AGUACULTURE MANAGEMENT AND BIOTECHNOLOGY

1	Course Title:	AGUACULTURE MANAGEMENT AND BIOTECHNOLOGY
2	Course Code:	VET3512
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	6
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	-
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. Soner Altun
15	Course Lecturers:	-
16	Contact information of the Course Coordinator:	Prof. Dr. Soner ALTUN Veteriner / Klinik Öncesi Bilimler / Su Ürünleri Hastalıkları
17	Website:	http://veteriner.uludag.edu.tr/index.html
18	Objective of the Course:	To learn the basic principles of aquaculture, aquaculture techniques and technological developments in aquaculture are aimed.
19	Contribution of the Course to Professional Development:	Have knowledge about all biotechnological methods used in the production of fisheries and have information about the current methods used in fish production after graduation.
20	Learning Outcomes:	
	1	Learn the importance of aquaculture and aquaculture production in our country and in the world in the food sector
	2	Have knowledge about the breeding techniques of fish species grown in our country
	3	Gains knowledge of biotechnological developments used in aquaculture
	4	Learn the practices of preventive medicine in the aquaculture industry.
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21	Course Content:	

Course Content:

Week	Theoretical	Practice
1	Developments in Aquaculture in the world and in our country. Breeding techniques of fish species in our country	

2	The definition of aquaculture, history, diversity of freshwater and marine fish farming, World, Europe (Mediterranean) and Turkey culture fish farming	
3	General introduction of aquaculture production facilities, Identification of applied breeding techniques	
4	The use of lakes, dams, dalyan systems in production	
5	Culture techniques in soil pools	
6	Characteristics of freshwater and marine fish species suitable for breeding	
7	Broodstock management and analysis of broodstock in aquaculture	
8	Hatchery process and characteristics of the hatchery unit in aquaculture	
9	Larvae process and properties of larval unit in aquaculture	
10	In the marine fish farming, the bend and pre-growing process, the features of the bend and pre-growing unit	
11	Net cage process and properties of net cages in marine fish breeding	
12	General production protocols in cultured fish	
13	Sex control in fish, sex change directly with hormones, feminization (feminization), male fishisation, sterilization, sterilization with hormone, alteration by chromosome numbers (triploid), radiation sterilization, hybridization and non-ginogenous, changing breeding times, photoperiod application , genotype-environment interaction, maternal effects, breeding targets	
14	Principles of preventive medicine in aquaculture	

22	Textbooks, References and/or Other Materials:	1.Alpbaz A.,2005, Su Ürünleri Yetiştiriciliği. Alp yayınları. İzmir, 548s. 2.Çelikkale, M.S. 1988, İçsu Balıkları ve Yetiştiriciliği, Cilt: I-II, Trabzon, 450 s. 3.BROMAGE, N.R., ROBERTS, R.J., 2001, Broodstock Management and Egg and Larval Quality, Blackwell Science,420 4.Avault, W.J., 2005, A Step-by-step Guide to Commercial Aquaculture, AVA Publishing Inc., 890 s. 5.Çağıltay, F., 2007, İçsu Balıkları Yetiştiriciliği, Nobel Yayınları, Ankara 255 s. 6.Pıllay, T.V.R., 1990, Aquaculture principles and practices, Year 1990, The university press Cambridge 7 Atay, D., Aydın, F., H, Y. Yıldız., 2002. Su Ürünleri Yetiştirme İlkeleri, 271 s, Ankara Üniversitesi Ziraat Fakültesi Yayınları, Yayın no:1528, Ders kitabı:481, Ankara.. 8. Alpbaz, A.,2005, Su Ürünleri Yetiştiriciliği. Alp yayınları.Bornova –İzmir,548s.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	30.00
Quiz	1	10.00
Home work-project	0	0.00

Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		In order to achieve learning outcomes, students are given face-to-face lessons, written, test and homework, and assessment and evaluation are made.

24 ECTS / WORK LOAD TABLE

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	1.00	14.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	0	0.00	0.00
Final Exams	1	25.00	25.00
Total Work Load			92.00
Total work load/ 30 hr			3.07
ECTS Credit of the Course			3.00

25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	5	4	4	3	4	2	1	3	3	4	2	0	0	0	0
ÖK2	4	5	4	3	4	3	2	3	2	5	2	4	0	0	0	0
ÖK3	3	4	5	3	4	5	2	5	4	4	2	4	0	0	0	0
ÖK4	4	4	4	3	4	3	5	4	5	4	4	2	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**