

# Course Outline

Public Services

REVISED: August/2017

**Job Title:**  
Security Guard

**78-85-60**

**Career Pathway:**  
Public Safety

## Forensic Science

**Industry Sector:**  
Public Services

**Credits:** 15

**Hours:** 180

**O\*NET-SOC CODE:**  
33-9032.00

**CBEDS Title:**  
Forensic Science

**CBEDS No.:**  
5840

### Course Description:

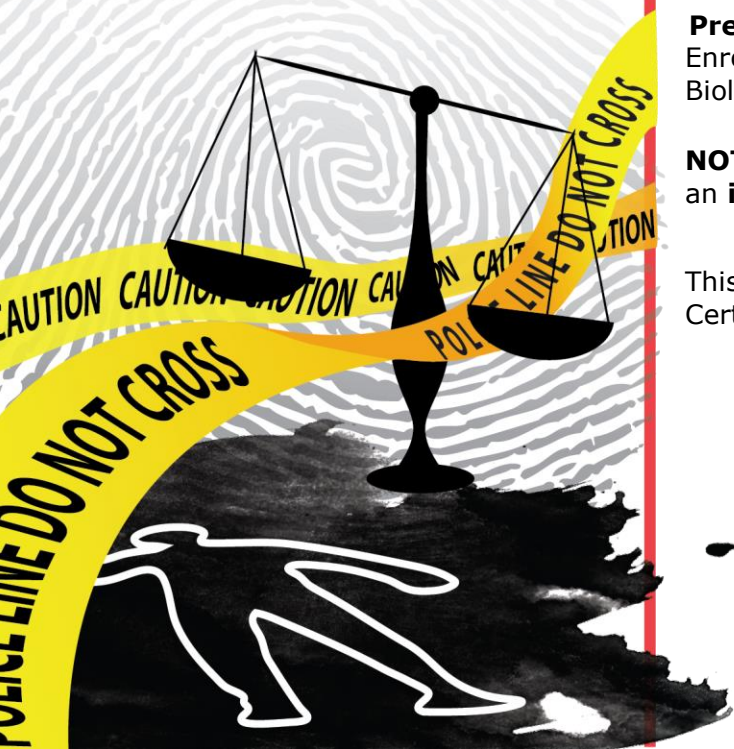
This competency-based course is designed to introduce the student to protective service careers. It provides theory and hands-on demonstration of the science behind forensic science. Technical instruction includes: orientation and safety, critical thinking skills, observation skills, and employability skills. Emphasis is placed on: crime scene investigation and evidence collection, study of hair, fibers and textiles, pollen and spore examination, fingerprint identification, DNA fingerprinting, blood and blood spatter, drug identification and toxicology, handwriting analysis, forgery, and counterfeiting, death: meaning, manner mechanism, cause, and time, soil examination, forensic anthropology, glass evidence, casts and impressions, tool marks, and ballistics. The competencies in this course are aligned with the California High School Academic Content Standards and the California Career Technical Education Model Curriculum Standards.

### Prerequisites:

Enrollment requires successful completion of Biology/1 and Biology/2.

**NOTE:** For Perkins purposes this course has been designated as an **introductory/concentrator** course.

This course cannot be repeated once a student receives a Certificate of Completion.



## ***COURSE OUTLINE COMPETENCY-BASED COMPONENTS***

A course outline reflects the essential intent and content of the course described. Acceptable course outlines have six components. (Education Code Section 52506). Course outlines for all apportionment classes, including those in jails, state hospitals, and convalescent hospitals, contain the six required elements:

(EC 52504; 5CCR 10508 [b]; Adult Education Handbook for California [1977], Section 100)

### **COURSE OUTLINE COMPONENTS**

### **LOCATION**

#### **GOALS AND PURPOSES**

Cover

The educational goals or purposes of every course are clearly stated and the class periods are devoted to instruction. The course should be broad enough in scope and should have sufficient educational worth to justify the expenditure of public funds.

The goals and purpose of a course are stated in the COURSE DESCRIPTION. Course descriptions state the major emphasis and content of a course, and are written to be understandable by a prospective student.

#### **PERFORMANCE OBJECTIVES OR COMPETENCIES**

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Objectives should be delineated and described in terms of measurable results for the student and include the possible ways in which the objectives contribute to the student's acquisition of skills and competencies.

Performance Objectives are sequentially listed in the COMPETENCY-BASED COMPONENTS section of the course outline. Competency Areas are units of instruction based on related competencies. Competency Statements are competency area goals that together define the framework and purpose of a course. Competencies fall on a continuum between goals and performance objectives and denote the outcome of instruction.

Competency-based instruction tells a student before instruction what skills or knowledge they will demonstrate after instruction. Competency-based education provides instruction which enables each student to attain individual goals as measured against pre-stated standards.

Competency-based instruction provides immediate and continual repetition and In competency-based education the curriculum, instruction, and assessment share common characteristics based on clearly stated competencies. Curriculum, instruction and assessment in competency-based education are: explicit, known, agreed upon, integrated, performance oriented, and adaptive.

## ***COURSE OUTLINE COMPETENCY-BASED COMPONENTS***

### ***(continued)***

#### **COURSE OUTLINE COMPONENTS**

#### **LOCATION**

##### **INSTRUCTIONAL STRATEGIES**

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Instructional techniques or methods could include laboratory techniques, lecture method, small-group discussion, grouping plans, and other strategies used in the classroom.

Instructional strategies for this course are listed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructional strategies and activities for a course should be selected so that the overall teaching approach takes into account the instructional standards of a particular program, i.e., English as a Second Language, Programs for Adults with Disabilities.

