

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE
ACADEMIC AFFAIRS

Course Number: BIO-109L Class/Lect. Hours: 0 Lab Hours: 3 Credits: 1 Dept.: Biology

Course Title: Forensic Biology - Laboratory Semester: _____ Year: _____

Course description: This course will provide students with laboratory experiences that will introduce them to the principles and techniques of Forensic Biology with a strong emphasis on the basic underlying biology. Exercises will reinforce material from the associated lecture while also developing skills in critical data analysis.

Corequisite – Forensic Biology lecture

Course Number: _____

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Course Objectives	Competencies
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Primary learning goals addressed:

1. Quantitative literacy
2. Critical thinking
3. Computer literacy
4. Written and oral communication

Lab safety. Measurement and the metric system

1. Knowledge of the safety features of the lab.
2. Knowledge of appropriate safety behavior in the lab.
3. Knowledge of metric units, metric measurement and metric conversions.
4. Demonstrate quantitative reasoning in performing these calculations.

Lab calculations and solution making

1. Demonstrate ability to calculate moles and dilution ratios.
2. Demonstrate ability to make and dilute solutions of an indicated molarity, ratio, or volume.

Microscopy and aseptic technique

1. Demonstrate ability to use and properly handle microscope.
2. State the concepts of aseptic technique.
3. Demonstrate aseptic technique

Spectrophotometry – salicylates in blood

1. State the principles of spectrophotometry
2. Perform a spectrophotometric analysis and interpret the results.

Serology – Blood typing

1. State the biologic principles of blood typing.
2. State the biologic relevance of humans having blood of different immunological types.
3. Perform blood typing and interpret the results

Chromatography – Analysis of pigments in biological materials of various origin

1. State the physical principles of chromatography.
2. State three or more uses of chromatography.
3. Perform a chromatographic analysis and interpret the results.

Gel electrophoresis – Is this blood human?

1. State the physical principles of gel electrophoresis.
2. Perform an electrophoretic analysis and interpret the results.

Course Objectives	Competencies
<p>Polymerase chain reaction.</p>	<ol style="list-style-type: none"> 1. State the principle and basic steps of the polymerase chain reaction. 2. Successfully perform a polymerase chain reaction.
<p>Blood spatter analysis</p>	<ol style="list-style-type: none"> 1. Successfully analyze blood spatter patterns to determine the angle of impact. 2. State the importance of knowing the angle of impact.
<p>Crime scene analysis</p>	<ol style="list-style-type: none"> 1. Use information learned in the course to demonstrate the ability to critically observe a simulated crime scene, determine what evidence to gather, what tests to perform; and how to use the data to draw conclusions concerning the putative crime. 2. Use written and oral communication skills to communicate the student's chain of reasoning and conclusions concerning the crime scene analysis.