

# Minnesota State College Southeast

## MEDL 2110: Clinical Chemistry 2

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites:

This course requires the following prerequisite

MEDL 1130 - Clinical Chemistry 1

Corequisites: None

MnTC Goals: None

This course is a continuation of Clinical Chemistry 1 and covers the theory and clinical correlations of blood gases, drugs of abuse, therapeutic drug monitoring, endocrinology, toxicology and tumor markers. Concepts that are basic to the operation and maintenance of automated laboratory instruments will be discussed. Students will perform specimen analysis using automated analyzers and gain experience in a simulated clinical Chemistry laboratory. (Prerequisite: MEDL1130. Must be a Medical Laboratory Technician accepted student) (3 credits: 2 lecture/1 lab)

**B. COURSE EFFECTIVE DATES:** 05/07/2012 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Understand the basic physiology of the respiratory, digestive, endocrine, and reproductive systems
2. Examine the use of tumor makers and therapeutic drugs
3. Describe basic anatomy and physiology as it relates to the analytes tested in the clinical chemistry laboratory
4. Demonstrate the correlation between analytes measured in the clinical chemistry laboratory and disease states
5. Recognize unexpected clinical chemistry results and take appropriate action
6. Utilize effective oral and written communication skills

#### **D. LEARNING OUTCOMES (General)**

1. Evaluate blood gas analysis and compare respiratory disorders using blood gas parameters
2. Identify the endocrine system and explore the various endocrine disorders
3. Describe reproductive endocrinology and fetal testings
4. Relate malignancy disorders and tumor markers
5. Evaluate therapeutic drug monitoring including peak and trough drug levels
6. Illustrate the common toxicological testing performed in the laboratory and the implications for human disease
7. Demonstrate the automated analysis of various chemical constituents of plasma, serum and other body fluids
8. Relate abnormalities of chemical constituents to cardiovascular, renal, liver, gastrointestinal, and bone disorders and diseases
9. Given a common tumor marker:
  - a. Critique a primary research article using evidence based medicine principles.
  - b. Construct and deliver an informative PowerPoint presentation about the analyte
10. Adopt proper policies and procedures provided to complete clinical chemistry testing in the laboratory setting
11. Demonstrate the skills and abilities needed to independently perform clinical chemistry laboratory procedures
12. Participate in assimilation laboratory experience

#### **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

#### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

#### **G. SPECIAL INFORMATION**

None noted