##### **UNITS OF STUDY, WITH APPROXIMATE HOURS ALLOTTED FOR EACH UNIT**

Cover

The approximate time devoted to each instructional unit within the course, as well as the total hours for the course, is indicated. The time in class is consistent with the needs of the student, and the length of the class should be that it ensures the student will learn at an optimum level.

pp. 7-20

Units of study, with approximate hours allotted for each unit are listed in the COMPETENCY AREA STATEMENT(S) of the course outline. The total hours of the course, including work-based learning hours (community classroom and cooperative vocational education) is listed on the cover of every CBE course outline. Each Competency Area listed within a CBE outline is assigned hours of instruction per unit.

##### **EVALUATION PROCEDURES**

pp. 22-23

The evaluation describes measurable evaluation criteria clearly within the reach of the student. The evaluation indicates anticipated improvement in performances as well as anticipated skills and competencies to be achieved.

Evaluation procedures are detailed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructors monitor students' progress on a continuing basis, assessing students on attainment of objectives identified in the course outline through a variety of formal and informal tests (applied performance procedures, observations, and simulations), paper and pencil exams, and standardized tests.

##### **REPETITION POLICY THAT PREVENTS PERPETUATION OF STUDENT ENROLLMENT**

Cover

After a student has completed all the objectives of the course, he or she should not be allowed to reenroll in the course. There is, therefore, a need for a statement about the conditions for possible repetition of a course to prevent perpetuation of students in a particular program for an indefinite period of time.

## ***ACKNOWLEDGMENTS***

Thanks to ALEJANDRA SALCEDO and LUZ GRANADOS for developing and editing this curriculum. Acknowledgment is also given to ERICA ROSARIO for designing the original artwork for the course covers.

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# **CALIFORNIA CAREER TECHNICAL EDUCATION MODEL CURRICULUM STANDARDS**

## **Public Services Industry Sector**

### **Knowledge and Performance Anchor Standards**

#### **1.0 Academics**

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Public Services academic alignment matrix for identification of standards.

#### **2.0 Communications**

Acquire and accurately use Public Services sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

#### **3.0 Career Planning and Management**

Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

#### **4.0 Technology**

Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Public Services sector workplace environment.

#### **5.0 Problem Solving and Critical Thinking**

Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Public Services sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.

#### **6.0 Health and Safety**

Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Public Services sector workplace environment.

#### **7.0 Responsibility and Flexibility**

Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Public Services sector workplace environment and community settings.

#### **8.0 Ethics and Legal Responsibilities**

Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

#### **9.0 Leadership and Teamwork**

Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the Cal-HOSA and SkillsUSA career technical student organizations.

#### **10.0 Technical Knowledge and Skills**

Apply essential technical knowledge and skills common to all pathways in the Public Services sector, following procedures when carrying out experiments or performing technical tasks.

#### **11.0 Demonstration and Application**

Demonstrate and apply the knowledge and skills contained in the Public Services anchor standards, pathway standards, and performance indicators in classroom, laboratory and workplace settings, and through the Cal-HOSA and SkillsUSA career technical student organizations.

## ***Public Services Pathway Standards***

### **A. Public Safety Pathway**

The Public Safety pathway prepares students with a broad-based foundational knowledge in careers that involve public safety. The educational foundation will assist students who wish to pursue related professional training at the postsecondary level. Students will gain experience through classroom instruction, hands-on training, and community exercises. The evolving integration of state public safety organizations, their connections with federal and state intelligence and security agencies, interoperability and coordination of effort, and the shared mission to protect the public in a post-9/11 world are areas of emphasis for the pathway. The careers included in this pathway primarily address law enforcement services, homeland and cyber security services, and correctional services.

#### **Sample occupations associated with this pathway:**

- ◆ Animal Control Worker
- ◆ Correctional Officer/Probation Officer
- ◆ Law Enforcement Officer
- ◆ Loss Prevention Specialist
- ◆ Military Service

- A1.0 Demonstrate an awareness of the personal, physical, and psychological qualities found in successful public safety job candidates, and recall critical types of decisions and outcomes which determine employability in public safety occupations.
- A2.0 Describe the history, shared mission, and roles of public safety agencies and professionals at the national, state, and local government levels.
- A3.0 Demonstrate an understanding of the appropriate level of nutrition, fitness, and agility required by the public safety career fields.
- A4.0 Employ active listening, concise reporting, and familiarity with professional equipment to communicate effectively.
- A5.0 Understand the laws, ordinances, regulations, and organizational policies that guide public safety career fields.
- A6.0 Know the skills and equipment needed to deal with various types of situations found in public safety occupations (e.g., working with special populations, responding to emergencies, and assisting with incidents).
- A7.0 Demonstrate an understanding of the major elements and career opportunities within the United States Department of Defense (DOD), including the Army, Navy, Marine Corps, Air Force, and Coast Guard.
- A8.0 Demonstrate an understanding of the functions and career opportunities within the U.S. Department of Homeland Security (DHS).
- A9.0 Demonstrate an understanding of the functions of the U.S. Foreign Service.

