	URINE ANAL	YSIS A	AND INTERPRETATION								
1	Course Title:	URINE A	ANALYSIS AND INTERPRETATION								
2	Course Code:	VBK600	14								
3	Type of Course:	Optiona	I								
4	Level of Course:	Third Cy	/cle								
5	Year of Study:	1									
6	Semester:	2									
7	ECTS Credits Allocated:	4.00									
8	Theoretical (hour/week):	1.00									
9	Practice (hour/week):	2.00									
10	Laboratory (hour/week):	0									
11	Prerequisites:										
12	Language:	Turkish	Turkish								
13	Mode of Delivery:	Face to	face								
14	Course Coordinator:	Prof. Dr.	. Ümit Polat								
15	Course Lecturers:										
16	Contact information of the Course Coordinator:	upolat@ 41283	. Ümit Polat Puludag.edu.tr Veteriner Fak. Biyokimya ABD.								
17	Website:										
18	Objective of the Course:	Being able to define urine analyses used to diagnose many diseases, urine formation; being able to comprehend and evaluate physiological and pathological conditions.									
19	Contribution of the Course to Professional Development:	Learning the mechanism of urine formation in living organisms, urine analysis and changes in diseases									
20	Learning Outcomes:										
		1	Being able to apply urine collection techniques.								
		2	Comprehension of effects of substances used to preserve urine on analysis results.								
		3	Ability to define physical observation methods of urine and apply								
		4	Ability to apply methods used to measure glucose and protein levels in urine.								
		5	Being able to perform microscopic examination of urine and interpret results								
		6	Ability to make connections between laboratory results and various disease states.								
		7	Ability to reach novel analysis methods.								
		8	Ability to apply new knowledge gained and disseminate								
		9									
	1	10									
21	Course Content:	C	ourse Content:								
Week	Theoretical		Practice								
1	Collection of urine samples and met preserved when needed.	hods to	Collection of urine samples from various animal species								

Physical examination of urine, its importance and interpretation. 3 Formation of albuminuria, types, clinical significance and analysis methods. 4 Detection of glucose in urine, etiology of glucosuria 5 Clinical significance of acetone presence. 6 Test of bilirubin and clinical significance. 7 Test of bile acids and clinical significance. 8 Indican test, determination of chloride levels. 9 Microscopic examination of urine and preparation. 10 Inorganic sediments observed in acidic urine. 10 Inorganic sediments observed in acidic urine. 11 Inorganic sediments observed in acidic urine. 12 Evaluation of urine analysis results based on diseases. 13 Evaluation of urine analysis results based on diseases. 14 Comparison of normal and pathological urine samples. 15 Evaluation of urine analysis results based on diseases. 16 Comparison of normal and pathological urine samples. 17 Evaluation of urine analysis results based on diseases. 18 Evaluation of urine analysis results based on diseases. 19 Evaluation of urine analysis results based on diseases. 10 Inorganic sediments observed in alkaline urine. 11 Inorganic sediments observed in acidic urine. 12 Evaluation of urine analysis results based on diseases. 13 Evaluation of urine analysis results based on diseases. 14 Comparison of normal and pathological urine samples. 15 Evaluation of urine analysis results based on diseases. 16 Evaluation of urine analysis results based on diseases. 17 Evaluation of urine analysis results based on diseases. 18 Evaluation of urine analysis results based on diseases. 19 Evaluation of urine analysis results based on diseases. 10 Comparison of normal and pathological urine samples. 10 On												
significance and analysis methods. 4 Detection of glucose in urine, etiology of glucosuria glucosuria 5 Clinical significance of acetone presence. 6 Test of bili rubin and clinical significance. 7 Test of bile acids and clinical significance. 8 Indican test, determination of chloride levels. 8 Indican test, determination of chloride levels. 9 Microscopic examination of urine and preparation. 10 Inorganic sediments observed in acidic urine. 11 Inorganic sediments observed in alkaline urine. 12 Evaluation of urine analysis results based on diseases. 13 Evaluation of urine analysis results based on diseases. 14 Comparison of normal and pathological urine samples. 15 Evaluation of orine analysis results based on diseases. 16 Comparison of normal and pathological urine samples. 17 Text of bile acids and orine analysis results based on diseases. 18 Evaluation of urine analysis results based on diseases. 19 Evaluation of urine analysis results based on diseases. 10 Evaluation of urine analysis results based on diseases. 11 Evaluation of urine analysis results based on diseases. 12 Evaluation of urine analysis results based on diseases. 13 Evaluation of urine analysis results based on diseases. 14 Comparison of normal and pathological urine samples. 15 Evaluation of urine analysis results based on diseases. 16 Evaluation of urine analysis results based on diseases. 17 Evaluation of urine analysis results based on diseases. 18 Evaluation of urine analysis results based on diseases. 19 Evaluation of urine analysis results based on diseases. 10 Evaluation of urine analysis results based on diseases. 11 Evaluation of urine analysis results based on diseases. 12 Evaluation of urine analysis results based on diseases. 13 Evaluation of urine analysis results based on diseases. 14 Evaluation of urine analysis results based on diseases. 15 Evaluation of urine analysis results based on diseases. 16 Evaluation of urine analysis results based on diseases. 18 Evaluation of urine analysis results b	2		oortance									
