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<b>Course Prefix No.:</b>	<b>MLT 108</b>
<b>Course Title:</b>	<b>Urinalysis and Body Fluids</b>
<b>Lecture Hrs/Wk:</b>	<b>2.0</b>
<b>Lab Hrs/Wk:</b>	<b>3.0</b>
<b>Credit Hrs/Semester:</b>	<b>3.0</b>

[Distance Learning Attendance/VA Statement](#)  
[Textbook Information](#)  
[Student Code and Grievance Procedure](#)

### **COURSE DESCRIPTION**

This course introduces the routine analysis and clinical significance of urine and other body fluids.

### **COURSE COMPETENCIES**

Upon completion of this course the student will be able to:

1. Name and locate the components of the urinary system.
2. Identify the parts of the nephron and explain the formation of urine in reference to the nephron.
3. Describe and evaluate the proper collection and preservation of various types of urine specimens.
4. Describe the normal physical characteristics of urine.
5. Recognize the reagents used for the dipstick chemical tests and interpret chemical test results.
6. Identify the routinely formed elements found in urinary sediments.
7. Perform and evaluate the procedures and documentation for the quality control of specimens.
8. Correlate abnormal findings on a routine urinalysis with disease states.
9. Describe inborn errors of metabolism and interpret given screening tests.
10. Describe the gross appearance and typical microscopic structures of normal and abnormal cerebrospinal fluid.
11. Investigate the normal components of feces and explain the principle of the occult blood test.
12. Reproduce the collection and handling, composition, and appearance of seminal, cerebral, synovial, pleural, pericardial, peritoneal, and amniotic fluids.
13. Construct and present a report on a renal disease/inborn error of metabolism.
14. Promote professionalism through dress, conduct, and attitude.

### **Performance Objectives:**

1. Using images provided, the student will name and locate the components of the urinary system.
2. Using images, lecture notes, and text, the student will identify the parts of the nephron and explain how urine is formed placing emphasis on filtration, reabsorption, secretion and renal blood flow.
3. Given charts, text, and examples, the student will describe the different types of urine specimens and judge the quality of the specimen using pre-established specimen collection and handling guidelines.
4. Utilizing patient samples obtained from the hospital, the student will record the color, appearance, specific gravity, and odor of a minimum of 20 urine specimens within 95% accuracy of the values obtained by the instructor.

5. Given the text and a handout concerning the urine test strip, the student will:
  - List the major reagents and chemical reactions for each parameter
  - Recognize normal and abnormal values
  - Correlate the different parameters that signify a disease state
  - Recognize parameter changes due to improperly preserved specimens
6. Utilizing patient samples obtained from the hospital, the student will interpret and record dipstick chemical tests for pH, protein, glucose, specific gravity, ketones, blood, bilirubin, urobilinogen, nitrate, and leukocytes on a minimum of 20 urine specimens within 95% accuracy of the values obtained by the instructor.
7. Given text, handouts, and Internet sources, the student will list and recognize (including normal values) the elements commonly found in urinary sediment.
8. Given charts, kodachrome slides, pictures, and patient samples from the hospital, the student will distinguish and enumerate the formed elements found in a minimum of 20 urinary sediments within 95% accuracy of the values obtained by the instructor.
9. Given "positive and negative controls," the student will test the controls in the same manner as a patient urine specimen, obtaining results within the specified ranges, and state corrective action to be taken if controls are out of range.
10. Utilizing case studies, the student will relate the findings on a routine urinalysis to the appropriate disease state.
11. Given suitable case studies and text, the student will suggest the probable inborn error of metabolism and select the screening tests used in identification.
12. Given a sample of mock cerebrospinal fluid, the student will describe the macroscopic appearance and the microscopic structures (including a red cell and white cell count).
13. Utilizing charts and text, the student will recall normal fecal components and the procedure for occult blood.
14. Given pictures, charts, and text the student will distinguish the composition and appearance along with proper collection and handling of the miscellaneous body fluids.
15. Obtaining material from the York Technical College Library and following the guidelines given by the instructor, students will collaborate in groups to develop a presentation to the class on a renal disease/inborn error of metabolism.
16. At the end of the semester, the student will perform a complete urinalysis on five unknown specimens to count as one test grade.
17. Utilizing information obtained in MLT 101 on professionalism, the student will practice appropriate dress, conduct and attitude at all times.

**Note:** For further objectives, refer to the learning objectives at the beginning of each chapter in the text.

## **COURSE REQUIREMENTS**

In order to successfully complete MLT 108, the following requirements must be met:

1. Attend lecture/lab sessions consistently. Students who are absent from class more than 10 percent of the hours assigned may be withdrawn. Three tardies constitute one (1) absence. A grade of "W" is assigned if the student's last date of attendance is on or before midterm. If a student is withdrawn from a course and the last date of attendance is after midterm, the grade assigned may be a "W" or a "WF."
2. Students will adhere to the student code of conduct as described in the York Technical College Catalog and Handbook. Students will conduct themselves with dignity and maintain high standards of responsible citizenship. Any student caught cheating or involved in any other academic dishonesty will be given a grade of zero and will be subject to further disciplinary action.

## **EVALUATION STRATEGIES/GRADING**

Laboratory exercises will be graded as "S" (Satisfactory) or "U" (Unsatisfactory). A grade of S must be attained on each exercise before it is turned in to the instructor. In addition to tests, students will be graded on unknown specimens and a presentation on a renal disease or inborn error of metabolism.

Students must average a 70% or better on the three written tests, the final exam, unknowns, and the report. A grade of C or better is required for successful completion of the course and to progress in the MLT program.

<b>Grading Scale:</b>	90 - 100	A
	80 - 89	B
	70 - 79	C
	60 - 69	D
	<60	F

**NOTE:** If a student must be absent on the day of a test, he/she must notify the instructor prior to the test time in order to be allowed to take a make-up test. If the instructor is not notified, a grade of 0 will be assigned. Missed tests will be given the last week of the semester and arrangements are the student's responsibility.

### **ENTRY LEVEL SKILLS**

Student should be familiar with the microscope, pipetting, the metric system, centrifuges, and the guidelines for laboratory safety.

**PREREQUISITES:** None\*

**CO-REQUISITES:** None\*

**\*Note:** MLT classes must be taken in accordance with the curriculum display as outlined in the college catalog and MLT program handbook.

### **DISABILITIES STATEMENT**

Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Special Resources Offices (SR) at 803-327-8007 in the 300 area of Student Services. The SRO coordinates reasonable accommodations for students with documented disabilities.