**CBE**  
**Competency-Based Education**

**COMPETENCY-BASED COMPONENTS**  
**for the Forensic Science Course**

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p><b>A. ORIENTATION AND SAFETY</b></p> <p>Understand, apply, and evaluate classroom and workplace policies and procedures used in accordance with federal and state regulations.</p>	<ol style="list-style-type: none"> <li>Describe the scope and purpose of the course.</li> <li>Identify classroom policies and procedures.</li> <li>Describe the overall course content as a part of the Linked Learning Initiative.</li> <li>List the different occupations in the Public Services Industry Sector which have an impact on the role of forensic investigators.</li> <li>Describe the opportunities available for promoting gender equity and the representation of non-traditional populations in the field of forensic investigation.</li> <li>Compare the actual job duties of a forensic investigator with those as portrayed by the media.</li> <li>Describe the impact of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System for the forensic investigation office and laboratory.</li> <li>Evaluate the impact of Environmental Protection Agency (EPA) legislation on the Public Service Industry Sector practices.</li> <li>Describe and demonstrate the techniques for contacting proper authorities for the removal of hazardous materials based on the EPA standards.</li> <li>Demonstrate proper use and care of tools and related equipment.</li> <li>Demonstrate proper use of electrical testing equipment.</li> <li>State precautions related to: <ol style="list-style-type: none"> <li>open flames</li> <li>using flammable liquids</li> <li>safe use and storage of flammable liquids, materials, and safety supplies</li> <li>wearing of eye protection</li> </ol> </li> <li>Describe and demonstrate the use of the Material Safety Data Sheet (MSDS) as it applies to forensic investigators.</li> <li>Explain the purpose of the California Occupational Safety and Health Administration (CalOSHA) and its laws governing forensic scientists.</li> <li>State the Occupational Safety and Health Administration (CalOSHA) workplace requirements for handling contaminated samples.</li> <li>Describe classroom and workplace first aid and emergency procedures according to American Red Cross (ARC) standards.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 3, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Health and Safety: 6.1, 6.7 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A1.1, A2.4, A2.5, A2.9, A4.1, A5.1, A6.10</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(4 hours)	17. Explain how each of the following insures a safe workplace: <ol style="list-style-type: none"> <li>employees' rights as they apply to job safety</li> <li>employers' obligations as they apply to job safety</li> </ol> 18. Pass the designated safety test with 100% accuracy.	
<b>B. CRITICAL THINKING SKILLS</b>  Understand, apply, and evaluate principles and practices used to promote critical thinking skills for students.	<ol style="list-style-type: none"> <li>Identify and describe the steps and procedures involved in defining and clarifying issues or problems.</li> <li>Describe the importance of determining the adequacy of information to justify a conclusion and to predict probable consequences.</li> <li>Describe and demonstrate affective techniques used to sharpen student critical thinking skills.</li> <li>Describe macro-cognitive techniques used to sharpen student critical thinking skills.</li> <li>Describe micro-cognitive techniques used to sharpen student critical thinking skills.</li> </ol>	<b>Career Ready Practice:</b> 2, 5  <b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Demonstration and Application: 11.1  <b>CTE Pathway:</b> A2.9, A4.1
<b>C. OBSERVATION SKILLS</b>  Understand, apply, and evaluate the importance of good observation skills.	<ol style="list-style-type: none"> <li>Define the following:               <ol style="list-style-type: none"> <li>analytic skills</li> <li>deductive reasoning</li> <li>eyewitness</li> <li>fact</li> <li>forensic science</li> <li>logical</li> <li>observation</li> <li>opinion</li> <li>perception</li> </ol> </li> <li>Describe the changes that occur in the brain during observation activities.</li> <li>Describe the factors that influence eyewitness accounts.</li> <li>State the importance of good observational skills to a forensic investigator.</li> <li>Explain how eyewitness accounts can differ after observing the same event.</li> <li>Demonstrate different factors that can influence a person's ability to observe.</li> <li>Describe language skills guidelines used in written reports for forensic investigators in the following areas:               <ol style="list-style-type: none"> <li>sentence construction</li> <li>parts of speech</li> <li>subject-verb agreement</li> <li>punctuation</li> </ol> </li> </ol>	<b>Career Ready Practice:</b> 1, 2, 5  <b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1, 10.3 Demonstration and Application: 11.1  <b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	8. Write a forensic report to students in a forensic science class describing the usefulness of eyewitness evidence in a case. 9. Pass the test on observation skills with 80% or better.	
<b>D. CRIME SCENE INVESTIGATION AND EVIDENCE COLLECTION</b>  Understand, apply, and evaluate the principles and techniques of crime scene investigation and evidence collection.	1. Define the following: a. chain of custody b. circumstantial evidence c. class evidence d. crime-scene investigation e. direct evidence f. first responder g. individual evidence h. paper bindle i. primary crime scene j. secondary crime scene trace evidence 2. Describe the history of collecting evidence for forensic investigation. 3. Describe Locard's exchange principle. 4. Identify examples of trace evidence. 5. Distinguish between direct and circumstantial evidence. 6. Identify the type of professionals who are present at a crime scene. 7. Describe the seven steps of a crime scene investigation. 8. Explain the importance of securing a crime scene. 9. Identify the methods by which a crime scene is documented. 10. Describe and demonstrate the proper technique in collecting and packaging evidence. 11. Describe how crime scene evidence is analyzed. 12. Describe language skills guidelines used in written memos for forensic investigators in the following areas: a. sentence construction b. parts of speech c. subject-verb agreement d. punctuation 13. Write a forensic memo to police recruits describing how and why it is important to properly secure and preserve a crime scene. 14. Pass the test on crime scene evidence with 80% or better.	<b>Career Ready Practice:</b> 1, 2, 5  <b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1, 10.3 Demonstration and Application: 11.1  <b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10
<b>E. THE STUDY OF HAIR</b>  Understand, apply, and evaluate hair analysis methods.	1. Define the following: a. class evidence b. comparison microscope c. cortex d. cuticle e. hair follicle f. individual evidence g. keratin h. medulla	<b>Career Ready Practice:</b> 1, 2, 5  <b>CTE Anchor:</b> Academics: 1.0 Communications: 2.5

