

Module of classes:

**AQUATIC INVERTEBRATES**

ECTS	3
Status	complementary
Form of final credit	credit unrated
Prerequisites	knowledge and skills in zoology and ecology

**Field of study:**

**ZOOTECHNICS**

Profile of study	General-academic
The code of the form of study and the level of study	bachelor
Semester of study	summer
Language of study	English

**The leading faculty, department and the lecturer of the module:**

Name of the competent unit for the coordinator	Faculty of Animal Sciences, Department of Nutrition, Biotechnology of Animals and Fisheries
Course coordinator	Assoc. Professor Jarosław Chyb

**Learning outcomes of the module/subject**

The code of the description component (symbol of the effect)	Description	Relation to (code)	
		field effect	discipline#

**KNOWLEDGE – the student knows and/or understands:**

AIN_W1	the most important morphological, anatomical and systematic features of invertebrate animals found in the aquatic environment and the functioning of physiological systems in invertebrate animals	ZOO1_W01 ZOO1_W04	RZ
AIN_W2	hydrobiological characteristics of various types of inland waters, the impact of physicochemical factors of the aquatic environment on aquatic organisms and phenomena associated with the circulation of matter and energy in the aquatic environment	ZOO1_W01	RZ

**SKILLS – the student can:**

AIN_U1	identify the most important species of aquatic invertebrates based on the features of morphological and anatomical structure	ZOO1_U01 ZOO1_U20	RZ
AIN_U2	correctly choose tools for collecting samples of planktonic, benthic and neustonic organisms	ZOO1_U01 ZOO1_U20	RZ
AIN_U3	prepare live and preserved invertebrate preparations for observation under a magnifying glass or microscope	ZOO1_U01 ZOO1_U20	RZ

**SOCIAL COMPETENCE- the student is ready to:**

AIN_K1	continuous deepening of knowledge about protozoa and invertebrates of the aquatic environment	ZOO1_K01	RZ
AIN_K2	critically assess the accuracy of species identification carried out by other students	ZOO1_K09	RZ

**Teaching content:**

<b>Lectures</b>		<b>15</b>	<b>hours</b>
	Invertebrate systematics		
	Morphology and anatomy of protozoans		
	Morphology and anatomy of sponges and cnidarians		
	Morphology and anatomy of flat worms		
	Morphology and anatomy of rotifers		
	Morphology and anatomy of round worms		

Morphology and anatomy of annelids  
 Morphology and anatomy of arthropods  
 Morphology and anatomy of mollusks  
 Types of inland waters  
 Hydrobiological characteristics of rivers and lakes  
 Influence of abiotic and biotic factors on aquatic invertebrates  
 Ecological groups of water organisms (plankton, benthos, neuston, periphyton)

Realized learning outcomes	<i>AIN_W1, AIN_W2, AIN_K1, AIN_K2</i>
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Verification methods and criteria of effects evaluation	<i>Test in the form of a test covering issues discussed during lectures; a positive grade should be given for at least 55% of the correct answers to the questions asked.</i>
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<b>Classes (laboratories)</b>	<b>15</b>	<b>hours</b>
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Subjects of the classes	Sampling techniques of planktonic and benthonic animals
	Characteristics and observations of protozoans
	Characteristics and observations of sponges and cnidarians
	Characteristics and observations of flat worms
	Characteristics and observations of rotifers
	Characteristics and observations of round worms
	Characteristics and observations of annelids
	Characteristics and observations of arthropods
	Characteristics and observations of molluscs
Practical training on identification of aquatic invertebrates	

Realized learning outcomes	<i>AIN_U1, AIN_U2, AIN_U3</i>
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Verification methods and criteria of effects evaluation	<i>Test in the form of a test covering issues discussed during classes; a positive grade should be given for at least for 55% of the correct answers to the questions asked.</i>
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<b>Seminars</b>	<b>...</b>	<b>hours</b>
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Subjects of the seminars	
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Realized learning outcomes	<i>code of learning outcomes of the seminars</i>
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Verification methods and criteria of effects evaluation	<i>together with participation in the final evaluation</i>
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**Literature:**

Basic	<i>Biology of Invertebrates – J. Pechenik. McGraw-Hill 2004</i>
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Supplementary	
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**Structure of learning outcomes:**

Dyscipline – animal husbandry and fishery (RZ)	3	ECTS*
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Dyscipline –...	...	ECTS*
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**Structure of student's activities:**

classes carried out with direct participation of the teacher	39	hours	1,6	ECTS*
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including: lectures	15	hours
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classes and seminars	15	hours
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consultations	6	hours
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participation in research	0	hours
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mandatory practices and internships	0	hours
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participation in the exam and credits	3	hours		
classes carried out with the use of e-learning	0	hours	0	ECTS*
student's own work	36	hours	1,4	ECTS*

) \* - Reported to the nearest to 0,1 ECTS, where 1 ECTS = 25-30 hours of classes

) # discipline code: RZ - zootechnics and fishery, PB - biological sciences