropriate for a given discipline, - organization of tournaments and competitions, - providing first aid and learning cardiopulmonary resuscitation respiratory, - participation in sports competitions (Academic Polish Championships, Academic Championships of the West Pomeranian Voivodeship, Universiade, Academic European Championships).** **4. Qualified tourism (ski camp, bicycle and canoe camp) - learning and improving the basic elements of skiing and cycling techniques - improving general physical fitness and increasing respiratory and circulatory capacity - learning the ability to use tourist equipment (skis, bicycle, canoe) - compliance with social standards of behavior on the trail and in tourist facilities - elements of survival - learning how to organize canoeing trips, bicycle rallies and skiing competitions - providing first aid and learning cardiopulmonary resuscitation**	3	30	0
2. **to choose from:** **1. Team games - methods of moving around the sports field, - improving the basic elements of the technique and tactics of the game, - game fragments and the school game, - games and activities used in team games, - rules of the game and refereeing rules, - organization of tournaments in team games, - participation in sports competitions (Academic Polish Championships, Intercollegiate League, Universiade, Academic European Championships).** **2. Aerobics, Dance - improvement of general physical fitness, - the ability to properly perform exercises and dance techniques, - strengthening of postural muscles and other muscle groups, - increasing the respiratory and circulatory capacity of the body, - body awareness, knowledge of individual muscle groups and appropriate exercises for them .** **3. Individual sports (tennis, table tennis, squash, karate, self-defense, Nordic walking, swimming, cycling, skiing, rowing): - improvement of general physical fitness, - learning and improvement of techniques in the field of individual sports disciplines, - implementation of independent physical exercises, - strengthening the postural muscles and other muscle groups, - the ability to properly perform exercises and techniques specific to a given sport discipline, - games and games appropriate for a given discipline, - organization of tournaments and competitions, - providing first aid and learning cardiopulmonary resuscitation respiratory, - participation in sports competitions (Academic Polish Championships, Academic Championships of the West Pomeranian Voivodeship, Universiade, Academic European Championships).** **4. Qualified tourism (ski camp, bicycle and canoe camp) - learning and improving the basic elements of skiing and cycling techniques - improving general physical fitness and increasing respiratory and circulatory capacity - learning the ability to use tourist equipment (skis, bicycle, canoe) - compliance with social standards of behavior on the trail and in tourist facilities - elements of survival - learning how to organize canoeing trips, bicycle rallies and skiing competitions - providing first aid and learning cardiopulmonary resuscitation**	4	30	0

Modes of delivery	**methods of performing motor tasks: reproductive (recreational), proactive (self-empowering), creative (creative); method of teaching motor tasks: synthetic, analytical, mixed, comprehensive ;, methods of transmitting messages: reproductive, proactive, creative, trial and error method**
	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**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,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	**Passing the exercises positively on the basis of attendance, completed tests and completed group projects.**	
	Grade calculation principles	
	Pass without grade	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Physical Education (wychowanie fizyczne)		Nieobliczana	
	3	Physical Education (wychowanie fizyczne) [zajęcia z wychowania fizycznego]	zaliczenie		
	4	Physical Education (wychowanie fizyczne)		Nieobliczana	
	4	Physical Education (wychowanie fizyczne) [zajęcia z wychowania fizycznego]	zaliczenie		

Basic reading	Barankiewicz J. (1992): Poradnik nauczyciela wychowania fizycznego: zbiór podstawowych pojęć z teorii i metodyki wychowania fizycznego, sportu oraz wychowania zdrowotnego, Wojewódzki Ośrodek Metodyczny, Kalisz
	Huciński T., Lekner I. (2001): Koszykówka - podręcznik dla trenerów, nauczycieli i studentów, Wydawnictwo BK, Wrocław
	Kuźmińska O., Popielawska M. (1995): Taniec-Rytm-Muzyka, Wydawnictwo Skr. AWF Poznań, Poznań
	Trześniowski R. (1995): Zabawy i gry ruchowe , Wydawnictwa Szkolne i Pedagogiczne, Warszawa
Supplementary reading	Boyle M. (2019): Nowoczesny trening funkcjonalny, Galaktyka, Łódź
	Kulczycki R. (2005): Tenis stołowy bez tajemnic, Publicat, Poznań

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**0**	**0**
Participation in tutorials	**0**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**60**	
ECTS credits	**0**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Physiology of water animals (fizjologia zwierząt wodnych) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_23S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status: **obligatory**	Language of instruction: **semester: 4 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	4	laboratory	15	0	pg	3
		lecture	15	0	pg	
Total			**30**			**3**

Course / module coordinator	**dr hab. WIOLETA DUDZIŃSKA**
Course instructor	**dr hab. WIOLETA DUDZIŃSKA**
Course / module objectives	**Understanding the relationship between the course of life activities of aquatic animals and the environmental factors, which, as a result, will allow us to understand the behavioral and physiological adaptations to life in various aquatic habitats. Students will be able to perform analyze the course of physiological processes conditioning the functioning of animals in the aquatic environment, be responsible for jointly performed tasks.**
Prerequisites	**Basic knowledge of the biology of aquatic animals.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student has knowledge of the basic physiological processes of aquatic animals. Knows and understands their regulation and connections enabling the maintenance of homeostasis, as well as the adaptation of animals to their living environment.**	**K_W01 K_W06**
skills	**1**	**EP2**	**The student is able to use his knowledge to analyze the course of physiological processes conditioning the functioning of animals in the aquatic environment. Uses basic techniques and methods to obtain physiological and environmental data and is able to link them with each other. Can plan and organize work independently and in a team in order to effectively perform specific tasks.**	**K_U01 K_U03 K_U04 K_U07**
social competences	**1**	**EP3**	**The student knows the limitations of his own knowledge and skills and understands the need to constantly improve professional qualifications, as well as personal and social competences, is ready to perform various roles in a team, submit to the rules of teamwork and be responsible for jointly performed tasks.**	**K_K01 K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Physiology of water animals (fizjologia zwierząt wodnych)**			
Format of instruction: **lecture**			
1. **Water as the habitat of animals. Mechanisms underlying adaptation to life.**	4	2	0

2. **Animal water balance, osmoregulation and excretion. Adaptations to life in fresh and salt waters.**	4	2	0
3. **Adaptations of the cardiovascular and respiratory systems to life in aquatic environments: animal respiration without specialized respiratory organs, respiratory organs of aquatic animals, respiration and gas exchange mechanism.**	4	3	0
4. **Thermal adaptations of aquatic organisms in different habitats: physiological effects of temperature change, temperature regulation in cold and warm conditions, thermal conductivity.**	4	2	0
5. **Different forms of adaptation of aquatic animals to the nutrition process: food intake, symbiotic food supply, digestion - intra- and extracellular, food intake regulation and energy demand.**	4	2	0
6. **The impact of environmental conditions on the structure and functioning of the sensory organs, the nervous and endocrine systems. Circadian and seasonal rhythms in animals as a direct requirement of the environment.**	4	2	0
7. **Physiological and behavioral adaptations to extreme aquatic habitats.**	4	2	0
Format of instruction: **laboratory**			
1. **Measuring plasma osmolality in fish acclimated to different salinities.**	4	3	0
2. **Physiology of the cardiovascular and circulatory system of fish. Heart function. Taking blood samples, making and staining smears and their microscopic analyses.**	4	3	0
3. **Respiration in fish- determining the level of oxygen dissolved in water and determining the influence of temperature on the respiration process.**	4	3	0
4. **Functions of the excretory system - determination of the content of ammonium ion and ammonia in water.**	4	3	0
5. **Anatomical and physiological differences in the digestive systems of predatory fish and planktivores. Digestive enzymes.**	4	3	0

