



A- COURSE TITLE, CODE, ACADEMIC YEAR:

Body Fluid Analysis (MLT 412) 1437 – 1438 H

B- COURSE INFORMATION:

Course Code	Course Title	Credit Units			Study Level	Pre-requisites
		Total	Theory	Practical		
MLT 412	Body Fluid Analysis	3	2	1	7th	MLT-411
Course Coordinator		Extension		Email Address		
Dr. Ahmed Mohammed		-		ammohammed@taibahu.edu.sa		

C- COURSE DESCRIPTION:

By the end of this course, the students have to improve their knowledge about the principles and procedures of body fluid and urinalysis laboratory testing. This course is intended to provide the student with a foundation for performing urine and body fluid analysis. The anatomy and physiology of the renal system, urine formation, chemical analysis of urine and the microscopic examination of urinary sediment, urinary and metabolic diseases and correlation of abnormal findings and disease states will be analyzed. The course moves on to study analysis of cerebrospinal fluid, semen, synovial fluid, serous fluid and amniotic fluid and their clinical significance will be examined.

D- COURSE OBJECTIVES:

1. List the main types of body fluids.
2. Understand the clinically important biochemical & physiological related aspects
3. Identify the required methods of analysis.
4. Perform the routine analysis for basic routine daily fluids.
5. Interpret the various results of analysis.
6. Identify discrepant and/or contradictory results and action to be taken before reporting results.
7. Correlate results of macroscopic examination with microscopic examination.
8. Perform physical, chemical and microscopic analysis of urine specimens.
9. Evaluate quality control values to determine analytical errors and implement corrective action.
10. Perform physical, chemical, and microscopic examination of CSF, synovial and serous fluids using established laboratory protocol.

E- THEORY TOPICS:

Week	Theory Topic	Contact Hours
1	Introduction to urine analysis: Formation & composition of urine	2
2	Examination of urine	2
3	Examination of urine	2



4	Interpretation of normal & abnormal urine reports	2
5	Interpretation of normal & abnormal urine reports	2
6	Cellular components in urine	2
7	Casts & crystals in urine	2
8	Special urinary tests & their clinical significance and urinary calculi	2
9	Pregnancy testing	2
10	Introduction to semen evaluation	2
11	Collection & analysis of semen	2
12	Normal components and counts in semen analysis	2
13	Examination of CSF & serous fluids	2
14	Examination of prostatic fluid, amniotic fluid, sweat & synovial fluid	2
15	Revision	2

F- PRACTICAL SESSIONS:

Week	Practical Session	Contact Hours
1	Physical examination of urine	2
2	Chemical examination of urine	2
3	Microscopically examination of urine	2
4	Counting cellular components in urine	2
5	Commenting on crystals in urine	2
6	Commenting on casts in urine	2
7	Examination of unknown urine samples	2
8	Examination of unknown urine samples	2
9	Examination of unknown urine samples	2
10	Examination of urine for HCG hormone (pregnancy test)	2
11	Semen analysis: sperm count	2
12	Determination of CSF glucose & protein	2
13	Examination of other fluids & reports	2
14	Examination of other fluids & reports	2
15	Revision	2

G- ASSESSMENT TASKS:



#	Type of assessment task	Week	Total Grades
1	Continuous assessment	Weeks 1-13	10%
2	Midterm examination (written)	Week 8	15%
3	Assignment submission	Week 10	5%
4	Final practical exam	Week 16	30%
5	Final written examination	Week 17-18	40%

H- LEARNING RESOURCES:

1- Required textbook:

- King-Strasinger S, Schaub Di Lorenzo M. Urinalysis and Body Fluids, 5th ed. Philadelphia: FA Davis, 2008

2- Essential references:

- 1- Nancy A. Brunzel. FUNDAMENTALS OF URINE AND BODY FLUID ANALYSIS, 3rd ed. Saunders, an imprint of Elsevier Inc. 2013. ISBN: 978-1-4377-0989-6.
- 2- Lillian A. Mundt and Kristy Shanahan, EdD, Graff 's Textbook of Routine Urinalysis and Body Fluids , 2nd ed. LIPPINCOTT WILLIAMS & WILKINS, a WOLTERS KLUWER business 2011. ISBN 978-1-58255-875-2. Ringsrud K M and Linne J J. Urinalysis and Body Fluids A Color Text and Atlas, 1st ed. St. Louis, Mosby, 1995. ISBN: 0-8016-7043-8.
- 3- Burtis CA, Ashwood EA, Bruns DE, eds. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 4th ed. St. Louis, MO: Saunders, 2006. ISBN: 978-0-7216-3865-2

Notes:

- Assignments topics and requirements shall be announced by the end of Week-1, the deadline for submission is 12pm Thursday of Week-10 (each semester).
- Assignments and written assessment tasks must be verified against plagiarism, the maximum acceptable percentage is determined by the department (according to each level).
- Continuous assessments may include quizzes, internet searches, home-works, exercises, class activity, scratch cards, presentations, group work, etc.
- Practical exams may contain hands-on experiments, laboratory work, simulations, or demonstrations.
- Written exams will include multiple-choice questions (MCQ), short essay questions, and long essay questions.