CLINICAL LABORATORY DIAGNOSIS II

1	Course Title:	CLINICAL LABORATORY DIAGNOSIS II	
2	Course Code:	VET5225	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	5	
6	Semester:	9	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	1.00	
9	Practice (hour/week):	2.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:		
15	Course Lecturers:	Prof. Dr. Nazmiye Güneş Prof.Dr. Ümit Polat Prof.Dr. Bayram Şenlik Prof. Dr. Ayşin Şen Doç. Dr. Saime Güzel Doç. Dr. İ Taci Cangül Dr. Öğr. Üyesi Duygu Udum	
16	Contact information of the Course Coordinator:	Prof. Dr. Nazmiye Güneş ngunes@uludag.edu.tr 0 224 2941282 U.Ü.Veteriner Fakültesi Biyokimya ABD	
17	Website:		
18	Objective of the Course:	Being able to determine and interpret biochemical parameters that aid in clinical diagnosis in in small animal medicine, and interpretation and application of physiological, pathological and microbiological	
19	Contribution of the Course to Professional Development:	Learning and interpreting biochemical parameters supporting clinical diagnosis in small animal medicine.	
20	Learning Outcomes:		
		1	Being able to select and apply biochemical parameters that aid in clinical diagnosis in diseases resulting from pathological and metabolic disorders in small animals.
		2	Being able to apply and perform tests and methods that are used to obtain biochemical parameters and interpret results.
		3	Being able to explain mechanisms of diseases frequently observed in small animals.
		4	Being able to choose clinical material that are used in diagnosis of small animal diseases and apply biopsy techniques.
		5	Being able to utilize diagnostic methods in immune disorders and parasitic infestations frequently observed in small animals.

	6	Being able to integrate all diagnostic knowlede acquired about small animal diseases and use in diagnosis of diseases
	7	Being able to communicate with workers and animal owners
	8	Being able to disseminate knowledge gained about clinical biochemical methods in diagnosis of small animal diseases verbally and in writing.
	9	
	10	

21	Course Content:

Course Content:

Week	Theoretical	Practice
1	Coagulation and diagnosis of clotting disorders.	Determination of the clotting time with Lee-White method; Prothrombin time (PT)-Quicks one -stage method
2	Clinical enzymology and interpretation	Measurement of serum AST and ALT
3	Laboratory tests in liver diseases: albumin, globulin, ammonia and urea nitrogen, starvation blood ammonia tolerance test, hypo and hyperproteinemia, diagnostic approach to hyperglobulinemia	Analysis of serum total protein and gluteraldehyde test
4	Tests of hepatic metabolism: bilirubin metabolism and icterus, diagnostic approach to urine bilirubin, urobilinogen and high serum bile acids	Ehrlich's benzaldehyde test, determination of urobilinogen and bile acids in urine, the determination of bilirubin by using Fauchet's test, the use of urine strips
5	Glomerular function tests: interpretation of azotemia, creatinine clearance, tubuler findings in renal diseases	The microscopic examination of urine sediment, interpretation of crystals found in acid and alkaline urine
6	Plasma calcium fractions, hypo and hyperphosphatemia, primary hypoparathyroidism, primary and secondary tests of biochemical mechanism of Addison's disease and Cushing's syndrome	Analysis of serum calcium and inorganic phosphorus and and Cushing's syndrome
7	Midterm exams	
8	Hypo- and hyperthyroidism	hyperthyroidism
9	Diagnosis of diabetes mellitus and diabetes insipidus, interpretation of hypoglycemia and galactosemia	glucose level
10	Lipoproteins, interpretation of hyperlipidemia and hypo- and hypercholesterolemia	Analysis of serum total lipid and cholesterol
11	Immunologic mechanisms in immune mediated diseases, immunologic mechanisms of canine and feline IgE and immune complex mediated disease	Erythrocyte agglutination tests, anti-erythrocyte antibody tests, anti-nuclear antibody tests, anti-thrombocyte antibody tests, rheumatoid factor test
12	Sampling from lymph node aspirates, bone marrow, nasal discharge, etc. Sampling and evaluating transudates and exudates	Preparing cytological smears from lymph nodes, organs, transudates and exudates obtained from slaughterhouses and clinics; discussion of archive cases
13	Skin biopsies: sampling and evaluation	Sampling skin biopsies; discussion of archive cases
14	Laboratory diagnostic techniques and interpretation of the results in parasitic diseases	Quantitative examination techniques, their values, evaluations and applicabilities in parasitology

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	1.00	14.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	5	3.00	15.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	1	8.00	8.00
Final Exams	1	15.00	15.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

22	Textbooks, References and/or Other Materials:	Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics , Carl A Burtis, David E.Bruns , Elsevier,2014. Genel ve Klinik Biyokimya, M. Üstdal, O. Donma, R. Vuillaume, K. Dolbun,1. Baskı Güneş Tıp Kitabevleri, 2017. Klinik Laboratuvar Tanı, Turgut K. II. Baskı, İstanbul, 2002 Guyton Tıbbi Fizyoloji, Hall J.E.,Güneş Tıp Kitabevleri , 13. Baskı, 2017 Şen A; Veteriner İmmunoloji, İkinci Baskı, Dora Yayıncılık, Bursa, 2019 Textbook of clinical parasitology in dogs and cats. .Beugnet, F., Halos, L., Guillot, J. ss. 432. Servet editorial Grupo Asís Biomedia, S.L.. Spain. (2018). Freeman KP, Klenner S. Veterinary Clinical Pathology: A Case-Based Approach. CRC Press, Londra, İngiltere, 2015
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		The exams will be made in the form of test or classical written

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	4	1	5	5	1	1	1	3	1	1	1	1	0	0	0	0
ÖK2	4	1	5	4	1	1	1	1	1	1	1	1	0	0	0	0
ÖK3	4	5	5	1	4	1	1	0	0	1	1	1	0	0	0	0
ÖK4	4	0	4	3	1	1	1	1	1	1	0	1	0	0	0	0
ÖK5	4	0	3	3	1	1	1	1	1	1	1	1	0	0	0	0
ÖK6	5	2	5	1	1	1	1	0	1	1	0	0	0	0	0	0
ÖK7	1	4	1	1	1	1	1	1	5	1	1	1	0	0	0	0
ÖK8	1	1	1	1	1	1	1	1	5	5	1	1	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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