

## CLS 125: Introduction to Clinical Laboratory Science

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### I. Course Description

This course is designed as an introduction for those without prior knowledge of medical laboratory medicine or for those who would like to know a little more. An overview of laboratory safety, phlebotomy, immunology, immunohematology, hematology, coagulation, clinical chemistry, microbiology, and urinalysis will be examined.

### II. Format

One hour lecture and two hours lab per week.

### III. SHCP Student Performance Learning Outcomes

An \* denotes outcomes most relevant to this course

- Relate theoretical constructs from the biological, physical, social and behavioral sciences to the knowledge of health, disease and health systems \*
- Apply principles of written, verbal and non-verbal communication to interactions with colleagues in learning, among disciplinary professionals and with clients in health care \*
- Discuss how health care evolved into current policy and systems of health issues and their delivery
- Assess moral, ethical and values-based dimensions of health issues and their implications on outcomes
- Compare and contrast fields of healthcare and the impacts of interdisciplinary practice \*
- Apply basic research methodology and appreciate the role of research in understanding and improving healthcare
- Analyze the dimensions of diversity and geographical awareness in relation to health care implications
- Demonstrate proficiency in self learning and developing professionalism \*
- Evaluate issues in healthcare using scientific reasoning and evidence-based research
- Synthesize individual knowledge base directed to collaborative problem-solving of healthcare issues \*
- Apply computer technology and data management skills \*
- Demonstrate discipline appropriate proficiencies \*

**IV. Enduring Understandings**

Students will understand that ....

- The clinical laboratory, and the professionals that work in it, play a critical role in the delivery of healthcare
- Physicians cannot do what they do without the work of the clinical lab
- Clinical laboratories are staffed by highly trained and specialized professionals
- Clinical Laboratory Science is a diverse profession, filled with endless opportunities
- Safety is an essential element in the lab environment

**V. Essential Questions**

- What are the functions of the clinical lab
- What knowledge, skills and dispositions are required of Clinical Laboratory Scientists
- What information does the lab give to a physician that aids in patient care
- What is it like to work as a Clinical laboratory professional
- Why does safety play an essential role in the clinical lab environment

**VI. Knowledge (Know):**

Students will be able to/can ...

- Explain the basic role of the clinical lab
- Describe basic lab tests and their purpose
- Describe basic elements of, and in, blood and explain their functions
- Explain what a medical technologist does and what it takes to work as a laboratory professional
- Describe basic safety protocols that are essential to clinical labs

**VII. Skills (Able to do):**

Students will be able to/can ...

- Perform basic lab tests by following written and verbal procedures
- Properly utilize lab analyzers, microscopes and other lab equipment and supplies to run basic lab test procedures
- Interpret results of basic lab tests as they might relate to a patient's condition
- Work with others to perform lab tests, and to predict, interpret and explain test results
- Practice proper laboratory safety protocols while performing lab tests

VIII. **Dispositions (Value/Appreciate):**

Students will be able to/can ...

- Explain the knowledge and skills required of laboratory professionals
- Realize the importance of the clinical lab
- Explain basic lab tests and what the results might indicate
- Explain the importance of following safety protocols
- Recognize if Clinical Laboratory Science is a career worth further consideration and consider all the possibilities that go along with it

**Assignments, Policies and other Considerations**

I. **Reading and other materials**

- Basic Medical Laboratory Techniques, 6<sup>th</sup> edition ( Rental )
- NSC Blood and Airborne Pathogens, 2012 ( Purchase )
- CLS 125 – Introduction to CLS, Lab Manual ( Purchase )
- Medtraining Lessons ( on-line )

II. **Attendance**

**Regular attendance is mandatory. Missed laboratory sessions result in a zero (0) for that days assigned laboratory exercise.** Repeated tardiness will affect your final course grade. Plus or minus grades may be used at the discretion of the instructor. The numerical grade correlation will be:

93 – 100	A	77 – 79	C+
90 – 92	A-	73 - 76	C
87 – 89	B+	70 - 72	C-
83 - 86	B	67 – 69	D+
80 - 82	B-	60 – 65	D
		< 60	F

Students are held responsible for lecture material, as well as handouts distributed and assigned readings in reference texts and on the web. Students are expected to attend all labs. The students may be allowed to attend an alternate section of lab at the discretion of the instructor. Prior arrangements **MUST** be made with the instructor if the student must switch labs – students are not allowed to do this without prior instructor consent. Accommodations may not be granted based on lab exercise or allowable seating space.

### **III . Assignments**

All assignments are due at the beginning of each lab period. Assignments will not be accepted if the student is observed doing them while in class. If the student is unable to attend a lab period for any reason, the assigned work is still due at the beginning of the lab period – it may not be turned in late. It is the responsibility of the student to turn in work ahead of time for any absence. In addition, if a student is permitted to switch lab sections, the assigned work is still due at the beginning of the student's normal lab section. For example;

If a student's lab section meets on a Tuesday and the student is permitted to attend the lab on Thursday of the same week, his/her assigned work is still due on the Tuesday that his/her lab would normally meet. It is up to the student to ask for clarification if there is any confusion.

Any work not handed in by the assigned due date will result in a zero. Answer keys are posted each week and late work will not be accepted.

Prelabs are generally due prior to the current week's labs – Postlabs and lab reports are generally due the week following the labs. Students are also expected to complete all assigned readings and come to lab prepared to do each week's lab exercise.

Online lessons through the medtraining website will be periodically assigned. It is the student's responsibility to complete the assigned module readings and complete the associated quiz by the date indicated. Quizzes must be passed with a minimum of 80%. Each student may take as many times as needed to complete with the 80%, however, the score for the assignment will come from the average of the FIRST 2 attempts.

It is the student's responsibility to ask for clarification if confused.

Working with others is accepted and encouraged, however, the work must be the student's own original work. Any plagiarism or copied answers or work will result in a zero and potential academic fraud.

### **IV. Assessment**

Quizzes and worksheets will be given at the discretion of the instructor. Laboratory exercises must be completed and results reported per instruction. There will be absolutely no make-up labs due to the unstable nature of the materials and reagents we are using.

V. **Derivation of Course Grades**

Course grades will be derived from a percentage of the total points possible. Point values will be assigned to the following components:

Attendance

Worksheets & Quizzes

Lab exercises / Prelab exercises

Participation

Any extra credit offered and completed

Final Exam