Modes of delivery	**Lecture** **Labs**	
	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**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,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	**Lectures: test composed of single-choice questions. In order to get the mark 3,0 the student must give 60% of correct answers.** **Labs: test composed of single-choice questions. In order to get the mark 3,0 the student must give 60% of correct answers.**	
	Grade calculation principles	
	The overall grade is calculated as a mean average of grades obtained during lectures and labs.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	Physiology of water animals (fizjologia zwierząt wodnych)		Arytmetyczna	
	4	Physiology of water animals (fizjologia zwierząt wodnych) [wykład]	zaliczenie z oceną		
	4	Physiology of water animals (fizjologia zwierząt wodnych) [laboratorium]	zaliczenie z oceną		

Basic reading	Baldisserotto B., Mancera Romero J.M. , Kapoor B.G (1997): Fish Osmoregulation, Science Publishers
	Schmidt-Nelsen K (1997): Animal Physiology: Adaptation and Environment, 5th Edition., Cambridge University Press
	Willmer P., Stone G., Johnston I. (2004): Environmental Physiology of Animals, 2nd Edition. , Wiley-Blackwell
Supplementary reading	

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**18**	**0**
Private reading and studying	**15**	**0**
Participation in tutorials	**0**	**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-H-O-I-S-25/26Z**	
Course title: **Physiology of water plants (fizjologia roślin wodnych) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_15S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	laboratory	30	0	pg	3
		lecture	15	0	pg	
Total			**45**			**3**

Course / module coordinator	**dr DANUTA CEMBROWSKA-LECH**
Course instructor	**dr DANUTA CEMBROWSKA-LECH**
Course / module objectives	**The aim of the course is to present the basic life processes and functioning of water plants, regulatory mechanisms during plant growth and development and the influence of environmental factors on these processes. The students know and use basic biochemical methods. Students are ready to use knowledge and information to solve problems related to the functioning of plants.**
Prerequisites	**Students should have a basic knowledge of structure and properties of organic compounds, plant cell and tissues structure, together with the ability of working in a chemical laboratory.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**Student has a basic knowledge of biochemical and physiological processes in water plants.**	**K_W01 K_W06**
	2	EP2	**Student knows the principle of mechanisms that regulate the general vital functions of water plants.**	**K_W01 K_W03**
	3	EP3	**Student knows the basic methods, techniques, tools and materials used to solve simple tasks in the field of study.**	**K_W02 K_W07**
skills	1	EP4	**Student is able to evaluate and interpret the basic biological parameters of plants in order to diagnose the physiological and biochemical status of water plants.**	**K_U02**
	2	EP5	**Student is able to plan and perform experiments related to the assessment of physiological processes in plants.**	**K_U03 K_U04**
	3	EP6	**Student analyzes the conditions of physiological processes in plant organisms in terms of the possibility of their optimization.**	**K_U02 K_U03 K_U04**
	4	EP9	**Student is able to work individually and in a group, assuming different roles in it, aiming to achieve the assumed goal.**	**K_U07**
	5	EP10	**Is able to properly define priorities in order to accomplish a task defined by himself or others.**	**K_U08**
social competences	1	EP8	**Is aware of the level of their knowledge and skills and understands the need for lifelong learning.**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning

Subject title: **Physiology of water plants (fizjologia roślin wodnych)**			
Format of instruction: **lecture**			
1. **Introduction to physiology of water plant. Mineral nutrition.**	3	3	0
2. **Solute transport.**	3	2	0
3. **Respiration.**	3	2	0
4. **Photosynthesis.**	3	4	0
5. **Phytohormones in the regulation of physiological processes.**	3	2	0
6. **Stress physiology.**	3	2	0
Format of instruction: **laboratory**			
1. **Chemical analysis of plant material.**	3	4	0
2. **Water and mineral management.**	3	4	0
3. **Determination of the assimilation pigments level.**	3	4	0
4. **Photosynthesis intensity - influence of external factors.**	3	4	0
5. **Respiration intensity - influence of external factors.**	3	4	0
6. **Influence of phytohormones on plant growth and development.**	3	6	0
7. **Plant resistance to stress.**	3	4	0

Modes of delivery	**Lecture- multimedia presentations.** **Lab- group work and independent work, carrying out experiments laboratory.**
	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,EP4,EP6,EP8**
	SPRAWDZIAN	**EP1,EP2,EP4,EP8**
	PROJEKT	**EP1,EP10,EP2,EP3,EP4,EP6,EP8,EP9**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP10,EP2,EP3,EP4,EP5,EP6,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	**Lecture- written exam.** **Lab- Activity in class, passing a test and reports on observation and discussing the results of the experiments.**
	Grade calculation principles
	The final grade of the course coordinator is calculated as the arithmetic mean of the grades from laboratory exercises and lectures.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Physiology of water plants (fizjologia roślin wodnych)		Arytmetyczna	
	3	Physiology of water plants (fizjologia roślin wodnych) [wykład]	zaliczenie z oceną		
	3	Physiology of water plants (fizjologia roślin wodnych) [laboratorium]	zaliczenie z oceną		

Basic reading	Lincoln Taiz, Eduardo Zeiger, Ian M. M?ller, and Angus Murphy (2022): Plant Physiology and Development, Sinauer Associates, Oxford University Press
Supplementary reading	Lambers, Hans, Oliveira, Rafael (2019): Plant Physiological Ecology, Springer Nature

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**45**	**0**
Participation in test / exam	**4**	**0**
Preparation for contact hours	**4**	**0**
Private reading and studying	**4**	**0**
Participation in tutorials	**7**	**0**
Preparation of project / essay / etc.	**5**	**0**
Preparation for test / exam	**6**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Potamology and limnology (potamologia i limnologia) (KIERUNKOWE)**	Course code: **SPR201AIJ3450_13S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**
Specialty:	
Course / module status **obligatory**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	discussion classes	30	0	pg	6
		lecture	30	0	e	
Total			**60**			**6**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**The aim of the course is to familiarize students with the functioning of natural freshwater basins, both standing and flowing. After completing the course, the student has knowledge of the most important phenomena that determine the proper functioning of standing and running waters. Student is able to assess the condition of properly functioning river and lake ecosystems. Is aware of the effects of human activity on the functioning of watercourses.**
Prerequisites	**Basic knowledge of biology**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student understands the specificity of the functioning of running and standing waters**	**K_W01**
	2	**EP2**	**The student understands the specificity of the functioning of running and standing waters**	**K_W03**
	3	**EP3**	**The student has knowledge of mathematics, physics and chemistry to understand the natural phenomena occurring in running and standing waters, knows the techniques and tools needed to assess the environment of flowing and stagnant waters**	**K_W02 K_W07**
skills	**1**	**EP4**	**The student is able to plan and perform analyzes using the research techniques and methods in the assessment of the environment of running and standing waters. Te student based on the known methods can predict the environmental conditions of the river in relation to the current state of the environment**	**K_U01 K_U04**
	2	**EP5**	**The student acquires the skills to recognize and explain the phenomena related to the functioning of river ecosystems using the available information sources**	**K_U03**
	3	**EP6**	**The student performs simple tasks, alone or in a team and under the supervision of a tutor. He can make a critical assessment of the functioning and usefulness of technical solutions used in the protection of water basins environment**	**K_U07**