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ul style="list-style-type: none"> <li>i. medullary index</li> <li>j. melanin granules</li> <li>k. neutron activation analysis</li> <li>l. trace evidence</li> </ul> <ol style="list-style-type: none"> <li>2. Describe the history and role of hair analysis in forensic investigation.</li> <li>3. Describe the structure and function of hair.</li> <li>4. Describe variations in the structure of the:               <ul style="list-style-type: none"> <li>a. medulla</li> <li>b. cortex</li> <li>c. cuticle</li> </ul> </li> <li>5. Distinguish between human and nonhuman animal hair.</li> <li>6. Review problems involving whole number problems, using arithmetic operations (addition, subtraction, multiplication, and division).</li> <li>7. Calculate the medullary index for a hair.</li> <li>8. Describe and demonstrate distinguishing hairs from individuals belonging to broad racial categories.</li> <li>9. Describe and demonstrate how hair samples from a crime scene and from a suspect can be from the same person.</li> <li>10. Write a forensic report to a court showing why, based on hair evidence, a particular suspect can be linked to a crime scene.</li> <li>11. Pass the test on the study of hair with 80% or better.</li> </ol>	<p>Problem Solving and Critical Thinking: 5.4</p> <p>Technical Knowledge and Skills: 10.1</p> <p>Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>
<p>F. FIBERS AND TEXTILES</p> <p>Understand, apply, and evaluate methods for analyzing fibers and textiles.</p>	<ol style="list-style-type: none"> <li>1. Define the following:               <ul style="list-style-type: none"> <li>a. amorphous</li> <li>b. crystalline</li> <li>c. destructive testing</li> <li>d. direct transfer</li> <li>e. fiber</li> <li>f. monomer</li> <li>g. natural fiber</li> <li>h. polymer</li> <li>i. secondary transfer</li> <li>j. synthetic fiber</li> <li>k. textile</li> <li>l. weave</li> <li>m. yarn</li> </ul> </li> <li>2. Describe the history and role of fiber analysis in forensic investigations.</li> <li>3. Describe how principle characteristics of common fibers are used in their identification.</li> <li>4. Describe how textiles are woven.</li> <li>5. Identify and describe common weave patterns of textile samples.</li> <li>6. Compare and contrast various types of fibers through physical and chemical analysis.</li> <li>7. Compare and contrast various thread counts through physical analysis.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5</p> <p>Problem Solving and Critical Thinking: 5.4</p> <p>Technical Knowledge and Skills: 10.1</p> <p>Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.5, A4.7, A6.10</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ol style="list-style-type: none"> <li>Compare and contrast various weave patterns through physical analysis.</li> <li>Write a forensic report of the investigation of a recent crime and how the suspect was identified through fiber analysis.</li> <li>Pass the test on fibers and textiles with 80% or better.</li> </ol>	
<p>G. POLLEN AND SPORE EXAMINATION</p> <p>Understand, apply, and evaluate methods for analyzing pollen and spores.</p> <p>(10 hours)</p>	<ol style="list-style-type: none"> <li>Define the following: <ol style="list-style-type: none"> <li>angiosperm</li> <li>exine</li> <li>forensic palynology</li> <li>gymnosperm</li> <li>palynology</li> <li>pistil</li> <li>pollen "fingerprint"</li> <li>pollen profile</li> <li>pollination</li> <li>spore</li> <li>stamen</li> </ol> </li> <li>Distinguish between pollen and spores.</li> <li>Describe the history and role of pollen and spore analysis in forensic investigations.</li> <li>Classify the different organisms that produce pollen and spores.</li> <li>Summarize the different methods of pollination in plants.</li> <li>Explain how different pollination methods relate to evidence in solving crimes.</li> <li>Identify the different ways that spores are dispersed.</li> <li>State characteristics of pollen and spores used for identification in forensic studies.</li> <li>Describe and demonstrate how pollen evidence is collected at a crime scene.</li> <li>Describe and demonstrate how pollen and spore samples are analyzed and evaluated.</li> <li>Conduct library research on a crime that was solved by using spore or pollen analysis and make an oral presentation of the findings to the class.</li> <li>Pass the test on pollen and spore examination with 80% or better.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 5, 11</p> <p><b>CTE Anchor:</b> Communications: 2.5 Technology: 4.1, 4.3 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A6.10</p>
<p>H. FINGERPRINT IDENTIFICATION</p> <p>Understand, apply, and evaluate the importance of fingerprint analysis for the forensic investigator.</p>	<ol style="list-style-type: none"> <li>Define the following: <ol style="list-style-type: none"> <li>arch</li> <li>core</li> <li>delta</li> <li>fingerprint</li> <li>latent fingerprint</li> <li>loop</li> <li>minutiae</li> <li>patent fingerprint</li> <li>plastic fingerprint</li> </ol> </li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ul style="list-style-type: none"> <li>j. ridge pattern</li> <li>k. ten card</li> <li>l. whorl</li> </ul> <ol style="list-style-type: none"> <li>2. Describe the characteristics of fingerprints.</li> <li>3. Identify the basic types of fingerprints.</li> <li>4. Describe the history and role of fingerprinting in forensic investigations.</li> <li>5. Describe how criminals attempt to alter their fingerprints.</li> <li>6. Describe and demonstrate how fingerprint evidence is collected.</li> <li>7. Describe the latest fingerprint identification technologies.</li> <li>8. Describe and demonstrate matching a fingerprint to one on record.</li> <li>9. Write a forensic essay on the reliability of using fingerprints as evidence in court.</li> <li>10. Pass the test on fingerprint identification with 80% or better.</li> </ol>	<p>Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>
