Prepares Students for College and Careers

▲ Forensic Science (g)

COURSE CODES:

▲ROP 67032   ▲WUHSD 8055   ▲ERUSD SS448   ▲STATE (CALPADS) 8412

Industry Sector:	Public Services	**Course Leads to:**	Post-Secondary Education
Career Pathway:	Public Safety - 232		
Classroom Hours:	180	**Course Level:**	Capstone
Work Based Learning:	180 (optional)	**Approved Textbook/Curriculum:**	None

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POST-SECONDARY EDUCATION

Articulation with College	No
Dual Enrollment with College	No
UC Approved a-g elective credit	Yes, g

POST-SECONDARY MAJORS

Forensic Science
Biotechnology
Computer Forensics
Criminology
Forensic Chemistry
Genetics
Medical Microbiology and Bacteriology
Psychology

INDUSTRY CERTIFICATIONS

NONE

NEXT STEPS

ROP Admin. of Justice
ROP Admin. of Justice Academy

EMPLOYMENT

Related Careers (O*NET)

19-4092.00	Forensic Science Technicians
33-3021.02	Police Identification and Records Officers
13-2099.04	Fraud Examiners, Investigators, and Analysts
33-3021.00	Police Detectives
19-4031.00	Chemical Technicians
19-4091.00	Environmental Science and Protection Technicians, Including Health
13-1041.06	Coroners

Prerequisites: None
Recommended: 11th or 12th grade, ROP Administration of Justice

Course Description:

Forensic Science is designed to give students both theory and hands-on experience in the skills and knowledge required of a forensic crime scene investigator. Included will be an introduction to crime scene investigation, crime scene photography and diagrams as they are used in a criminal investigation. Also included is the importance of physical evidence in solving crimes, dusting and lifting fingerprints, rolling a 10- print fingerprint card, how to perform a gunshot residue test, methods for collecting and processing various types of evidence and the use of forensic light source technology in crime scene investigations. Emphasized throughout the course is the importance of effective communication and interpersonal skills, professional development, strong academic skills, problem-solving, safety and the use of technology. Academics is an integral part of this course, English, writing and higher level mathematics is emphasized. Integrated throughout the course are Common Core State Standards and Career Technical Education Standards, which include safety, communication, technology, ethics, career planning and other employability skills.

Integrated throughout the course are standards for Career Ready Practice and Academic Content Standards which include: appropriate technical skills and academic knowledge; communication skills; career planning; applied technology; critical thinking and problem solving; personal health and financial literacy; citizenship, integrity, ethical leadership and effective management; work productively while integrating cultural and global competence; creativity and innovation; reliable research strategies, and environment, social and economic impacts of decisions.

COURSE OUTLINE
I.   ORIENTATION
A. Introduce course and facilities
B. Discuss syllabus and major objectives
C. Explain attendance, grading, classroom procedures, code of conduct
D. Complete course safety requirements/test
II.   FOUNDATIONS OF LAW ENFORCEMENT FORENSIC SCIENCE
A. Research and report on the specialized occupations within the Public Services industry
B. Identify the steps in the hiring process from application to employment
C. List the eligibility requirements for various criminal justice positions
D. Explain the impact of pre-service activities on employability and/or military eligibility (e.g., financial irresponsibility, criminal record, improper social media behavior, etc.)
E. Identify the reasons for disqualification
F. Describe the physical fitness requirements and the impact of nutrition and a healthy lifestyle on employability/job performance
G. Understand the importance of ethical behavior.
H. Understand what professional conduct is and how it applies to forensics.
I. Describe unethical behavior or conduct.
J. Know the consequences of unethical behavior and how it applies to evidence collection and handling.
III. THE SCIENCE OF FORENSICS
A. Physical evidence and properties
B. Organic and Inorganic Analysis
C. Microscopy
D. Principles of Heredity
IV.   HISTORY OF LAW ENFORCEMENT FORENSICS
A. Understand the history of forensics and its' relationship to growing technology
B. Understand the role forensics plays in law enforcement investigations
C. Understand the basic elements of commonly investigated crimes:
D. Research and understand the various occupations within the Public Services industry sector
E. Discuss environmentally sound practices and sustainability within the industry sector
V.   IDENTIFYING AND PROCESSING EVIDENCE
A. Anthropology
B. Latent Fingerprints
C. Bloodstain/ Pattern Analysis
D. Forensic Toxicology
E. Trace Evidence
F. Ballistics – Firearms – Tools
G. Death Investigation- Entomology
VI. THE CRIME SCENE
A. Forensic Science
B. B. Crime Scene Investigation
a. Security the crime scene
b. Establishing a perimeter
c. Establishing a crème scene log
d. Understand and describe the methodology of identifying potential evidence
e. Documentation Methods
f. Crime scene documentation via sketching (blueprint and 3D)
g. Triangulation of critical evidence
h. Documenting crime scenes through digital photography (still)
i. Documenting crime scenes through digital video photography.
j. Documenting evidence through capturing digital images.