social competences	**1**	**EP7**	**The student is ready to cooperate with the community, institutions and entrepreneurs for the protection of the aquatic environment.**	**K_K03**
	2	**EP8**	**The student is ready to constantly update his knowledge in the field of improving the condition of natural waters**	**K_K06**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Potamology and limnology (potamologia i limnologia)**			
Format of instruction: **lecture**			
1. **Properties and types of running waters**	3	2	0
2. **Biological resources and interactions in running waters**	3	2	0
3. **Circulation of inorganic and organic matter in running waters**	3	2	0
4. **Biocenosis of running waters**	3	2	0
5. **The meaning of flow-through basins in funkctioning of running waters**	3	2	0
6. **River Continuum Concept**	3	2	0
7. **Properties and types of standing waters**	3	2	0
8. **Lake eutrophication**	3	2	0
9. **Biological resources and interactions in standing waters**	3	2	0
10. **Circulation of inorganic and organic matter in standing waters**	3	2	0
11. **Biocenosis of standing waters**	3	2	0
12. **Funkcjonowanie i rola mokradeł w prawidłowym utrzymaniu stosunków wodnych**	3	2	0
13. **River-lake ecotones**	3	2	0
14. **Astatic basins**	3	2	0
15. **Transitional waters**	3	2	0
Format of instruction: **discussion classes**			
1. **Predictability of the environmental conditions of runnig waters based on the knowledge of the current abiotic state**	3	2	0
2. **The role of flow-through basins as clarifiers of organic matter in rivers**	3	2	0
3. **Inter-structural connections in river**	3	2	0
4. **Assessment of the driffted organic matter mass on the river ecosystem functioning**	3	2	0
5. **The role of morphometric indicators of running waters and river valleys in the context of ecosystem features**	3	2	0
6. **Designing the biological assumptions in the protection of river habitats and organisms**	3	2	0
7. **Predictability of the environmental conditions of standing waters based on the knowledge of the current abiotic state**	3	2	0
8. **The role of morphometric indicators of standing waters and river valleys in the context of ecosystem features**	3	2	0
9. **Morphometric characteritics of lakes**	3	2	0
10. **Ecological zones of lakes and the role of macrophytes in shaping the ecological conditions of standing waters**	3	2	0
11. **Physico-chemical properties of the water and sediments of lakes**	3	2	0
12. **Diel migrations of aquatic organisms**	3	4	0
13. **Assessment of the use of catchment area on the standing waters functioning**	3	2	0
14. **Assessment of the use of catchment area on the running waters functioning**	3	2	0

Modes of delivery	**group work, independent calculations, multimedia presentation**	
	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 USTNY	**EP1,EP3,EP4,EP8**
	KOLOKWIUM	**EP2,EP7,EP8**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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 credit for the exercises is a positive grade, which is the average grade obtained from the test verifying the mastery of the knowledge provided to the student during the exercises. The condition for obtaining a credit for the lecture is a positive grade from the oral exam verifying the mastery of the knowledge passed to the student during the lectures.**	
	Grade calculation principles	
	Average of the final grade for exercises and lectures	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Potamology and limnology (potamologia i limnologia)		Arytmetyczna	
	3	Potamology and limnology (potamologia i limnologia) [wykład]	egzamin		
	3	Potamology and limnology (potamologia i limnologia) [ćwiczenia]	zaliczenie z oceną		

Basic reading	Allan, J. D., Castillo, M. M. (2007): Stream ecology: structure and function of running waters. , Springer Science & Business Media.
	J.G. Tundisi, T. Matsumura-Tundisi (2012): Limnology, Taylor & Francis
Supplementary reading	

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**20**	**0**
Private reading and studying	**18**	**0**
Participation in tutorials	**25**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**25**	**0**
TOTAL workload	**150**	
ECTS credits	**6**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Foreign language (język obcy) [moduł]**	
Course title: **Russian language (język rosyjski) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3457_49S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language, semester: 4 - english language, semester: 5 - english language, semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	lektorat	30	0	pg	2
	4	lektorat	30	0	pg	2
3	5	lektorat	30	0	pg	3
	6	lektorat	30	0	e	3
Total			**120**			**10**

Course / module coordinator	**mgr LUCYNA SMĘDZIK**
Course instructor	**mgr LUCYNA SMĘDZIK**
Course / module objectives	**The aim is to obtain B2 level by students by expanding and systematizing knowledge in the field of grammar and vocabulary, increasing communication skills in everyday life situations as well as professional issues that interest them**
Prerequisites	**knowledge of grammar, vocabulary and phonetics at B1 level; according to the recommendations of the Common European Framework**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
skills	**1**	**EP1**	**The student has the ability to communicate at the B2 level with various people in verbal and written form and reads articles related to the field of his study**	**K_U06**
	2	**EP2**	**The student participates in conversations, discussions and formulates longer oral statements on general and specialist topics**	**K_U05 K_U06**
	3	**EP3**	**The student independently plans and consistently improves his language skills, continues the process of training and self-improvement until the end of his life.**	**K_U08**
social competences	**1**	**EP4**	**He is aware of his linguistic competence and the usefulness of his knowledge in professional work, therefore when he cannot solve the problem himself, he is ready to use expert consultations**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Russian language (język rosyjski)**			
Format of instruction: **lektorat**			
1. **words and phrases about everyday life**	3	10	0

2. **work with specialist material**	3	18	0
3. **test of acquired skills**	3	2	0
4. **exercises in speaking and reading**	4	16	0
5. **language communication**	4	12	0
6. **control test**	4	2	0
7. **professional vocabulary and phrases**	5	16	0
8. **exercises in speaking, listening, reading and writing**	5	12	0
9. **test**	5	2	0
10. **reading and speaking exercises**	6	20	0
11. **listening and writing exercises**	6	8	0
12. **knowledge test**	6	2	0

Modes of delivery	**Classes improving all language competences: reading, listening, speaking and writing relating to the vocabulary and topics in the scope proposed in the foreign language textbook and additional text materials; classes related to the lexical and grammatical material contained in the textbook and resulting from the learning objectives; basics of pronunciation and spelling; creating statements on various topics**
	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 USTNY	**EP1,EP2,EP3**
	KOLOKWIUM	**EP1**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP3**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,EP3,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	**semester 3, 4, 5: the condition for passing the exercises is to obtain a positive grade in tests, written assignments; semester 6: the condition for passing the exercises is obtaining a positive grade in the oral exam**
	Grade calculation principles
	semesters: 3, 4, 5: the final grade is the grade obtained for completing classes. semester 6: the exam grade is the final grade for the subject.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Russian language (język rosyjski)		Ważona	
	3	Russian language (język rosyjski) [lektorat]	zaliczenie z oceną		1,00
	4	Russian language (język rosyjski)		Ważona	
	4	Russian language (język rosyjski) [lektorat]	zaliczenie z oceną		1,00
	5	Russian language (język rosyjski)		Ważona	
	5	Russian language (język rosyjski) [lektorat]	zaliczenie z oceną		1,00
	6	Russian language (język rosyjski)		Ważona	
	6	Russian language (język rosyjski) [lektorat]	egzamin		1,00

Basic reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :

Supplementary reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**120**	**0**
Participation in test / exam	**8**	**0**
Preparation for contact hours	**70**	**0**
Private reading and studying	**14**	**0**
Participation in tutorials	**20**	**0**
Preparation of project / essay / etc.	**4**	**0**
Preparation for test / exam	**14**	**0**
TOTAL workload	**250**	
ECTS credits	**10**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Foreign language (język obcy) [moduł]**	
Course title: **Spanish language (język hiszpański) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3457_48S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language, semester: 4 - english language, semester: 5 - english language, semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	lektorat	30	0	pg	2
	4	lektorat	30	0	pg	2
3	5	lektorat	30	0	pg	3
	6	lektorat	30	0	e	3
Total			**120**			**10**