<p>I. DNA FINGERPRINTING</p> <p>Understand, apply, and evaluate DNA fingerprinting analysis for the forensic investigator.</p> <p>(10 hours)</p>	<ol style="list-style-type: none"> <li>1. Define the following: <ul style="list-style-type: none"> <li>a. allele</li> <li>b. chromosome</li> <li>c. Deoxyribonucleic acid (DNA) fingerprint</li> <li>d. DNA probe</li> <li>e. electrophoresis</li> <li>f. gene</li> <li>g. PCR</li> <li>h. restriction enzyme</li> <li>i. tandem</li> <li>j. Short Tandem Repeat (STR)</li> <li>k. Variable Number of Tandem Repeats (VNTR)</li> </ul> </li> <li>2. Describe the function and structure of DNA.</li> <li>3. Describe the history and role of DNA fingerprinting in forensic investigations.</li> <li>4. Explain why DNA is important in crime scene analysis.</li> <li>5. Describe how crime scene evidence is collected for DNA.</li> <li>6. Describe and demonstrate how crime scene evidence is processed for DNA.</li> <li>7. State the relationship between radioactive probes and DNA fingerprinting.</li> <li>8. Describe and demonstrate how DNA evidence is compared for matching.</li> <li>9. Describe and demonstrate how DNA fingerprinting is used to identify related or unrelated individuals.</li> <li>10. Write a forensic report to forensic science students on the advantages and disadvantages of using DNA fingerprinting as evidence in a criminal case.</li> <li>11. Pass the test on DNA fingerprinting with 80% or better.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>J. BLOOD AND BLOOD SPATTER</p> <p>Understand, apply, and evaluate the importance of blood and blood spatter analysis for the forensic investigator.</p> <p>(10 hours)</p>	<ol style="list-style-type: none"> <li>Define the following:               <ol style="list-style-type: none"> <li>agglutination</li> <li>antibodies</li> <li>antigen-antibody response</li> <li>antigens</li> <li>cell-surface protein</li> <li>lines of convergence</li> <li>point of origin</li> <li>red blood cells</li> <li>satellite drop of blood</li> <li>white blood cells</li> </ol> </li> <li>Describe the composition of blood.</li> <li>Explain the function of different blood cells.</li> <li>Describe the history and role of blood and blood spatter in forensic investigations.</li> <li>Describe and demonstrate how to screen for the presence of human blood at a crime scene.</li> <li>Describe and demonstrate the blood type from a blood sample.</li> <li>Calculate the probability of certain blood types within a population.</li> <li>Describe and demonstrate a blood spatter analysis.</li> <li>Describe the relationship between stab wound and weapon used.</li> <li>Use blood spatter evidence to recreate the events at a crime scene.</li> <li>Write a forensic report to a court showing why, based on blood evidence, a particular suspect can be linked to a crime scene.</li> <li>Pass the test on blood and blood spatter with 80% or better.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>
<p>K. DRUG IDENTIFICATION AND TOXICOLOGY</p> <p>Understand, apply, and evaluate the importance of drug identification and toxicological analysis for the forensic investigator.</p>	<ol style="list-style-type: none"> <li>Define the following:               <ol style="list-style-type: none"> <li>bioterrorism</li> <li>controlled substance</li> <li>drug</li> <li>narcotic</li> <li>negative control</li> <li>poison</li> <li>positive control</li> <li>toxicity</li> <li>toxin</li> </ol> </li> <li>Describe the goals and practice of toxicology.</li> <li>Describe the history and role of drug identification and toxicological analysis in forensic investigations.</li> <li>Identify the five types of controlled substances.</li> <li>Compare signs and symptoms of drug overdose to specific classes of drugs or toxins.</li> <li>Describe the role of various kinds of toxins in causing death.</li> <li>Describe agents that may be used in bioterrorism.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ol style="list-style-type: none"> <li>8. Perform a drug test on a substance using positive and negative controls.</li> <li>9. Write a forensic essay on drug testing in schools and its relation to the Fourth Amendment to the Constitution.</li> <li>10. Pass the test on drug identification and toxicological analysis with 80% or better.</li> </ol>	<b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10
<p>L. HANDWRITING ANALYSIS, FORGERY, AND COUNTERFEITING</p> <p>Understand, apply, and evaluate the importance of the analysis of handwriting, forgery, and counterfeiting for the forensic investigator.</p> <p>(10 hours)</p>	<ol style="list-style-type: none"> <li>1. Define the following: <ol style="list-style-type: none"> <li>a. counterfeiting</li> <li>b. document analysis</li> <li>c. document expert</li> <li>d. exemplar</li> <li>e. forgery</li> <li>f. fraudulence</li> <li>g. questioned document</li> </ol> </li> <li>2. Identify the major goals in handwriting analysis.</li> <li>3. State the legal basis for printing currency.</li> <li>4. Describe the history and role of the analysis of handwriting, forgery, and counterfeiting in forensic investigations.</li> <li>5. Describe and demonstrate types of handwriting exemplars that can be analyzed in a document.</li> <li>6. Describe technology used in handwriting analysis.</li> <li>7. Differentiate between the terms: forgery and fraudulence.</li> <li>8. Identify ways that a business can prevent check forgery.</li> <li>9. State ways that a business can deter credit card fraud.</li> <li>10. Describe features of paper currency that help detect counterfeit bills.</li> <li>11. Write a forensic memo to a court demonstrating that the student is an expert in handwriting analysis.</li> <li>12. Pass the test on handwriting analysis, forgery, and counterfeiting with 80% or better.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b>  Communications: 2.5  Problem Solving and Critical Thinking: 5.4  Technical Knowledge and Skills: 10.1  Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b>  A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>