Second colors Clinical significance of acetone presence. Determination of acetone in urine	3		ical									
Test of bilirubin and clinical significance. Test of bile acids and clinical significance Indican test, determination of chloride levels. Indican test, determination of chloride levels. Indican test, determination of urine and preparation. Microscopic examination of urine and preparation. Inorganic sediments observed in aicidic urine. Detection of inorganic sediments in aicidic urine. Detection of inorganic sediments in aicidic urine. Inorganic sediments observed in alkaline urine. Inorganic sediments in aikaline urine. Inorganic sediments in aikal	4		y of		<u> </u>	nd quantitative gluc	cose tests in					
Test of bile acids and clinical significance Revaluation of urine analyses Conducting bile acid test in urine and chloride measurement.	5	Clinical significance of acetone prese	ence.	Det	termination of aceton	e in urine						
Indican test, determination of chloride levels. Conducting bile acid test in urine and chloride measurement. 9	6	Test of bilirubin and clinical significar	nce.	Eva	aluation of urine analy	/ses						
Microscopic examination of urine and preparation. Preparation methods for urine microscopic examination and microscope use	7	Test of bile acids and clinical signification	ance	Eva	aluation of urine analy	/ses						
preparation. 10 Inorganic sediments observed in acidic urine. 11 Inorganic sediments observed in alkaline urine. 12 Evaluation of urine analysis results based on diseases. 13 Evaluation of urine analysis results based on diseases. 14 Comparison of normal and pathological urine samples. 15 Evaluation of urine analysis results based on diseases. 16 Comparison of normal and pathological urine samples. 17 Evaluation of urine analysis results based on diseases. 18 Evaluation of urine analysis results based on diseases. 19 Comparison of normal and pathological urine samples. 20 Textbooks, References and/or Other Materials: 21 N. A. Brunzel, Fundamentals of Urine and Body Fluid Analysis, 2004 22 Number Duration (hour) Total Work Load (hour) 23 Total Work Load (hour) 24 Total Work Load (hour) 25 Field Study and preperation (hour) Analysis (hour) (hou	8	Indican test, determination of chloride	e levels.		_	t in urine and chlori	de					
11 Inorganic sediments observed in alkaline urine. 12 Evaluation of urine analysis results based on diseases. 13 Evaluation of urine analysis results based on diseases. 14 Comparison of normal and pathological urine samples. 15 Textbooks, References and/or Other Materials: 16 Activities N. A. Brunzel, Fundamentals of Urine and Body Fluid Analysis, 2004 16 Activities Number Duration (hour) 17 Total Work Load Hours	9		b									
Urine Evaluation of urine analysis results based on diseases. Evaluation of urine analysis results based on diseases Urine analysis results based on diseases Evaluation of urine analysis results based on diseases Evaluation of urine analysis results based on diseases Urine analysis results based on diseases Evaluation of urine analysis results based on diseases Urine analysis	10	Inorganic sediments observed in acid	dic urine.	Det	tection of inorganic se	ediments in acidic u	ırine					
diseases. 13 Evaluation of urine analysis results based on diseases diseases. 14 Comparison of normal and pathological urine samples. 15 Textbooks, References and/or Other Materials: Activities 16 N. A. Brunzel, Fundamentals of Urine and Body Fluid Analysis, 2004 Number 17 Duration (hour) 18 Duration (hour) 19 Total Work Load (hour) 19 Total Work Load (hour) 10 0 0.00 28.00 20 Elf study and preperation (hour) Homeworks 10 0 0.00 0.00 10 0.00 0.00 10 0.00 0.0	11	· ·	aline	Det	tection of inorganic se	ediments in alkaline	urine.					
diseases 14 Comparison of normal and pathological urine samples. 22 Textbooks, References and/or Other Materials: Activities N. A. Brunzel, Fundamentals of Urine and Body Fluid Analysis, 2004 Activities Number Duration (hour) Total Work Load (hour) Theoreticals/Labs 14 1.00 14.00 Practicals/Labs 14 2.00 28.00 Celf study and preperation Homeworks 0 0.00 0.00 Description Projects Director of the Course of the Course of the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	12		ased on	Eva	aluation of urine analy	sis results based o	n diseases.					