Course / module coordinator	**dr PIOTR WAHL**
Course instructor	**dr PIOTR WAHL**
Course / module objectives	**The aim is to obtain B2 level by students by expanding and systematizing knowledge in the field of grammar and vocabulary, increasing communication skills in everyday life situations as well as professional issues that interest them**
Prerequisites	**knowledge of grammar, vocabulary and phonetics at B1 level; according to the recommendations of the Common European Framework**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
skills	**1**	**EP1**	**The student has the ability to communicate at the B2 level with various people in verbal and written form and reads articles related to the field of his study**	**K_U06**
	2	**EP2**	**The student participates in conversations, discussions and formulates longer oral statements on general and specialist topics**	**K_U05 K_U06**
	3	**EP3**	**The student independently plans and consistently improves his language skills, continues the process of training and self-improvement until the end of his life.**	**K_U08**
social competences	**1**	**EP4**	**He is aware of his linguistic competence and the usefulness of his knowledge in professional work, therefore when he cannot solve the problem himself, he is ready to use expert consultations**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Spanish language (język hiszpański)**			
Format of instruction: **lektorat**			

1. **words and phrases about everyday life**	3	10	0
2. **work with specialist material**	3	18	0
3. **test of acquired skills**	3	2	0
4. **exercises in speaking and reading**	4	16	0
5. **language communication**	4	12	0
6. **control test**	4	2	0
7. **professional vocabulary and phrases**	5	16	0
8. **exercises in speaking, listening, reading and writing**	5	12	0
9. **test**	5	2	0
10. **reading and speaking exercises**	6	20	0
11. **listening and writing exercises**	6	8	0
12. **knowledge test**	6	2	0

Modes of delivery	**Classes improving all language competences: reading, listening, speaking and writing relating to the vocabulary and topics in the scope proposed in the foreign language textbook and additional text materials; classes related to the lexical and grammatical material contained in the textbook and resulting from the learning objectives; basics of pronunciation and spelling; creating statements on various topics**
	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 USTNY	**EP1,EP2,EP3**
	SPRAWDZIAN	**EP1**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP3**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,EP3,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	**semester 3, 4, 5: the condition for passing the exercises is to obtain a positive grade in tests, written assignments;** **semester 6: the condition for passing the exercises is obtaining a positive grade in the oral exam**
	Grade calculation principles
	semesters: 3, 4, 5: the final grade is the grade obtained for completing classes **semester 6: the exam grade is the final grade for the subject**

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Spanish language (język hiszpański)		Ważona	
	3	Spanish language (język hiszpański) [lektorat]	zaliczenie z oceną		1,00
	4	Spanish language (język hiszpański)		Ważona	
	4	Spanish language (język hiszpański) [lektorat]	zaliczenie z oceną		1,00
	5	Spanish language (język hiszpański)		Ważona	
	5	Spanish language (język hiszpański) [lektorat]	zaliczenie z oceną		1,00
	6	Spanish language (język hiszpański)		Ważona	
	6	Spanish language (język hiszpański) [lektorat]	egzamin		1,00

Basic reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :

Supplementary reading	wg wyboru prowadzącego ustalana ze studentami/according to the teacher's choice, agreed with the students :

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**120**	**0**
Participation in test / exam	**5**	**0**
Preparation for contact hours	**60**	**0**
Private reading and studying	**15**	**0**
Participation in tutorials	**10**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**40**	**0**
TOTAL workload	**250**	
ECTS credits	**10**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Statistics (statystyka) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_12S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	conversation	30	0	pg	2
Total			**30**			**2**

Course / module coordinator	**dr hab. ŁUKASZ JANKOWIAK**
Course instructor	**dr hab. ŁUKASZ JANKOWIAK**
Course / module objectives	**The aim is to introduce a number of basic concepts and techniques that should allow the student to get started with practical statistics. Acquiring practical skills to use the statistical software R. The student is ready to solve environmental problems using statistical analyzes.**
Prerequisites	**Knowledge of the mathematics at the secondary school grade**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Student knows the basic statistical methods used in hydrobiology**	**K_W02**
	2	**EP2**	**knows and understands the basics of mathematical and statistical methods and information technologies that enable the proper description and analysis of processes at various levels of the organization of the living world**	**K_W08**
skills	**1**	**EP3**	**Student can interpret the obtained statistical results and draw conclusions based on their knowledge**	**K_U04**
social competences	**1**	**EP4**	**Student is aware of limitation of statistical solutions and the limitation of obtained data to describing biological complexity**	**K_K01 K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Statistics (statystyka)**			
Format of instruction: **conversation**			
1. **R language essentials**	3	2	0
2. **Probability and distributions**	3	2	0
3. **One- and two-sample tests**	3	2	0
4. **Regression and correlation**	3	2	0
5. **ANOVA and Kruskal-Wallis**	3	2	0
6. **Tabular data**	3	2	0
7. **Power and the computation of sample size**	3	2	0

8. **Limitations of Linear Regression Applied on Ecological Data**	3	2	0
9. **Things Are Not Always Linear; Additive Modelling**	3	2	0
10. **Mixed Effects Modelling**	3	2	0
11. **GLM and GAM for Count Data**	3	3	0
12. **GLM and GAM for Absence-Presence and Proportional Data**	3	2	0
13. **Zero-Truncated and Zero-Inflated Models for Count Data**	3	2	0
14. **Ordination analysis**	3	3	0

Modes of delivery	**the examples of statistical solutions, multimedia slides, using of R statistical software**	
	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**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP1,EP2,EP3,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	**The basis of the credit is the positive grade obtained by the student in the practical test of R software use to solve the given problem.**	
	Grade calculation principles	
	The final grade for the course is the grade from discussion classes .	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	Statistics (statystyka)		Ważona	
	3	Statistics (statystyka) [konwersatorium]	zaliczenie z oceną		1,00

Basic reading	Robert Stinerock (2022): Statistics with R: A Beginner's Guide Second Edition, SAGE Publications Ltd
	Thulin, M. (2024): Modern Statistics with R, CRC Press
	W. N. Venables, D. M. Smith and the R Development Core Team (2024): An Introduction to R. Notes on R: A Programming Environment for Data Analysis and Graphics, R Development Core Team.
Supplementary reading	Alain F. Zuur, Elena N. Ieno, Neil J. Walker, Anatoly A. Saveliev, Graham M. Smith (2011): Mixed Effects Models and Extensions in Ecology with R, Springer, NY, USA
	Peter Dalgaaard (2008): Introductory Statistics with R, Springer, Denmark

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**6**	**0**
Private reading and studying	**3**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**7**	**0**

TOTAL workload	**50**
ECTS credits	**2**

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **University-wide lecture (wykład ogólnouczelniany) [moduł]**	
Course title: **subject (przedmiot) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3450_4S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 4 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	4	lecture	15	0	pg	1
Total			**15**			**1**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**The aim is to familiarize students with research issues in a specific field and discipline and to encourage the student to research.**
Prerequisites	**there are ' no requirements**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows and understands the most important scientific problems included in the lecture topics**	
skills	**1**	**EP2**	**The student is able to use terminology appropriate to the issues of the lecture**	
	2	**EP3**	**The student can independently prepare a short text on the basis of the literature.**	
social competences	**1**	**EP4**	**The student is ready for independent thinking and critical evaluation of his knowledge level.**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **subject (przedmiot)**			
Format of instruction: **lecture**			
1. **Presentation of lecture topics and course credit requirements.**	4	2	0
2. **Providing the literature and sources used in the lecture, supplemental literature.**	4	2	0
3. **Presentation of specific issues within the content of the monograph lecture**	4	10	0
4. **Summary and final conclusions.**	4	1	0

Modes of delivery	**Lecture**	
	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
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP2,EP3,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	**Positive evaluation of written work.**	
	Grade calculation principles	
	The final grade for the course is the grade from the lecture.	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	subject (przedmiot)		Ważona	
	4	subject (przedmiot) [wykład]	zaliczenie z oceną		1,00

