

Course name:**FISH REPRODUCTION**

ECTS	3
Course status	complementary
Course final assesement/evaluation of outcomes	credit unrated
Prerequisites	knowledge and skills in animal husbandry

Main field of study:**ZOOTECHNICS**

Profile of study	General-academic
The code of studies (education level)	SI (bachelor)
Semester of studies	summer
Language of instruction	English

Course offered by:

Name of faculty offering the course	Faculty of Animal Sciences
Name of department offering the course	Department of Nutrition, Biotechnology of Animals and Fisheries
Course coordinator	Assoc. Professor Jarosław Chyb

Learning outcomes of the course:

Symbol of outcome	Description of learning outcome	Reference to	
		main field of study outcomes	discipline#
KNOWLEDGE – student knows and/or understands:			
_W1	biology and physiology of fish sexual maturation	ZOO1_W04	RZ
_W2	methods of stimulating reproduction in the breeding of economically valuable species of fish	ZOO1_W14	RZ
SKILLS – student is able to:			
_U1	use the knowledge of fish morphology, anatomy and physiology to stimulate the reproduction of fish species valuable from the economic perspective	ZOO1_U16	RZ
_U2	use techniques for stimulation of sexual maturation and spawning in fish	ZOO1_U16	RZ
_U3	use methods of natural and controlled fish reproduction	ZOO1_U16	RZ
SOCIAL COMPETENCE- student is ready to:			
_K1	compliance with the rules of professional ethics; take responsibility for the welfare of animals and condition of the natural environment	ZOO1_K04	RZ
_K2	take actions leading to risk reduction and predict effects of human activities in the area of animal science and the environment of fish habitat	ZOO1_K05	RZ

Teaching contents:

Lectures	15	hours
Forms of fish sexuality		
Functioning of female fish reproductive system		

Topics of the lectures	Hormonal control of oogenesis
	Functioning of male fish reproductive system
	Hypophysiotropic role of fish hypothalamus
	GnRH and dopamine as the main factors controlling gonadotropin secretion
	Fish gonadotropins
	Fish reproduction strategies
	Factors determining the seasonality of fish reproduction
Fish pheromones in reproduction	

Accomplished learning outcomes	<u>W1, W2, K1, K2</u>
Verification methods, rules and criteria of outcome assessment	<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. The share of the lecture grade in the final grade is 50%.</i>

Classes	15	hours
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Topics of the classes	Methods of stimulation of artificial spawning
	Techniques of hormonal preparation administration
	Collection of pituitary glands, preparation of pituitary homogenate and procedure of hypophysation
	Application of GnRH analogues and antidopaminergic drugs to stimulate fish reproduction
	Methods of ovarian biopsy
	Determination of oocyte maturity stage
	Observation and evaluation of sperm motility
Spawning with the use of „dry method“	

Accomplished learning outcomes	<u>....U1,U2,U3</u>
Verification methods, rules and criteria of outcome assessment	<i>Test in the form of a test covering issues discussed during classes; a positive grade should be given for at least 55% of the correct answers to the questions asked. The share of the laboratory classes grade in the final grade is 50%.</i>

Seminars	...	hours
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Topics of the seminars	
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Accomplished learning outcomes	
Verification methods, rules and criteria of outcome assessment	

References:

Basic	<ol style="list-style-type: none"> 1. <i>Fish physiology. Reproduction.</i> Hoar W., Randall D., Donaldson E. Academic Press. Volume IX, Part A and B. 1983 2. <i>Hormones and reproduction of vertebrates. Fishes.</i> Norris D.O., Lopez K.H. Academic Press 2011
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Supplementary	1. Podhorec P., Gosiewski G., Ben Ammar I., Sokolowska-Mikolajczyk M., Chyb J., Milla S., Boryshpolets S., Rodina M., Linhartova Z., Biro D., Stejskal V., Kouril J. (2017). The effect of GnRHa with or without dopamine inhibitor on reproductive hormone levels and sperm quality in tench <i>Tinca tinca</i> . <i>Aquaculture</i> , 470, 91-94
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Structure of learning outcomes:

Discipline: # (provide appropriate symbol)	3	ECTS**
Discipline: # (provide appropriate symbol - if the course relates to more than one academic discipline)	...	ECTS**

Structure of student activities:

Contact hours	35	hours	1,5	ECTS**
including:				
lectures	15	hours		
classes and seminars	15	hours		
consultations	4	hours		
participation in research	...	hours		
mandatory traineeships	...	hours		
participation in examinations	1	hours		
e-learning	...	hours	...	ECTS**
student own work	35	hours	1,5	ECTS**

Syllabus valid from the academic year 2021/2022

*** where 10 hours of classes = 1 ECTS (in case of 15 h → 2 ECTS)**

** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes

academic discipline code: RZ - animal science and fishery, PB - biological sciences, etc.