Code of subject	M_WE SEM8 CHRYB
Field of study	Veterinary medicine
Name of the training module including the Polish name	Fish diseases
	Choroby ryb
Language of instruction	English
Type of the training module	obligatory
Level of the training module	Master level
Form of studies	Stationary
Location in the programme (year)	IV
Location in the programme (semester)	8
Number of ECTS credits with a division into contact/noncontact	3
Name and surname of the person in charge	Dr Krzysztof Puk
Unit offering the subject	Deparment of Fish Diseases and Biology
Aim of the module	The acquisition of knowledge and skills by students in the following fields: fish anatomy, fish immunology, correct diagnosis of fish diseases based on the clinical, pathological examinations and laboratory tests. During the course a student should acquire the theoretical knowledge and practical skills necessary to diagnose and treat diseases in fish. Student acquires both basic and detailed information and knowledge in the field of fish production based on traditional and intensive culture. Discussion of diseases, important from the economic and zoonotic point of view. Presentation of the principles of modern diagnostics, therapy and prevention of environmental, parasitic, bacterial, fungal and viral diseases. Awareness of sanitary and veterinary procedures in the case of diseases under an obligation to combat.
Learning outcomes	Konwledge:
	K1. Students knows the biology of infectious agents that cause fish diseases
	K2. Students knows the basics of diagnostics, treatment and prevention of fish diseases and the principles of ensuring fish welfare.
	Skills:
	S1. Students can take the case history / conduct examination, select and apply rational chemotherapy / prophylaxis.
	S2. Students can perform a fish dissection.
	Social competences:
	C1. Understands the need to expand knowledge and improve skills.
Preliminary and additional requirements	sequence requirements

Contents of the training module – a compact description of approx. 100 words.	Classes: 1 - Organization. Introduction to fish farming. (2 hours.) 2 - Fish diseases caused by protozoa. (2 hours.) 3 - Fish diseases caused by Myxozoa. (2 hours.) 4 - Fish diseases caused by flukes. (2 hours.) 5 - Fish diseases caused by tapeworms. (2 hours.) 6 - Fish diseases caused by nematodes. (2 hours.) 7 - Fish diseases caused by leeches, acanthocephalans and microsporidia. (2 hours.) 8 - Fish diseases caused by crustaceans. (2 hours) 9 - Fish parasitic diseases - partial test . (2 hours) 10 - Carp anatomy and section. (2 hours) 11 - Anatomy and section of a rainbow trout. (2 hours) 12 - Hematology and immunology of fish. (2 hours) 13 - Bacterial carp diseases. (2 hours) 14 - Bacterial diseases of rainbow trout. (2 hours) 15 - Identification and description of fish parasites and recognition of fish diseases. Completion of classes. (2 hours) Lectures Carps and rainbow trout farming. Environmental diseases of fish. (6 hours) Viral diseases of fish. (4 hours) Fungal diseases of fish. (1 hour) Diseases (bacterial and parasitic) of fish that are zoonoses (2 hours) Medications used for the treatment and prevention of fish diseases. (2 hours.)
Recommended and obligatory reading list	Noga E.J. Fish Disease: Diagnosis and Treatment. 2010 Wiley-Blackwell, Ames, Iowa Austin, B., Austin, D.A. Bacterial Fish Pathogens. Disease of Farmed and Wild Fish. Brown L.: Aquaculture for veterinarians- fish Husbandry and Medicine 1993 Billard R.: Carp-Biology and Culture. Springer. 1995 Woo P.T.K., Bruno D.W.: Fish diseases and disorders (Viral, Bacterial and Fungal infections) v.3. 1999
The intended forms/activities/ teaching methods	Lectures, classes, PowerPoint presentations, pictures, films, necropsy carp/trout, investigation of macroscopic and microscopic preparations, consultations.

<table>
<tr><td>Methods of verification and documentation forms of the achieved learning outcomes</td><td colspan="3">Konwledge.
Short written tests on each class - a list with grades, presence lists. Final test - a list with grades, examination protocol.
Skills.
Active participation in laboratory classes (it is necessary to pass all classes) - absence on classes must be passed during consultations. Presence lists, examination protocol
Social competences.
Active participation in laboratory classes (it is necessary to pass all classes) - absence on classes must be passed during consultations. Presence lists, examination protocol.</td></tr>
<tr><td rowspan="6">Balance of ECTS credits</td><td>Type of course</td><td>Number of contact hours</td><td>ECTS points</td></tr>
<tr><td>Lectures
Classes
Consultation
Exam</td><td>15
30
3
2</td><td>0,6
1,2
0,1
0,1</td></tr>
<tr><td></td><td>Number of not contact hours</td><td>ECTS points</td></tr>
<tr><td>Preparation for classes
Preparation for tests
Reading recommended literature
Exam preparation</td><td>3
5
3

15</td><td>0,1
0,2
0,1

0,6</td></tr>
<tr><td>Total</td><td>76</td><td>3</td></tr>
<tr><td>Number of contact hours</td><td colspan="3">Workload related to practical activities:
- participation in lectures - 15 hours
- participation in laboratory classes - 30 hours
- participation in consultations - 3 hours
- final exam - 2 hours
A total of 50 hours, which corresponds to 2 ECTS points

Workload related to practical activities:
- participation in auditorium and laboratory classes - 30 hours,
- preparation for auditorium exercises - 4 hours
- preparation for laboratory (partial tests) - 26 x 1 hour = 26 hours
- reading recommended literature - 7 hours
- participation in consultations - 6 hours,
- participation in the final exam - 2 hours
A total of 75 hours, which corresponds to 3 ECTS points</td></tr>
<tr><td>Relationship between subject learning outcomes and veterinary studies learning outcomes</td><td colspan="3">K1 – WE_W08 ++
K2 - WE_W17 +++
S1 – WE_U14, WE_U16, WE_U19, WE_U21, WE_U22, WE_U23, WE_U24, WE_U25, WE_U27, WE_U28 +++
S2 – WE_U28 +++
C1 – WE_K6 +</td></tr>
</table>

Impact of selected compounds to final grade	Classes: - Short written tests (10 questions). Passing threshold is 6 points which is 60% of maximal score. First term and retake, both have the same form. Final test exam (30 questions). The grading scale: 5.0 (28-30 correct answers) 4.5 (26-27 correct answers) 4.0 (24-25 correct answers) 3.5 (22-23 correct answers) 3.0 (18-21 correct answers) 2.0 (<18 correct answers) The final grade: Final test - 100%.