Basic reading	Literatura zostanie podana na wykładzie zgodnie z jego tematyką/Selected literature items indicated to the student :
Supplementary reading	Wybrane pozycje wskazane studentowi/ Selected literature items indicated to the student :

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**3**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**5**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**25**	
ECTS credits	**1**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **University-wide lecture (wykład ogólnouczelniany) [moduł]**	
Course title: **subject (przedmiot) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3450_3S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 3 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
2	3	lecture	15	0	pg	1
Total			**15**			**1**

Course / module coordinator	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course instructor	**prof. dr hab. inż. ROBERT CZERNIAWSKI**
Course / module objectives	**The aim is to familiarize students with research issues in a specific field and discipline and to encourage the student to research.**
Prerequisites	**there are ' no requirements**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**The student knows and understands the most important scientific problems included in the lecture topics**	
skills	**1**	**EP2**	**The student is able to use terminology appropriate to the issues of the lecture**	
	2	**EP3**	**The student can independently prepare a short text on the basis of the literature**	
social competences	**1**	**EP4**	**The student is ready for independent thinking and critical evaluation of his knowledge level**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **subject (przedmiot)**			
Format of instruction: **lecture**			
1. **Presentation of lecture topics and course credit requirements.**	3	2	0
2. **Providing the literature and sources used in the lecture, supplemental literature.**	3	2	0
3. **Presentation of specific issues within the content of the monograph lecture**	3	10	0
4. **Summary and final conclusions.**	3	1	0

Modes of delivery	**Lecture**	
	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
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP2,EP3,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	**Positive evaluation of written work**	
	Grade calculation principles	
	The final grade for the course is the grade from the lecture	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	3	subject (przedmiot)		Ważona	
	3	subject (przedmiot) [wykład]	zaliczenie z oceną		1,00

Basic reading	Literatura zostanie podana na wykładzie zgodnie z jego tematyką/Selected literature items indicated to the student :
Supplementary reading	Wybrane pozycje wskazane studentowi/Literature will be provided in the lecture according to the topic :

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**0**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**3**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**5**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**25**	
ECTS credits	**1**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Supercinema: Film Philosophy in the Digital Age (Supercinema: filozofia kina w erze cyfrowej) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3443_12S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **elective**	Language of instruction: **semester: 6 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
3	6	lecture	15	0	pg	2
Total			**15**			**2**

Course / module coordinator	**dr hab. BEATA ZAWADKA**
Course instructor	**dr hab. BEATA ZAWADKA**
Course / module objectives	**the course offers the theoretical frames helping participants understand how space, time, characters and our receptions of these concepts function in the digital cinema**
Prerequisites	**curiosity of the world**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Participants know and name the concepts of space, time etc. present in the analogue and digital cinema, and understand the ethical imperative/s behind them**	
skills	**1**	**EP2**	**Participants are capable of recognising the dependencies between the digital and analogue cinema**	
social competences	**1**	**EP3**	**Participants are ready to discuss the questions vital for the digital cinema and use the knowledge of the medium transmedially**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Supercinema: Film Philosophy in the Digital Age (Supercinema: filozofia kina w erze cyfrowej)**			
Format of instruction: **lecture**			
1. **null**	6	4	0
2. **null**	6	3	0
3. **null**	6	2	0
4. **null**	6	2	0
5. **null**	6	4	0

Modes of delivery	**Audiovisual presentation, lecture, dicussion**	
	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**
	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 grade awarded for the final test is the grade awarded for the course**	
	Grade calculation principles	
	Grade calculation principles: final test 30 pkt, pass 60% **The final grade for the course is the lecture grade**	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	6	Supercinema: Film Philosophy in the Digital Age (Supercinema: filozofia kina w erze cyfrowej)		Ważona	
	6	Supercinema: Film Philosophy in the Digital Age (Supercinema: filozofia kina w erze cyfrowej) [wykład]	zaliczenie z oceną		1,00

Basic reading	Nicholas Rombes (2017): Cinema in the Digital Age, Wallflower Press
	Thomas Elsaesser, Malte Hagener (2015): Film Theory. An Introduction Through the Senses, Routledge
Supplementary reading	Stephen Prince (2019): Digital Cinema, Rutgers UP

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**15**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**14**	**0**
Participation in tutorials	**6**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**13**	**0**
TOTAL workload	**50**	
ECTS credits	**2**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Blok III [moduł]**	
Course title: **Sustainable development (zrównoważony rozwój) (KIERUNKOWE)**	Course code: **SPR201AIJ3432_29S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	conversation	15	0	pg	3
		lecture	15	0	pg	
Total			**30**			**3**

Course / module coordinator	**dr IZABELA SZAMREJ-BARAN**
Course instructor	**dr IZABELA SZAMREJ-BARAN**
Course / module objectives	**The aim is to acquire by students the knowledge of sustainable development and environmental policy, the ability to use methods and tools in the implementation of the SD goals, preparation to participate in social projects in the field of environmental protection and sustainable development.**
Prerequisites	**No prerequisites.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**Student knows the nature, objectives, functions, principles of Sustainable Development and its relationship with economy**	**K_W01**
	2	**EP2**	**Student knows the mechanisms and instruments for implementing SD goals and of indicators and ways of measuring its effectiveness.**	**K_W10**
skills	**1**	**EP3**	**Student identifies and interprets the links between the environment, society and the economy in the context of environmental policy and Sustainable Development**	**K_U02**
social competences	**1**	**EP5**	**integrates knowledge from different fields of economics in order to promote environmental policy and Sustainable Development**	**K_K02 K_K03**
	2	**EP6**	**Student has understanding/awareness of the need to protect the environment. Willingness to participate in the preparation of social projects in the field of sustainable development.**	**K_K04 K_K05**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Sustainable development (zrównoważony rozwój)**			
Format of instruction: **lecture**			
1. **The role of economics in environmental policy and sustainable development.**	5	3	0

2. **Natural environment as the basis of economic processes (environment and its functions)**	5	2	0
3. **Sustainable development - basic concepts, genesis and principles of sustainable development. Sustainable Development Goals (SDGs)**	5	4	0
4. **Sustainable development measurement system**	5	3	0
5. **Circular economy**	5	2	0
6. **Course revision**	5	1	0
Format of instruction: **conversation**			
1. **Ecosystem services. Environment valuation**	5	2	0
2. **Environmental pollution and degradation**	5	4	0
3. **UN and EU sustainable development measurement system. Eurostat and UN databases.**	5	4	0
4. **The role of "good practices" in the evolution of the concept of sustainable development**	5	2	0
5. **Zero waste approach**	5	2	0
6. **Course revision**	5	1	0

Modes of delivery	**- informative lecture** **- multimedia presentations** **- case study** **- group work** **- text / film analysis with 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
	PREZENTACJA	**EP1,EP2,EP3,EP5**
	PROJEKT	**EP1,EP3,EP5,EP6**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP3,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	**Classes: the student receives a credit when he/she prepares and gives a presentation and is active during the classes** **Lectures: a student gets a credit when he/she prepares and presents a project.** **Classes: 70% grade from presentation, 30% grade from activity in class** **Lectures: grade from project.**
	Grade calculation principles
	The final assessment will be calculated as the arithmetic mean of the classes and lecture

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Sustainable development (zrównoważony rozwój)		Arytmetyczna	
	5	Sustainable development (zrównoważony rozwój) [konwersatorium]	zaliczenie z oceną		
	5	Sustainable development (zrównoważony rozwój) [wykład]	zaliczenie z oceną		