Samples Urine samples	13		ased on	Evaluation of urine analysis results based on diseases								
Materials: Analysis, 2004	14		cal urine									
Materials: Analysis, 2004												
Load (hour) Theoreticals/Labs 14 1.00 14.00 14.00	22					ntals of Urine and E	Body Fluid					
Practicals/Labs 14 2.00 28.00 Self study and preperation Midterm Exam 10 10 10 10 10 10 10 10 10 1	Activit	tes		N	lumber	Duration (hour)						
Self study and preperation Midterm Exam O 0 0.00 Homeworks O 0 0.00 Projects Homeworks O 0 0.00 O 0.00 Field Studies O 0 0.00 Midterm exams O 0 0.00 Midterm exams O 0 0.00 Midterm exams O 0 0.00 Total O 0 0.00 Total O 0 0.00 Total Work Load Total work load/ 30 hr ECTS Credit of the Course Wieasurement and Evaluation Techniques Used in the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Th geg re	i k9 sesment		1	4	1.00	14.00					
Homeworks 0 0 0.00 0.00 Projects 0 0 0.00 0.00 Field Studies 0 0 0.00 0.00 Midterm exams 0 0 0.00 0.00 Midterm exams 0 0 0.00 0.00 Midterm exams 0 0 0.00 0.00 Total Work Load 120.00 Total Work Load 120.00 ECTS Credit of the Course wieasurement and evaluation are performed according to Course the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Practic	cals/Labs		1	4	2.00	28.00					
Homeworks 0 0 0.00 0.00 Projects 0 0 0.00 Field Studies 0 0.00 Midterm exams 0 0 0.00 Midterm exams 0 0 0.00 Others 0 0.00 Total Work Load 1 22.00 Total work load/ 30 hr ECTS Credit of the Course weasurement and evaluation are performed according to Course the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Self stu	ud <u>y</u> and preperation	K	1	4	4.00	56.00					
Projects Home work project Field Studies 0 0.00 0.00 Midterm exams Total Others 0 0.00 0.00 Others 0 0.00 Others 0 0.00 Others 0 0.00 Total Work Load Total work load/ 30 hr Total ECTS Credit of the Course Wieasurement and Evaluation Techniques Used in the Iweasurement and evaluation are periormed according to Course Undergraduate Education.			10			0.00	0.00					
Field Studies 0 0.00 0.00 Midt Exams 0.00 0.00 Midterm exams 0.00 0.00 Others 0.00 0.00 Others 0.00 0.00 Singless Grade 1 22.00 22.00 Total Work Load 120.00 Total work load/ 30 hr ECTS Credit of the Course wieasurement and evaluation are performed according to Course the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Project	ts .	0	100	0	0.00	0.00					
Midterm exams Others			lΩ			0.00						
Others Others	ı ınaı L	-Aam	<u> </u>	N. A. Brunzel, Fundamentals of Urine and Body Fluid Analysis, 2004 Number Duration (hour) Total Work Load (hour)								
Total Work Load Total work load/ 30 hr Total work load/ 30 hr Total work load/ 30 hr ECTS Credit of the Course Weasurement and Evaluation Techniques Used in the Interest and evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Total		14	_								
Total Work Load Total work load/ 30 hr Total work load/ 30 hr ECTS Credit of the Course Interpretation and Evaluation Techniques Used in the Interpretation and Evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.			cs to	_								
Total work load/ 30 hr Total work load/ 30 hr ECTS Credit of the Course weasurement and Evaluation recrimques used in the intersection and evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Final F	Xams				22.00	122.00					
ECTS Credit of the Course 4.00				•			120.00					
measurement and Evaluation Techniques Osed in the inverse the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Total V	Vork Load										
Course the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.	Total V	Vork Load vork load/ 30 hr		100) 00		4.00					
	Total V	Vork Load work load/ 30 hr Credit of the Course				auon are penormed	4.00 4.00					
	Total V	Vork Load vork load/ 30 hr Credit of the Course rrement and ⊑valuation Techniques of		the	asurement and evalu Rules & Regulations	of Bursa Uludağ U	4.00 4.00 according to					

24 ECTS / WORK LOAD TABLE

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	1	1	2	1	1	4	1	2	1	1	1	1	0	0	0	0
ÖK2	1	1	1	1	1	3	0	1	1	1	1	1	0	0	0	0
ÖK3	2	2	1	1	1	5	1	1	1	1	1	1	0	0	0	0

Contrib 1 very low ution Level:			2 low		3	Medi	um	4 High			5 Very High					
			LO: L	earr	ning (bjec	tive	s P	Q: P	rogra	m Qu	alifica	tions	3		
ÖK8	2	1	0	1	1	1	1	2	1	1	3	2	0	0	0	0
ÖK7	1	1	1	0	4	0	1	1	3	1	1	1	0	0	0	0
ÖK6	1	1	3	4	1	1	0	1	2	1	1	2	0	0	0	0
ÖK5	1	2	1	1	1	4	1	1	1	1	1	1	0	0	0	0
ÖK4	1	1	0	1	0	4	0	1	1	1	1	1	0	0	0	0