MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty is required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT.        MLT                       COURSE NUMBER:    MDLT 2110

NUMBER OF CREDITS:  2

COURSE TITLE: Clinical Chemistry II

CATALOG DESCRIPTION: This course is a continuation of MDLT 1125 Clinical Chemistry I. Students continue to develop skills in the performance of the chemical analysis of blood. Lectures continue to correlate laboratory results with clinical findings. Content of the course includes renal, acid/base balance, electrolytes, endocrinology & thyroid, gastric & pancreatic function, toxicology, and hormones.

AUDIENCE: Second year MLT students

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area: by meeting the following competencies:
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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: MDLT 1100 Intro to Laboratory Science, CHEM1150 Survey of Chemistry, and MDLT 1125 Clinical Chemistry I

LENGTH OF COURSE : 2 credits (2/0)

THIS COURSE IS USUALLY OFFERED:
Every other year  fall X spring   summer   undetermined

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a.
   b.

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a.
3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. 
   b. 

4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. 
   b. 

TOPICS TO BE COVERED:
renal, acid/base balance, electrolytes, endocrinology & thyroid, gastric & pancreatic function, toxicology, and hormones.

LIST OF EXPECTED COURSE OUTCOMES:
The student will:
1. Define terms related to acid-base chemistry
2. Define buffer and explain the role of buffers in maintaining acid/base balance
3. Define metabolic and respiratory acidosis and alkalosis and their laboratory parameters
4. Describe the procedure and principles of pCO2 and pO2 measurements
5. Describe the procedure and principles of pH measurement by potentiometry
6. Explain Boyles, Law, Charles law, Gay-Lussac’s Law, and general gas laws
7. Describe the respiratory and renal regulation of acid basic balance
8. Describe endocrinology and thyroid disorders
9. Discuss thyroid antibodies and thyroid binding proteins
10. Discuss thyroid testing and interpret thyroid lab results
11. Describe the regulation of thyroid hormones
12. List therapeutic drug categories
13. Understand therapeutic ranges
14. Discuss drugs of abuse and the testing of them/toxicology
15. List various hormones and their origin and action
16. Discuss the role of calcium and phosphate metabolism
17. Correlate laboratory tests as they relate to diseases
18. Discuss reproductive hormones
19. Explain electrolytes and their role in homeostasis
20. Explain gastric and pancreatic functions

LEARNING/TEACHING TECHNIQUES used in the course are:
☐ Collaborative Learning  ☑ Problem Solving
☑ Student Presentations  ☐ Interactive Lectures
☐ Creative Projects  ☐ Individual Coaching
☑ Lecture  ☐ Films/Videos/Slides
ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

- X Reading
- X Tests
- X Individual Projects
- □ Oral Presentations
- X Worksheets
- □ Collaborative Projects
- X Textbook Problems
- □ Papers
- □ Portfolio
- X Group Problems
- □ Term Paper
- X Other (describe below)
- Case studies

EXPECTED STUDENT LEARNING OUTCOMES:

**Veteran Services:** Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

The information in this course outline is subject to revision

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

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