Basic reading	: Hussen Ahmed (2018): Principles of Environmental Economics and Sustainability. An Integrated Economic and Ecological Approach, Taylor & Francis Inc
	Tietenberg, Thomas H., Lewis, Lynne (2018): Environmental and Natural Resource Economics, Taylor & Francis Ltd
	Atkinson G., Dietz S., Neumayer E. (2010): Handbook of Sustainable Development, Edward Elgar Publishing
	Barry C. Field, Martha K. Field (2016): Environmental Economics An Introduction, Published by McGraw-Hill, New York
	John Blewitt (2018): Understanding Sustainable Development, Routledge, New Jork
	Julie A. Kerr (2018): Introduction to Energy and Climate Developing a Sustainable Environment, Taylor & Francis Group
	(2021): Environmental and Resource Economics The Official Journal of the European Association of Environmental and Resource Economists, European Association of Environmental and Resource Economists
Supplementary reading	Folmer H., Gabel L. (Eds) (2001): Principles of Environmental and Resource Economics: A Guide for Students and Decision-Makers, 2nd edition, Edward Elgar, Cheltenham; Northampton MA
	Hanley N., Barbier E. B. (2010): Pricing Nature, Edward Elgar
	Hein L. (2010): The Economics of Ecosystem, Edward Elgar Publishing
	Kryk B. (red.) (2012): Gospodarowanie i zarządzanie środowiskiem , Press University of Szczecin
	M.M. Khan; M.R. Islam (2017): Zero Waste Engineering. A New Era of Sustainable Technology Development, John Wiley & Sons, Inc, New Jersey
	Stiglitz J. E., Sen A., Fitoussi J.P. (2013): Report by the Commission on the Measurement of Economic Performance and Social Progress, www.stiglitz-sen-fitoussi.fr
	Thematic reports from ministries and research institutes (eg World Bank, World Economic Forum, the World Resources Institute, United Nations Institute for Sustainable Development).
	www.europa-lex.europa.eu
	www.eurostat
	www.foe.co.uk
	www.onz.org.pl/rozwój
	www.stat.gov.pl
	www.waterfootprint.org

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**10**	**0**
Private reading and studying	**15**	**0**
Participation in tutorials	**3**	**0**
Preparation of project / essay / etc.	**5**	**0**
Preparation for test / exam	**10**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Sustainable Finance (zrównoważone finanse) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3432_8S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**prof. dr hab. MAGDALENA ZIOŁO**
Course instructor	**prof. dr hab. MAGDALENA ZIOŁO**
Course / module objectives	**To familiarize students with the concept, evolution and assumptions of sustainable finance as well as models and instruments of sustainable finance. Developing the ability to conduct analyzes in the area of sustainable finance and social competences necessary in the area of sustainable finance specified in the course outcomes**
Prerequisites	**Knowledge of economics, finance, management and accounting**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**students know in-depth the concept, evolution of instruments and conditions for the development of sustainable finance**	
	2	**EP2**	**students know in-depth the typology and methodology of sustainable finance**	
skills	**1**	**EP3**	**students are able to analyze and diagnose in a comprehensive manner bottlenecks in the concept and strategy of sustainable finance in public and private entities**	
	2	**EP4**	**students are able to propose and recommend changes in the concept and strategy of sustainable finance**	
social competences	**1**	**EP5**	**students are ready to critically evaluate their knowledge in the field of sustainable finance**	
	2	**EP6**	**students are ready to critically evaluate achievements in the field of sustainable finance**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Sustainable Finance (zrównoważone finanse)**			
Format of instruction: **lecture**			
1. **null**	5	4	0
2. **null**	5	4	0
3. **null**	5	2	0

4. **null**	5	2	0
5. **null**	5	2	0
6. **null**	5	2	0
7. **null**	5	2	0
8. **null**	5	2	0
9. **null**	5	2	0
10. **null**	5	2	0
11. **null**	5	2	0
12. **null**	5	2	0
13. **null**	5	2	0

Modes of delivery	**lecture**	
	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,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	**Written test, 20 questions, multiply choice. To obtain a satisfactory grade in the lecture, a student should achieve 60% of the possible points**	
	Grade calculation principles	
	The final grade for the course is the lecture grade	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Sustainable Finance (zrównoważone finanse)		Ważona	
	5	Sustainable Finance (zrównoważone finanse) [wykład]	zaliczenie z oceną		1,00

Basic reading	Chrysovalantis Gaganis, Fotios Pasiouras, Menelaos Tasiou, Constantin Zopounidis (2023): Sustainable Finance and ESG: Risk, Management, Regulations, and Implications for Financial Institutions, Palgrave McMillan
	Editor M.Ziolo (2021): Finance and Sustainable Development: Designing Sustainable Financial Systems, Routledge
	Saiful Anwar, Ega Rusanti, Mochlasin (2023): Contemporary issues in sustainable finance: Exploring performance, impact measurement and financial inclusion, Palgrave McMillan
Supplementary reading	Güler Aras (2015): Sustainable Markets for Sustainable Business: A Global Perspective for Business and Financial Markets (Finance, Governance and Sustainability), Routledge

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**0**	**0**
Private reading and studying	**17**	**0**
Participation in tutorials	**6**	**0**

Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**20**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Unit: **Lecture in the humanities or the social sciences [moduł]**	
Course title: **Sustainable Tourism (turystyka zrównoważona) (OGÓLNOUCZELNIANE)**	Course code: **SPR201AIJ3434_9S**
Name of field of study: **Hydrobiology**	
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	including e-learning	Type of credit	ECTS
3	5	lecture	30	0	pg	3
Total			**30**			**3**

Course / module coordinator	**dr TOMASZ DUDA**
Course instructor	**dr TOMASZ DUDA**
Course / module objectives	**Learn about sustainable leisure and travel activities; become familiar with the principles of sustainable tourism and acquire knowledge about the possibilities of sustainable tourism space design acquiring the ability to classify tourism activities for the sustainable development of the region; developing readiness to undertake sustainable tourism activities**
Prerequisites	**Basic knowledge of geography and biology, as well as general knowledge of social and environmental problems in the world**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**knows and understands to an advanced degree the theories and methods concerning the development of sustainable tourism in order to understand the functioning of the contemporary tourism space**	
	2	**EP2**	**has knowledge of research methods and their implementation in the context of sustainable space research and tourism**	
	3	**EP3**	**has an advanced knowledge of the principles and mechanisms for acquiring knowledge about tourism sustainable tourism - both in a regional as well as a trans-regional and cross-border**	
	4	**EP4**	**has advanced knowledge of green infrastructure and sustainable tourism development tourism development at local and regional level**	
skills	**1**	**EP5**	**can describe, explain and interpret phenomena in the field of sustainable tourism and activities for the development of a sustainable tourism space development**	
	2	**EP6**	**can select and use appropriate research methods and tools to solve problems related to the sustainable development of space tourism space development**	
	3	**EP7**	**is able to interpret and present the connections between phenomena in the tourism space in the context of in the context of sustainable actions and activities**	

social competences	**1**	**EP8**	**is ready to critically appraise the tourism space in the context of its sustainable development**	
	2	**EP9**	**is ready to recognise the importance of knowledge and practice in solving problems in the field of tourism sustainable**	

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Sustainable Tourism (turystyka zrównoważona)**			
Format of instruction: **lecture**			
1. **null**	5	4	0
2. **null**	5	4	0
3. **null**	5	8	0
4. **null**	5	8	0
5. **null**	5	4	0
6. **null**	5	2	0

Modes of delivery	**Conversation lecture combined with multimedia presentation. Group work combined with 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
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP2,EP3,EP4,EP5,EP6,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	**The grade is the arithmetic mean of the discussion part and the credit work**	
	Grade calculation principles	
	The final grade for the course is the lecture grade	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	5	Sustainable Tourism (turystyka zrównoważona)		Ważona	
	5	Sustainable Tourism (turystyka zrównoważona) [wykład]	zaliczenie z oceną		1,00

