

COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	DEPT. OF ANIMAL PRODUCTION, FISHERIES AND AQUACULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AS-5006	SEMESTER	X (elective of 5CU)
COURSE TITLE	INFECTIOUS AND PARASITIC DISEASES OF AQUATIC ANIMALS		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
	4	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Specialized general knowledge, Skills development		
PREREQUISITE COURSES:	<u>Recommended:</u> Microbiology, Immunology & Nosology, Ichthyopathology & Diagnostics		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek, English		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)	... to be constructed		

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

On successful completion of this unit, the students will be able to:

- ✓ **appreciate the importance of transmissible diseases and comprehend the spreading processes of their causative agents.**
- ✓ **approach the transmissible diseases of fish and other aquatic animals from the aetiological, clinicopathological and epidemiological perspectives, and recognize the relevant phenomenology.**
- ✓ **know and characterize the main taxa of biopathogenic factors (viruses, bacteria, eukaryotic parasites) and, also, expound on the variable processes of contagion and disease development, in different kinds of fish transmissible diseases, along with their consequences.**
- ✓ **contribute towards the diagnosis and prognosis formation for the commonest fish transmissible diseases, as well as the application of therapeutic and preventive measures for their control.**

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology

Project planning and management

Adapting to new situations

Respect for difference and multiculturalism

Decision-making

Respect for the natural environment

Working independently

Showing social, professional and ethical responsibility and sensitivity to gender issues

Team work

Criticism and self-criticism

Working in an international environment

Production of free, creative and inductive thinking

Working in an interdisciplinary environment

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Production of new research ideas

Others...

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- **Applying scientific knowledge.**
- **Search for, analysis and synthesis of data and information, with the use of the necessary technologies.**
- **Adapting to new situations.**
- **Decision-making.**

- **Working independently.**
- **Team work.**
- **Working in an international environment.**
- **Working in an interdisciplinary environment.**
- **Production of new research ideas.**
- **Criticism and self-criticism.**
- **Production of free, creative and inductive thinking.**

3. SYLLABUS

- Introduction to Fish Disease. Transmissible diseases; "infectious", "microbial" and/or "parasitic" aetiology. Causative and pathological agent; Koch's postulates.
- Importance of transmissible diseases and associated problems to wild and/or reared populations. Intra-specific and inter-specific transmission. Mode of transmission, transmissibility and pathogenicity/virulence of the biotic determinant.
- Disease analysis per case (definition, range, aetiology, epidemiology, pathogenesis, pathology, clinical signs, diagnosis, prognosis and control).
- Viral fish diseases in general. Main cases.
- Bacterial fish diseases in general. Main cases.
- Fungal fish diseases in general. Main cases.
- Parasitism in general, relations between host and parasite, types of parasites and hosts.
- Protozoan and metazoan fish parasites: systematics, geographical and host range, identification, biology and life-cycles. Main parasitic taxa and parasitic diseases thereof.
- Principles of therapeutics; chemotherapeutants (antiviral, antimicrobial, antiparasitic: action and use). Alternative methods for treatment of disease.

4. TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;">DELIVERY <i>Face-to-face, Distance learning, etc.</i></p>	<p>Face-to-face</p>	
<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use of ICT in all teaching/learning activities.</p>	
<p style="text-align: center;">TEACHING METHODS</p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	<i>Activity</i>	<i>Semester workload</i>
	<p>Lectures and Individual Essay writing (1)</p>	<p>26</p>
	<p>Laboratory practice and Seminars</p>	<p>26</p>
	<p>Non-directed study</p>	<p>73</p>
<p>Course total</p>		
<p style="text-align: center;">STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Language, Greek and/or English</p> <ol style="list-style-type: none"> 1. Oral examination (summative-conclusive) (A) 2. Written final examination – Short-answer questions, Open-ended questions and/or Problem solving (conclusive) (B) 3. Written work (conclusive) (C) <p>Each one to be graded in a 0-10 scale.</p> <p>Final grade (FG):</p> <p style="text-align: center;">FG= 0,2A+0,6B+0,2C when B≥5, else: FG= B</p> <p>'A' and 'C' are done concurrently with the teaching process; 'B' takes place in the examinations period as regulated.</p> <p>In case of failure, the student should repeat the procedure.</p>	

5. ATTACHED BIBLIOGRAPHY

Suggested bibliography:

- **Bacterial Fish Pathogens: Disease of Farmed and Wild Fish (6th ed.): Brian Austin, Dawn A. Austin (2016). Springer, 732 pages, ISBN 978-3319326733**
- **Fish Parasites: Pathobiology and Protection: Patrick T. K. Woo, Kurt Buchmann (2012). CABI, 400 pages, ISBN 978-1845938062**
- **Aquaculture Virology: Frederick S. B. Kibenge, Marcos Godoy (2016). Academic Press, 568 pages, ISBN 978-0128015735**
- **Infectious Disease in Aquaculture: Prevention and Control: B. Austin (2012). Woodhead, 560 pages, ISBN 978-0857090164**

Related academic journals:

- ❖ **Fish Pathology: The Japanese Society of Fish Pathology, ISSN 0388-788X (print) 1881-7335 (online), (<http://www.fish-pathology.com/>)**
- ❖ **Journal of Aquatic Animal Health: American Fisheries Society (Fish Health Section) - Taylor & Francis, (<http://www.tandfonline.com/toc/uahh20/current>)**
- ❖ **Diseases of Aquatic Organisms: Inter-Research, ISSN 0177-5103 (Print) 1616-1580 (Online), (<http://www.int-res.com/journals/dao/dao-home/>)**
- ❖ **Journal of Fish Diseases: John Wiley & Sons, ISSN 1365-2761, ([http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1365-2761](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-2761))**