<p>M. DEATH: MEANING, MANNER, MECHANISM, CAUSE, AND TIME</p> <p>Understand, apply, and evaluate the importance of the meaning, manner, mechanism, cause, and time of death for the forensic investigator.</p>	<ol style="list-style-type: none"> <li>1. Define the following: <ol style="list-style-type: none"> <li>a. algor mortis</li> <li>b. autolysis</li> <li>c. autopsy</li> <li>d. cause of death</li> <li>e. corpse</li> <li>f. death</li> <li>g. decomposition</li> <li>h. forensic entomology</li> <li>i. homicide</li> <li>j. instar</li> <li>k. larva/larvae</li> <li>l. livor mortis</li> <li>m. manner of death</li> </ol> </li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b>  Communications: 2.5  Problem Solving and Critical Thinking: 5.4  Technical Knowledge and Skills: 10.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ul style="list-style-type: none"> <li>n. mechanism of death</li> <li>o. pupa/pupae</li> <li>p. rigor mortis</li> <li>q. suicide</li> </ul> <ol style="list-style-type: none"> <li>2. Describe the history and role of the analysis of death in forensic investigations.</li> <li>3. Compare the following manners of death:               <ul style="list-style-type: none"> <li>a. natural</li> <li>b. accidental suicidal</li> <li>c. homicidal</li> </ul> </li> <li>4. Compare the following:               <ul style="list-style-type: none"> <li>a. cause of death</li> <li>b. manner of death</li> <li>c. mechanism of death</li> </ul> </li> <li>5. Describe the development of rigor, algor, and livor mortis following death.</li> <li>6. Describe the stages of decomposition of a corpse.</li> <li>7. Describe the succession of different types of insects that are found on a decomposing body.</li> <li>8. Describe how each of the following can be used to estimate time of death:               <ul style="list-style-type: none"> <li>a. stomach contents</li> <li>b. insect evidence</li> <li>c. algor mortis</li> <li>d. rigor mortis</li> <li>e. livor mortis</li> </ul> </li> <li>9. Describe the various environmental factors that may influence the estimated time of death.</li> <li>10. Estimate the time of death using livor mortis evidence.</li> <li>11. Estimate the time of death using insect, algor, and rigor mortis evidence.</li> <li>12. Summarize a crime report, using correct grammar, spelling, and punctuation, showing how various types of evidence established the victim's time of death.</li> <li>13. Pass the test on the meaning, manner, mechanism, cause, and time of death with 80% or better.</li> </ol>	<p>Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A6.10</p>
<p>N. SOIL EXAMINATION</p> <p>Understand, apply, and evaluate the importance of the analysis of soils for the forensic investigator.</p>	<ol style="list-style-type: none"> <li>1. Define the following:               <ul style="list-style-type: none"> <li>a. clay</li> <li>b. geology</li> <li>c. humus</li> <li>d. leaching</li> <li>e. mineral</li> <li>f. rock</li> <li>g. sand</li> <li>h. silt</li> <li>i. soil</li> </ul> </li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ul style="list-style-type: none"> <li>j. soil profile</li> <li>k. weathering</li> </ul> <ol style="list-style-type: none"> <li>2. Describe the history and role of soil analysis in forensic investigations.</li> <li>3. Identify different soil types based on:               <ul style="list-style-type: none"> <li>a. particle size</li> <li>b. color</li> <li>c. composition</li> </ul> </li> <li>4. Describe and demonstrate soil analysis by the following methods:               <ul style="list-style-type: none"> <li>a. macroscopic examination</li> <li>b. microscopic examination</li> <li>c. chemical analysis</li> <li>d. physical analysis</li> </ul> </li> <li>5. Describe how soil evidence can link suspects to crime scenes.</li> <li>6. Summarize a crime report, using correct grammar, spelling, and punctuation, showing how soil evidence eliminated or linked a suspect to a crime scene.</li> <li>7. Pass the test on soil analysis with 80% or better.</li> </ol>	<p>Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.7, A6.10</p>
<p>O. FORENSIC ANTHROPOLOGY</p> <p>Understand, apply, and evaluate the importance of forensic anthropology for the forensic investigator.</p>	<ol style="list-style-type: none"> <li>1. Define the following:               <ul style="list-style-type: none"> <li>a. anthropology</li> <li>b. brow ridge</li> <li>c. epiphysis</li> <li>d. femur</li> <li>e. forensic anthropology</li> <li>f. jaw</li> <li>g. joints</li> <li>h. mitochondrial DNA</li> <li>i. ossification</li> <li>j. osteobiography</li> <li>k. osteoblast</li> <li>l. osteoclast</li> <li>m. osteocyte</li> <li>n. osteoporosis</li> <li>o. pelvis</li> <li>p. skeletal trauma analysis</li> <li>q. skull</li> </ul> </li> <li>2. Describe the history and role of forensic anthropology in forensic investigations.</li> <li>3. Describe how bone is formed.</li> <li>4. Compare male and female skeletal remains based on the following:               <ul style="list-style-type: none"> <li>a. Skull</li> <li>b. jaw</li> <li>c. brow ridge</li> <li>d. pelvis</li> <li>e. femur</li> </ul> </li> <li>5. Describe how bones contain a record of injury and disease.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	6. Describe how a person's age can be determined by bone analysis. 7. Explain the differences in facial structure among different races. 8. Describe and demonstrate how knowledge of different racial facial structures can prove a suspect's innocence. 9. Describe the role of mitochondrial DNA in bone identification. 10. Write a forensic report showing how the family of Tsar Nicolas II of Russia was identified by their remains. 11. Pass the test on forensic anthropology with 80% or better.	
P. GLASS EVIDENCE  Understand, apply, and evaluate the importance of the analysis of glass evidence for the forensic investigator.	1. Define the following: a. amorphous b. Becke line c. density d. glass e. leaded glass f. normal line g. obsidian h. refraction i. refractive index j. Snell's law 2. Describe the history and role of glass analysis in forensic investigations. 3. Describe how glass is formed. 4. List characteristics and examples of glass. 5. Calculate the density of a piece of glass. 6. Calculate the refractive index of liquids using Snell's Law. 7. Demonstrate how the refractive index can identify different types of glass. 8. Write an analytic report based on the refractive index of glass to link a suspect to a crime. 9. Describe how glass fractures. 10. Analyze glass fracture patterns to determine how glass was broken. 11. Calculate density of different samples of glass at a crime scene and on a suspect to show the subject was or was not at a crime scene. 12. Write a forensic report, using glass evidence, identifying the presence or absence of a subject at a crime scene. 13. Pass the test on glass analysis with 80% or better.	<b>Career Ready Practice:</b> 1, 2, 5  <b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1  <b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10
Q. CASTS AND IMPRESSIONS  Understand, apply, and evaluate the importance of the analysis of casts and impressions for the forensic investigator.	1. Define the following: a. bite marks b. dental impressions c. latent impressions d. patent impressions e. plastic impressions f. sole	<b>Career Ready Practice:</b> 1, 2, 5  <b>CTE Anchor:</b> Communications: 2.5

