

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 Anabilim Dalı	
17	Website:	http://veteriner.uludag.edu.tr/index.html	
18	Objective of the Course:	Giving basic information about aquaculture and aquatic animal diseases	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Aquatic animal products, breeding products and relationship with other sectors in Turkey and world.
		2	Having information about breeding techniques of aquatic animals in Turkey
		3	Having information about biotechnical applies in breeding
		4	Having information about function of veterinarian who works in aquatic animal farms
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	History of aquatic animal breeding and common breeding species		
2	Selection of breeding area, ecological factors, biological factors, marketing facilities		

3	Sources of water and quality of water. Water parameters, physical features of water, temperature, colour, density, salinity, chemical features, pH, minerals of water	
4	Brood and catching brood from natural environment, depth of ponds, hatching, hormone applies	
5	Hatching with hormone applies, hatching with pituitary applies, hatching with HCG applies, development of eggs, fertilisation of eggs	
6	Reasons of eggs deaths in hatchery period, prevention of eggs death, types of hatcheries, disinfections of eggs, counting of eggs	
7	Breeding of larvae, natural hatching, development of larvae, tools of larvae breeding,	
8	Breeding of infants, differences between infants and larvae, first feeding, production of planktons, phytoplanktons, zooplanktons, rotifer and artemia salina, practical applies of feeding.	
9	criteria of table fish, criteria of stock for growing table, stocks aim, factors of stock density, relationship between stock and yield, determine of stock density, price of stock, pond fisheries, factors of effect dead water growing, ponds	
10	Intensive monoculture, polyculture breeding in ponds, combine breeding, semiintensive monoculture breeding	
11	Sofralık yetiştirme ilkeleri Cage breeding, types of cages, extensive cage breeding, semiintensive cage breeding, relationship between extensive and semi intensive breeding	
12	Feeding principles of aquatic animal breeding, sources of protein, quality of food, transportation of broods, transportation of eggs, transportation of larvae.	
13	Correctional applies in fish breeding. Sex control of fish, feminisation, neutralisation, neutralisation with hormones, triploidy, photoperiod applies	
14	Biotechnologic and technic information about production of breeding species. Carp, rainbow trout, tilapia, catfish, bass, bream and mussels.	

22	Textbooks, References and/or Other Materials:	<p>1.Alpbaz A.,2005, Su Ürünleri Yetiştiriciliği. Alp yayınları. İzmir, 548s.</p> <p>2.Çelikkale, M.S. 1988, İçsu Balıkları ve Yetiştiriciliği, Cilt: I-II, Trabzon, 450 s.</p> <p>3.BROMAGE, N.R., ROBERTS, R.J., 2001, Broodstock Management and Egg and Larval Quality, Blackwell Science,420 s.</p> <p>4.Avault, W.J., 2005, A Step-by-step Guide to Commercial Aquaculture, AVA Publishing Inc., 890 s.</p> <p>5.Çağiltay, F., 2007, İçsu Balıkları Yetiştiriciliği, Nobel Yayınları, Ankara 255 s.</p> <p>6.Pillay, T.V.R., 1990, Aquaculture principles and practices, Year 1990, The university press Cambridge</p> <p>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..</p> <p>8. Alpbaz, A.,2005, Su Ürünleri Yetiştiriciliği. Alp yayınları.Bornova –İzmir,548s.</p>
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23	Assesment	
TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	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		
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	28	1.00	28.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	14.00	14.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
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	4	4	4	4	5	4	3	4	4	2	1	2	0	0	0	0
ÖK2	3	3	3	2	3	2	4	1	2	2	1	3	0	0	0	0
ÖK3	3	3	5	2	2	4	1	3	2	1	3	2	0	0	0	0
ÖK4	4	5	4	4	4	2	1	3	2	1	2	3	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			