C. Latent Fingerprint Investigation
  a. Learn, discuss, and demonstrate the methods of obtaining fingerprints
  b. Learn and understand fingerprint interpretation
  c. Discuss forensics and courtroom testimony.

VII.   LAW ENFORCEMENT FORENSICS FIELD EXPERIENCE

A. Experience one or more of the following:
  1. Ride-along
  2. Field trip to a forensic laboratory
  3. Guest speaker from a forensic unit
  4. Guest speaker from a crime scene investigation (CSI) unit

VIII.   PREPARING FOR COLLEGE AND CAREERS

A. Review and Discuss California CTE Model Curriculum Standards for Career Ready Practice
B. Create a College and Career Plan aligned with personal goals
C. Develop job search skills including job search strategies and interviewing
D. Write and Evening of Excellence Essay
E. Complete 2 self-assessments designed to identify skills, aptitudes, and possible career paths
F. Research career options
G. Outline entrepreneurial opportunities associated with a chosen career
H. Describe factors involved in career decision making
I. Create a career portfolio with sections that include: resume, letter of introduction, college application, reference letters, cover letters, certifications, work evaluations, etc.
J. Understand how interpersonal skills developed in the classroom are applicable in the workplace
K. Identify, organize, plan, and demonstrate proper use of time, materials, and facilities

<table>
<tr><td colspan="2" style="background:#f8e0cf">ESSENTIAL STANDARDS AND KEY ASSIGNMENTS
INDUSTRY SECTOR: Public Services</td></tr>
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ESSENTIAL PATHWAY STANDARD - A1.0

KEY ASSIGNMENT

ESSENTIAL PATHWAY STANDARD - A2.0

Describe the history, shared mission, and roles of public safety agencies and professionals at the national, state, and local government levels.

KEY ASSIGNMENT

ESSENTIAL PATHWAY STANDARD – A3.0

KEY ASSIGNMENT

ESSENTIAL PATHWAY STANDARD – A4.0

Employ active listening, concise reporting, and familiarity with professional equipment to communicate effectively.

KEY ASSIGNMENT

ESSENTIAL PATHWAY STANDARDS – 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).

KEY ASSIGNMENT

STANDARDS FOR CAREER READY PRACTICE

1. **Apply appropriate technical skills and academic knowledge.** Career-ready individuals readily access and use the knowledge and skills acquired through experience and education. They make connections between abstract concepts with real-world applications and recognize the value of academic preparation for solving problems, communicating with others, calculating measures, and performing other work-related practices.

2. **Communicate clearly, effectively, and with reason.** Career-ready individuals communicate thoughts, ideas, and action plans with clarity, using written, verbal, electronic, and/or visual methods. They are skilled at interacting with others: they are active listeners who speak clearly and with purpose, and they are comfortable with terminology that is common to workplace environments. Career-ready individuals consider the audience for their communication and prepare accordingly to ensure the desired outcome.