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ul style="list-style-type: none"> <li>g. tire groove</li> <li>h. tire rib</li> <li>i. tire ridge</li> <li>j. track width</li> <li>k. tread pattern</li> <li>l. turning diameter</li> <li>m. wheelbase</li> </ul> <ol style="list-style-type: none"> <li>2. Describe the history and role of the analysis of casts and impressions in forensic investigations.</li> <li>3. Compare the following types of impressions:               <ul style="list-style-type: none"> <li>a. latent</li> <li>b. patent</li> <li>c. plastic</li> </ul> </li> <li>4. Explain how different types of impressions can be used as trace evidence.</li> <li>5. Describe and demonstrate how to make the following types of impressions:               <ul style="list-style-type: none"> <li>a. foot</li> <li>b. shoe</li> <li>c. tire</li> </ul> </li> <li>6. Describe and demonstrate how to use track width and wheelbase to identify vehicles.</li> <li>7. Describe and demonstrate how to prepare dental impressions.</li> <li>8. Describe and demonstrate how to compare dental impressions with bite marks on a victim.</li> <li>9. Write and present an oral summary of a case that showed how the analysis of one of the following eliminated or linked a suspect with a crime:               <ul style="list-style-type: none"> <li>a. tire impressions</li> <li>b. dental impressions</li> <li>c. shoe impressions</li> </ul> </li> <li>10. Pass the test on casts and impressions with 80% or better.</li> </ol>	<p>Problem Solving and Critical Thinking: 5.4</p> <p>Technical Knowledge and Skills: 10.1</p> <p>Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>
<p>R. TOOL MARKS</p> <p>Understand, apply, and evaluate the importance of the analysis of tool marks for the forensic investigator.</p>	<ol style="list-style-type: none"> <li>1. Define the following:               <ul style="list-style-type: none"> <li>a. abrasion mark</li> <li>b. cutting mark</li> <li>c. indentation mark (pry mark)</li> <li>d. tool</li> <li>e. tool mark</li> </ul> </li> <li>2. Describe the history and role of the analysis of tool marks in forensic investigations.</li> <li>3. Describe the major types of tool mark impressions</li> <li>4. State the importance of variations in tool surfaces in identifying different tools.</li> <li>5. Describe and demonstrate how tool mark evidence is collected, preserved, and documented.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5</p> <p>Problem Solving and Critical Thinking: 5.4</p> <p>Technical Knowledge and Skills: 10.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ol style="list-style-type: none"> <li>Write a forensic report to the court that states, based on tool mark evidence, why a suspect can be eliminated from or linked to a crime scene.</li> <li>Pass the test on tool marks with 80% or better.</li> </ol>	<p>Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>
<p>S. BALLISTICS</p> <p>Understand, apply, and evaluate the importance of the analysis of ballistics for the forensic investigator.</p>	<ol style="list-style-type: none"> <li>Define the following: <ol style="list-style-type: none"> <li>automatic</li> <li>ballistics</li> <li>barrel</li> <li>breech</li> <li>bullet</li> <li>caliber</li> <li>cartridge</li> <li>firearm</li> <li>fully automatic</li> <li>grooves</li> <li>gunshot residue (GSR)</li> <li>handgun</li> <li>lands</li> <li>muzzle</li> <li>pistol</li> <li>projectile</li> <li>revolver</li> <li>rifle</li> <li>rifling</li> <li>semiautomatic</li> <li>shooter</li> <li>shell casing</li> <li>trajectory</li> </ol> </li> <li>Describe the history and role of the analysis of ballistics in forensic investigations.</li> <li>Describe the difference between the following: <ol style="list-style-type: none"> <li>automatic handgun</li> <li>semi-automatic handgun</li> <li>rifle</li> <li>shotgun</li> </ol> </li> <li>Describe the difference between a bullet and a cartridge.</li> <li>Explain the relationship between rifling and the flight of the projectile.</li> <li>Explain the relationship between barrel size and caliber.</li> <li>Explain how bullets are test fired and matched.</li> <li>Explain the importance of ballistics recovery and examination at the crime scene.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5</p> <p><b>CTE Anchor:</b> Communications: 2.5 Problem Solving and Critical Thinking: 5.4 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> A2.5, A4.1, A4.3, A4.6, A4.7, A6.10</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	9. Describe and calculate the effect of gravity on the trajectory of a bullet. 10. Describe and demonstrate the position of a shooter based on bullet trajectory. 11. State the effect of bullet wounds on the body. 12. Write a forensics report that shows how firing pin analysis in a case linked or eliminated a suspect from a crime scene. 13. Pass the test on ballistics with 80% or better.	
<b>T. EMPLOYABILITY SKILLS</b>  Understand, apply, and evaluate the employability skills required in the protective services profession.	1. Summarize employer requirements for the following: <ol style="list-style-type: none"> <li>punctuality</li> <li>attendance</li> <li>attitude toward work</li> <li>quality of work</li> <li>teamwork</li> <li>timeliness</li> <li>communication skills</li> <li>computer skills and software applications</li> </ol> 2. Identify potential employers through traditional and internet sources. 3. Describe the role of electronic social networking in job searches. 4. Design sample résumés. 5. State the importance of filling out a job application legibly, with accurate and complete information. 6. Complete sample job application forms correctly. 7. State the importance of enthusiasm on a job. 8. State the importance of appropriate appearance on a job. 9. State the importance of the continuous upgrading of job skills. 10. Identify the informational materials and resources needed to be successful in an interview. 11. Describe and demonstrate appropriate interviewing techniques.	<b>Career Ready Practice:</b> 2  <b>CTE Anchor:</b> Communications: 2.5 Technology: 4.3  <b>CTE Pathway:</b> A4.1