Basic reading	Kowalczyk A. (2020): Turystyka zrównoważona, Wydawnictwo Naukowe PWN, Warszawa
Supplementary reading	Meyer B., Gardzińska A., Sawińska A. (2023): Współczesna turystyka. Środowisko-człowiek-gospodarka, Uniwersytet Szczeciński, Szczecin
	Trono A. (2022): Sustainable Tourism and Cultural Routes in the Ionian and Adriatic Regions, Universita, Roma

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**0**	**0**

Private reading and studying	**14**	**0**
Participation in tutorials	**9**	**0**
Preparation of project / essay / etc.	**20**	**0**
Preparation for test / exam	**0**	**0**
TOTAL workload	**75**	
ECTS credits	**3**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**	
Course title: **Water chemistry (chemia wody) (PODSTAWOWE)**	Course code: **SPR201AIJ3450_4S**
Name of field of study: **Hydrobiology**	
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic** / Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 1 - english language**

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	1	laboratory	30	0	pg	6
		lecture	30	0	e	
Total			**60**			**6**

Course / module coordinator	**dr TYMOTEUSZ MILLER**
Course instructor	**dr TYMOTEUSZ MILLER**
Course / module objectives	**Acquainting with various types of natural waters and chemical biohydrogeochemical processes taking place in the aquatic environment. Acquiring the ability to work in a water chemistry laboratory with particular emphasis on mastering the ability to conduct analyzes.**
Prerequisites	**The basics of knowledge from general chemistry, analytical chemistry, organic chemistry.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**the student knows and understands selected concepts, definitions, laws, phenomena and relationships between them and is able to explain them based on basic general knowledge in the field of exact and natural sciences**	**K_W01**
	2	**EP2**	**the student knows and understands the chemical and physical processes necessary to understand the basic laws and natural phenomena**	**K_W07**
skills	**1**	**EP3**	**the student is able to carry out experiments, observations and measurements using appropriate research tools and methods, as well as interpret the obtained results and draw conclusions based on their knowledge**	**K_U04**
	2	**EP4**	**the student is able to plan and organize work independently and in a team in order to effectively perform specific tasks**	**K_U07**
social competences	**1**	**EP5**	**the student is aware of the responsibility for the entrusted equipment, his own work and obtained.results of experiments**	**K_K01**
	2	**EP6**	**the student is ready to work independently and as a team, thinking and acting in an entrepreneurial way**	**K_K04**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Water chemistry (chemia wody)**			
Format of instruction: **lecture**			

1. **Hydrosphere.**	1	2	0
2. **Natural water as a solution and coloid system.**	1	2	0
3. **Nomenclature of inorganic compounds.**	1	2	0
4. **Complex compounds in waters.**	1	2	0
5. **Biohydrogeochemical cycles of selected chemical elements (C, Ca, Cu, Hg, N, P).**	1	2	0
6. **Biogenic substances. Suspended and dissolved organic matter. Humic substances.**	1	2	0
7. **Organic substances.**	1	4	0
8. **Chemistry of sugars, lipids, amino-acids and proteins.**	1	2	0
9. **Instrumental methods for the quantification of chemical compounds.**	1	10	0
10. **The impact of human activity on water phenomena and the water cycle in nature. Water pollution.**	1	2	0
Format of instruction: **laboratory**			
1. **Principles of work in the water chemistry laboratory.**	1	2	0
2. **Water buffer capacity.**	1	4	0
3. **Oxygenation of waters.**	1	4	0
4. **Gravimetric and volume klassical analysis.**	1	4	0
5. **Organic matter.**	1	4	0
6. **Biogenic substances.**	1	6	0
7. **Quantification of selected chemical compounds by instrumental methods.**	1	4	0
8. **Water quality estimation.**	1	2	0

Modes of delivery	**multimedia presentation, performing experiments in group's of two persons**	
	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**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**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	**Exam: minimum 50% of correct answers during the exam lead to a positive grade for this exam** **Laboratory exercises: arithmetic mean calculated on the basis of partial assessments obtained during the classes**	
	Grade calculation principles	
	The final grade is the arithmetic mean of the assessment obtained from the exam and from the laboratory classes in a 1: 1 ratio	

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	1	Water chemistry (chemia wody)		Nieobliczana	
	1	Water chemistry (chemia wody) [wykład]	egzamin		
	1	Water chemistry (chemia wody) [laboratorium]	zaliczenie z oceną		

Basic reading	Brezonik P.L., Arnold W.A. (2022): Water Chemistry: The Chemical Processes and Composition of Natural and Engineered Aquatic Systems, Oxford University Press , New York
	Sharma A., Deshwal B.R. (2021): Water Chemistry and Environmental Science, walnutpublication.com

Supplementary reading	Caron S. (2020): Practical Synthetic Organic Chemistry - Reactions, Principles, and Techniques, 2nd Edition, John Wiley and Sons Ltd
	Pfennig B.W. (2022): Principles of Inorganic Chemistry, 2nd Edition, John Wiley and Sons Ltd

STUDENT WORKLOAD		
	No. of hours	
		including e-learning
Contact hours	**60**	**0**
Participation in test / exam	**2**	**0**
Preparation for contact hours	**20**	**0**
Private reading and studying	**20**	**0**
Participation in tutorials	**20**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**28**	**0**
TOTAL workload	**150**	
ECTS credits	**6**	

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Water physics (fizyka wody) (PODSTAWOWE)**		Course code: **SPR201AIJ3445_5S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	Language of instruction: **semester: 2 - english language**	

Year	Semester	Form of instruction	No. of hours	including e-learning	Type of credit	ECTS
1	2	conversation	15	0	pg	2
		lecture	15	0	pg	
Total			**30**			**2**

Course / module coordinator	**prof. dr hab. EWA SZUSZKIEWICZ**
Course instructor	**dr hab. ADAM BALCERZAK**
Course / module objectives	**Intoduction to the physical description of phenomena involving water. Introduction to qualitative and quantitative description of phenomena involving water.**
Prerequisites	**Knowledge of physics and mathematics at the high school level.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	1	EP1	**Student knows the basic laws governing flow of water.**	**K_W01 K_W03 K_W07**
	2	EP2	**Student knows the basic facts about water thermodynamics.**	**K_W01 K_W07**
	3	EP3	**Student knows and understand the physical description of the phenomena involving the water surface.**	**K_W01 K_W07**
skills	1	EP4	**The student is able to perform experiments, including measurements and analyzes of water flow in highly symmetrical configurations.**	**K_U04**
	2	EP5	**The student is able to solve complex and unusual problems that are necessary to describe selected phenomena and physical processes in waters**	**K_U01**
social competences	1	EP6	**Student undertakes to solve the physical problems concerning phenomena involving water.**	**K_K02**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Water physics (fizyka wody)**			
Format of instruction: **lecture**			
1. **Physical quantities describing the movement of water. Basic properties of water. Phenomena of mass, momentum and energy transport in fluids.**	2	3	0
2. **Water equations (Lagrange's method and Euler's method). Potential and vortical motion . Basic fluid dynamics equations, Navier - Stokes equations.**	2	3	0

3. **Pollution transfer equations. Advection - diffusion equations, dispersion of pollutants in rivers and canals. Water flow in rivers and canals.**	2	4	0
4. **Basic concepts and laws of thermodynamics. Thermodynamics of water. Anomalous temperature expansion of water.**	2	3	0
5. **Surface phenomena involving water.**	2	2	0
Format of instruction: **conversation**			
1. **Quantitative analysis of selected phenomena involving water discussed in the lecture.**	2	15	0

Modes of delivery	**The lecture which uses blackboard. During the seminar, selected students present solutions to the specific problems.**
	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,EP5,EP6**
	SPRAWDZIAN	**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	**Passing the lecture on the basis of the passed test. Passing the discussion classes on the basis of the passed test.**
	Grade calculation principles
	The final grade for the course is the average of grades from lectures and discussion classes in a 1: 1 ratio.

Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	2	Water physics (fizyka wody)		Arytmetyczna	
	2	Water physics (fizyka wody) [wykład]	zaliczenie z oceną		
	2	Water physics (fizyka wody) [konwersatorium]	zaliczenie z oceną		

Basic reading	David Halliday, Robert Resnick, Jearl Walker (2015): Fundamentals of Physics Extended, Tom 1-5, PWN, Warszawa
	G. K. Batchelor (2012): An Introduction to Fluid Dynamics, Cambridge University Press
	Hugh D. Young, Roger A. Freedman, Tom Sandin, A. Lewis Ford (2016): University Physics With Modern Physics, Pearson Education Limited
Supplementary reading	L. D. Landau, E. M. Lifshitz (1987): Fluid Mechanics: Volume
	Erik R. Christensen, An Li (2014): Physical and Chemical Processes in the Aquatic Environment, Wiley

STUDENT WORKLOAD

	No. of hours	including e-learning
Contact hours	**30**	**0**
Participation in test / exam	**4**	**0**
Preparation for contact hours	**4**	**0**
Private reading and studying	**4**	**0**
Participation in tutorials	**2**	**0**
Preparation of project / essay / etc.	**0**	**0**
Preparation for test / exam	**6**	**0**

TOTAL workload	**50**
ECTS credits	**2**

COURSE SYLLABUS AND SPECIFICATION

Curriculum title: **USSPR-H-O-I-S-25/26Z**		
Course title: **Water resource management (gospodarowanie zasobami wodnymi) (KIERUNKOWE)**		Course code: **SPR201AIJ3450_26S**
Name of field of study: **Hydrobiology**		
Mode and cycle of study: **first-degree, full - time**	Profile of study: **general academic**	Specialty:
Course / module status **obligatory**	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	15	0	pg	5
		lecture	15	0	pg	
		zajęcia terenowe	15	0	pg	
Total			**45**			**5**

Course / module coordinator	**dr hab. ŁUKASZ SŁUGOCKI**
Course instructor	**dr hab. ŁUKASZ SŁUGOCKI**
Course / module objectives	**The aim of the course is to familiarize students with issues related to water management. After completing the course, the student is able to define threats to water resources, know the methods of their protection and treatment, understand the causes of floods, and know methods of preventing their negative effects. The student is ready to take conscious actions in the field of rational use and shaping of water resources.**
Prerequisites	**Basic knowledge of geography, chemistry, physics, and biology.**

LEARNING OUTCOMES

Category	No.	Code	Description	Ref. to programme benchmarks
knowledge	**1**	**EP1**	**knows and understands at an advanced level selected facts, concepts and phenomena related to water resources management**	**K_W01**
	2	**EP2**	**knows and understands the basic research methods enabling the effective management of water resources**	**K_W02**
	3	**EP3**	**knows the relationship of hydrobiology with other natural disciplines, enabling the understanding of the principles of water resources management**	**K_W03**
	4	**EP4**	**knows and understands at an advanced level the current directions of water resources management**	**K_W05**
skills	**1**	**EP5**	**is able to use the acquired knowledge to solve complex and unusual problems related to water management**	**K_U01**
	2	**EP6**	**is able to properly select and use sources of scientific information, critically analyzing them**	**K_U02**
	3	**EP7**	**is able to properly select and apply appropriate research methods and tools as well as present the results of experiments or observations and conclusions, including the analysis of professional literature**	**K_U03**
	4	**EP8**	**is able to carry out experiments, observations and measurements using appropriate tools and research methods, as well as interpret the obtained results and draw conclusions based on their knowledge**	**K_U04**

social competences	**1**	**EP9**	**is ready to disseminate models of proper conduct in the work environment and outside it, make independent decisions, critically evaluate the activities of its own and of teams and organizations that affect water management**	**K_K01**
	2	**EP10**	**is ready to critically assess the knowledge and content received and to recognize the importance of general and specialist knowledge in the field of hydrobiology in solving problems related to water resources management**	**K_K02**
	3	**EP11**	**is ready to fulfill social obligations, including co-organizing activities for rational water management**	**K_K03**

CONTENT	Semester	No. of hours	including e-learning
Subject title: **Water resource management (gospodarowanie zasobami wodnymi)**			
Format of instruction: **lecture**			
1. **Water resources (surface water, underground water, drainage basin), threats to water resources (changes in the amount of water resources), sources of water pollution and changes in the water quality.**	4	2	0
2. **The use of water, its use in economy, tools for the protection of water resources.**	4	2	0
3. **Actions to maintain good water status (reclamation, revitalization, renaturation, ecohydrology).**	4	2	0
4. **Treatment plants and other installations used in water restoration.**	4	2	0
5. **Use of waters in aquaculture, fisheries and angling.**	4	2	0
6. **Flood prevention and water transport.**	4	2	0
7. **Water conflicts.**	4	2	0
8. **Climate changes and water resources.**	4	1	0
Format of instruction: **conversation**			
1. **Interpretation of the results of water status assessment (trophic indexes; river, lake, and catchment indicators) for the purposes of making decisions in water resources management**	4	2	0
2. **Calculation of the effective dose of coagulant for lake reclamation, calculation of the amount of fish for restocking for effective biomanipulation**	4	2	0
3. **Water for recreation; the effects of excessive eutrophication; observations of cyanobacteria, including potentially toxic species; blooms of cyanobacteria in bathing waters.**	4	2	0
4. **Observations of organisms living in the activated sludge, evaluation of the activated sludge condition.**	4	4	0
5. **An experiment with the use of a coagulant and sorption materials in water restoration.**	4	5	0
Format of instruction: **zajęcia terenowe**			
1. **Examples of water use and water resource management.**	4	15	0

Modes of delivery	**microscopic observation, drawings, multimedia presentation, report**	
	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**
	PRACA PISEMNA/ ESEJ/ RECENZJA	**EP1,EP2,EP3,EP4,EP5,EP6**
	ZAJĘCIA PRAKTYCZNE (WERYFIKACJA POPRZEZ OBSERWACJĘ)	**EP10,EP11,EP5,EP6,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	**The condition for obtaining credit is a positive grade obtained during the tutorials and a test verifying the mastery of the knowledge passed to the student in the course of the lectures and passing the field report.**				
	Grade calculation principles				
	Arithmetic mean of practical classes, lectures and field classes				
Final grade calculation method	Sem.	Course	Type of credit	Grade calc. method	Weight for the average
	4	Water resource management (gospodarowanie zasobami wodnymi)		Arytmetyczna	
	4	Water resource management (gospodarowanie zasobami wodnymi) [zajęcia terenowe]	zaliczenie z oceną		
	4	Water resource management (gospodarowanie zasobami wodnymi) [konwersatorium]	zaliczenie z oceną		
	4	Water resource management (gospodarowanie zasobami wodnymi) [wykład]	zaliczenie z oceną		
Basic reading	Neil S. Grigg (2016): Integrated Water Resource Management, Palgrave Macmillan, London				
Supplementary reading					

STUDENT WORKLOAD

	No. of hours	
		including e-learning
Contact hours	**45**	**0**
Participation in test / exam	**1**	**0**
Preparation for contact hours	**35**	**0**
Private reading and studying	**15**	**0**
Participation in tutorials	**15**	**0**
Preparation of project / essay / etc.	**2**	**0**
Preparation for test / exam	**12**	**0**
TOTAL workload	**125**	
ECTS credits	**5**	