FISH PHYSIOLOGY

1	Course Title:	FISH PHYSIOLOGY	
2	Course Code:	BIO6509	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
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. Hikmet Sami Yıldırımhan	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Prof. Dr. Hikmet Sami YILDIRIMHAN yhikmet@uludag.edu.tr 0224 2941790 Uludağ Üniversitesi, Fen–Edebiyat Fakültesi, Biyoloji Bölümü, 16059, Nilüfer-Bursa	
17	Website:		
18	Objective of the Course:	Blood circulation of fishes, blood veins, blood in fishes: blood cell, white blood cell, lymph and lymph stream system, digestive system of fishes, the feeding and digestion of fishes, immunity of fishes, poison glands, electric organ, endocrin system of fishes.	
19	Contribution of the Course to Professional Development:	Blood circulation of fishes, blood veins, blood in fishes: blood cell, white blood cell, lymph and lymph stream system, digestive system of fishes, the feeding and digestion of fishes, immunity of fishes, poison glands, electric organ, endocrin system of fishes.	
20	Learning Outcomes:		
		1	Knows the feeding physiology of fishes and distinguishes differences in the digestive system organs.
		2	Knows the layout of the pharynx, oral cavity and teeth of fishes.
		3	Knows the blood, blood cells and vessels in fishes. Understands the lymph and lymphatic circulatory system in fishes.
		4	Explains the respiratory system of fishes and the structure of the gills.
		5	Learn the physiology of reproduction and growth in fish.
		6	Explains the physiology of the excretory system and differences in kidney structure.
		7	Explains the endocrine systems in the fishes.
		8	Explains the physiology of the nervous system and movement in fishes.
		9	Knows the sense system, venom glands and properties of electric organs in fishes.
		10	

21	Course Content:

Course Content:

Week	Theoretical	Practice
1	Explaining the digestive system and feeding in the fishes.	
2	Explaining the layout of the pharynx, oral cavity and teeth of fishes.	
3	Explaining the hearth, blood cells and vessels in fishes.	
4	Explaining the lymph and lymphatic circulatory system in fishes.	
5	Explaining the mechanisms of the respiratory and nervous control of respiration in fish respiratory system, and the structure of the gills.	
6	Physiology of reproduction and growth, gonad development and reproductive system according to fish species.	
7	Explaining the physiology of excretory system in fishes: kidney and urinary system, the structure of kidney and urinary ducts.	
8	Explaining the ion system in fishes.	
9	Explaining the endocrine system in fishes.	
10	Explaining the physiology of movement in fishes	
11	Explaining the functional properties of electric organs in fishes.	
12	Explaining the toxicology in fishes	
13	Explaining the nervous system in fishes.	
14		

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preparation	14	6.00	84.00
Homeworks	3	4.00	12.00
Projects	2	5.00	10.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	32.00	32.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

Materials:

Mechanism and Adaptations.W. H. Freeman and Company, New York.
Publishers. New York.
3- Hill W. R., Wyse A. G., Animal Physiology. Harper &
4- Schmidt-Nielsen K.1990. Animal Physiology. Cambridge University Pres Fourth Edition.

23	Assesment

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	100.00
Total	1	100.00
Contribution of Term (Year) Learning Activities to Success Grade		0.00
Contribution of Final Exam to Success Grade		100.00
Total		100.00

Measurement and Evaluation Techniques Used in the Course	the writing examination

24	ECTS / WORK LOAD TABLE

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	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0
ÖK2	5	1	0	0	0	0	0	5	0	0	5	4	0	0	0	0
ÖK3	0	1	0	3	4	0	0	0	0	4	0	0	0	0	0	0
ÖK4	0	1	0	0	0	0	0	2	0	0	0	4	0	0	0	0
ÖK5	4	1	0	5	0	5	0	3	0	5	4	0	0	0	0	0
ÖK6	0	1	0	0	0	4	0	4	0	4	0	0	0	0	0	0
ÖK7	3	1	0	4	0	0	0	0	0	0	5	5	0	0	0	0
ÖK8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**			**4 High**				**5 Very High**			