## ***SUGGESTED INSTRUCTIONAL MATERIALS and OTHER RESOURCES***

### **TEXTBOOKS**

Bertino, Anthony J. Forensic Science: Fundamentals & Investigations. South-Western, Cengage Learning, 2009.

Saferstein, Richard. Criminalistics (10<sup>th</sup> Edition). Pearson, Prentice-Hall, 2011.

Saferstein, Richard. Forensic Science: An Introduction (2<sup>nd</sup> Edition). Pearson, Prentice-Hall, 2011.

### **RESOURCES**

Employer Advisory Board members

CDE Model Curriculum Standards for Public Service

<http://www.cde.ca.gov/ci/ct/sf/documents/pubservices.pdf>

American Academy of Forensic Sciences <http://www.aafs.org/>

American Society of Crime Laboratory Directors <http://www.asclld.org/>

Forensic Quality Services <http://www.forquality.org/>

International Association for Identification <http://www.theiai.org/>

National Association of Medical Examiners <http://thename.org/>

Society of Forensic Toxicologists and American Board of Forensic Toxicology <http://www.soft-tox.org/>

### **COMPETENCY CHECKLIST**

## ***TEACHING STRATEGIES and EVALUATION***

### **METHODS AND PROCEDURES**

- A. Lecture and discussion
- B. Multimedia presentations
- C. Visual aids
- D. Individualized instruction

### **EVALUATION**

SECTION A – Orientation and Safety – Pass the safety test with a score of 100%.

SECTION B – Critical Thinking Skills – Pass all assignments and exams on the critical thinking skills with a minimum score of 80% or higher.

SECTION C – Observation Skills – Pass all assignments and exams on observation skills with a minimum score of 80% or higher.

SECTION D – Crime Scene Investigation and Evidence Collection – Pass all assignments and exams on crime scene investigation and evidence collection with a minimum score of 80% or higher.

SECTION E – The Study of Hair – Pass all assignments and exams on the study of hair with a minimum score of 80% or higher.

SECTION F – Fibers and Textiles – Pass all assignments and exams on fibers and textiles with a minimum score of 80% or higher.

SECTION G – Pollen and Spore Examination – Pass all assignments and exams on pollen and spore examination with a minimum score of 80% or higher.

SECTION H – Fingerprint Identification – Pass all assignments and exams on fingerprint identification with a minimum score of 80% or higher.

SECTION I – DNA Fingerprinting – Pass all assignments and exams on DNA fingerprinting with a minimum score of 80% or higher.

SECTION J – Blood and Blood Spatter – Pass all assignments and exams on blood and blood spatter with a minimum score of 80% or higher.

SECTION K – Drug Identification and Toxicology – Pass all assignments and exams on drug identification and toxicology with a minimum score of 80% or higher.

SECTION L – Handwriting Analysis, Forgery, and Counterfeiting – Pass all assignments and exams on handwriting analysis, forgery, and counterfeiting with a minimum score of 80% or higher.

SECTION M – Death: Meaning, Manner, Mechanism, Cause, and Time – Pass all assignments and exams on death: meaning, manner, mechanism, cause, and time with a minimum score of 80% or higher.

SECTION N – Soil Examination – Pass all assignments and exams on soil examination with a minimum score of 80% or higher.

SECTION O – Forensic Anthropology – Pass all assignments and exams on forensic anthropology with a minimum score of 80% or higher.

SECTION P – Glass Evidence – Pass all assignments and exams on glass evidence with a minimum score of 80% or higher.

SECTION Q – Casts and Impressions – Pass all assignments and exams on casts and impressions with a minimum score of 80% or higher.

SECTION R – Tool Marks – Pass all assignments and exams on tool marks with a minimum score of 80% or higher.

SECTION S – Ballistics – Pass all assignments and exams on ballistics with a minimum score of 80% or higher.

SECTION T – Employability Skills – Pass all assignments and exams on employability skills with a minimum score of 80% or higher.

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### Statement for Civil Rights

All educational and vocational opportunities are offered without regard to race, color,  
national origin, gender, or physical disability.

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