COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	ANIMAL PRODUCTION, FISHERIES AND AQUACULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AS_703	**SEMESTER**	7th
COURSE TITLE	ANIMAL FEED – MANUFACTURE TECHNOLOGY – TRADING		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).	3	6

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special Background
PREREQUISITE COURSES:	There are no prerequisite courses
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek. English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBSITE (URL)	

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*

After the successful completion of the course, students should be able to

- Explain the role of basic macromolecules and micromoles (proteins - amino acids, lipids - fatty acids, carbohydrates, vitamins, minerals and trace elements) in the feed of farmed animals – birds – fishes.
- Explain the origin of the raw materials, the technology required for their incorporation in the production of rations (animal, bird and fish feed), as well as the modern techniques of quality control and storage of these.
- Explain the feasibility of using rations based on nutritional programs at minimal cost, as well as techniques for incorporating feed supplements and / or producing medicated feed.
- Be aware of good practice in packing, transporting and storing the rations according to their composition and the species of farmed animal organism.

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	*……*
Production of new research ideas	*Others…*
	…….

- Applying scientific knowledge
- Search, analysis and synthesis of data and information, using the necessary technologies
- Decision-making
- Working independently
- Team work
- Criticism and self-criticism

3. SYLLABUS

In particularly the course is analyzed in follow modules:

Definition of the term "Ration" and the properties that characterize it.

1. Definition of the term "ration" and the qualities that characterize it.

2. General principles of rations (purpose, kinds and types of animal - bird - fish feed, raw materials and ingredients).
3. Design and methods of preparing rations as well as factors influencing the production of rations.
4. Composition of rations for dairy - meat production cattle.
5. Composition of rations for dairy - meat production goat and sheep.
6. Composition of rations for swine.
7. Composition of rations for horse, dog, cat, rabbit.
8. Composition of rations for bird.
9. Composition of rations for fish.
10. Special Issues: (i) Feeding of Animal - Bird – Fish genitors. (ii) Food supplements - Balancers. (iii) Pharmaceutical rations and relevant national and European legislation on their use, (iv) Nutrition of larvae and early young fishes and basic principles of the production of live feed (phyto-zooplankton).
11. Stages and industrial equipment for the production of animal - bird - fish feed (pelletization, extrusion, compaction).
12. Quality control and evaluation of the produced animal - bird - fish feed, handling and storage of these.
13. Estimation of feed production costs of animal - bird - fish feed and development of global production of these in the coming decades.

(Laboratory exercises: There are not in this course).

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	• Use of ICT in teaching (Power-Point presentations) • Uploading of lecture slides and other educational material on E-class • Communication with the students through the online platform E-class.
TEACHING METHODS *The manner and methods of teaching are described in detail.* *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.*	

Activity	***Semester workload***
1. Lectures 3 hours x 13 weeks.	39
2. Further study, search and study of lecture material, associated with (1) (3 hours x 13 weeks)	39
3. Self-assessment exercises in e-class (1 x 6 weeks)	13
4. Writing of short work presentation (1 x 13 weeks)	13

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	7. Hours of study and preparation for laboratory exercises, assessment of progress (s) and final examination	43
	8. Final examination	3
	Course total	**150**

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods 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* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	• Greek Language (Teaching, Examination) • English Language (Teaching, Examination) 1. Presentation of short work on Taught (Formative - Concluding) (A) 2. Written Final Examination (Concluding) (B) Each case is graded on a scale of 0-10 Final Grade (FG): 0.3A + 0.7B otherwise: Final Grade (FG): 1B (B) takes place during the current examination period that the lesson is taught, and its iteration (September) (period where A scores are maintained). In case of failures of the course the student repeats the Written Final Examination (B). Students with learning difficulties are examined orally.

5. ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

- Ayodeji Adeoye, 2011. Fish Nutrition, p. 60, Lambert Academic Publishing.
- G. Joan Holt, 2011. Larval Fish Nutrition, Wiley-Blackwell
- John E. Halver, 2013. Fish Nutrition, Academic Press.

-Related academic journals:

- Journal of the Hellenic Veterinary Medical Society
- Journal of Aquaculture Feed Science and Nutrition. Medwell Journals
- A review of some Fish Nutrition Methodologies. ScienceDirect