3. **Develop an education and career plan aligned with personal goals.** Career-ready individuals take personal ownership of their educational and career goals and manage their individual plan to attain these goals. They recognize the value of each step in the educational and experiential process, and they understand that nearly all career paths require ongoing education and experience to adapt to practices, procedures, and expectations of an ever-changing work environment. They seek counselors, mentors, and other experts to assist in the planning and execution of education and career plans.

4. **Apply technology to enhance productivity.** Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring and using new technology. They understand the inherent risks—personal and organizational—of technology applications, and they take actions to prevent or mitigate these risks.

5. **Utilize critical thinking to make sense of problems and persevere in solving them.** Career-ready individuals recognize problems in the workplace, understand the nature of the problems, and devise effective plans to solve the problems. They thoughtfully investigate the root cause of a problem prior to introducing solutions. They carefully consider options to solve a problem and, once agreed upon, follow through to ensure the problem is resolved.

6. **Practice personal health and understand financial literacy.** Career-ready individuals understand the relationship between personal health and workplace performance. They contribute to their personal well-being through a healthy diet, regular exercise, and mental health activities. Career-ready individuals also understand that financial literacy leads to a secure future that enables career success.

7. **Act as a responsible citizen in the workplace and the community**. Career-ready individuals understand the obligations and responsibilities of being a member of a community and demonstrate this understanding every day through their interactions with others. They are aware of the impacts of their decisions on others and the environment around them, and they think about the short-term and long-term consequences of their actions. They are reliable and consistent in going beyond minimum expectations and in participating in activities that serve the greater good.

8. **Model integrity, ethical leadership, and effective management.** Career-ready individuals consistently act in ways that align with personal and community-held ideals and principles. They employ ethical behaviors and actions that positively influence others. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the direction and actions of a team or organization, and they recognize the short-term and long-term effects that management's actions and attitudes can have on productivity, morale, and organizational culture.

9. **Work productively in teams while integrating cultural and global competence.** Career-ready individuals contribute positively to every team, as both team leaders and team members. To avoid barriers to productive and positive interaction, they apply an awareness of cultural differences. They interact effectively and sensitively with all members of the team and find ways to increase the engagement and contribution of other members.

10. **Demonstrate creativity and innovation.** Career-ready individuals recommend ideas that solve problems in new and different ways and contribute to the improvement of the organization. They consider unconventional ideas and suggestions by others as solutions to issues, tasks, or problems. They discern which ideas and suggestions may have the greatest value. They seek new methods, practices, and ideas from a variety of sources and apply those ideas to their own workplace practices.

11. **Employ valid and reliable research strategies.** Career-ready individuals employ research practices to plan and carry out investigations, create solutions, and keep abreast of the most current findings related to workplace environments and practices. They use a reliable research process to search for new information and confirm the validity of sources when considering the use and adoption of external information or practices.

12. **Understand the environmental, social, and economic impacts of decisions.** Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact other people, organizations, the workplace, and the environment. They are aware of and utilize new technologies, understandings, procedures, and materials and adhere to regulations affecting the nature of their work. They are cognizant of impacts on the social condition, environment, workplace, and profitability of the organization.

CTE ANCHOR STANDARDS—Common Core English Language Arts Alignment

1: Academics
Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the industry sector alignment matrix for identification of standards. Note: alignment listed within each sector Anchor Standard

2: Communications Language Standard
Acquire and accurately use general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the (career and college) readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. LS 9-10, 11-12.6 Anchor Standard

3: Career Planning and Management Speaking and Listening Standard
Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. SLS 11-12.2 Anchor Standard

4: Technology Writing Standard
Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information. WS 11-12.6 Anchor Standard

5: Problem Solving and Critical Thinking Writing Standard
Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem, narrow or broaden the inquiry when appropriate, and synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. WS 11-12.7 Anchor Standard

6: Health and Safety Reading Standards for Science and Technical Subjects
Determine the meaning of symbols, key words, and other domain-specific words and phrases as they are used in a specific scientific or technical context. RSTS 9-10 11-12.4 Anchor Standard

7: Responsibility and Flexibility Speaking and Listening Standard
Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners, building on others' ideas and expressing their own clearly and persuasively. SLS 9-10 11-12.1 Anchor Standard

8: Ethics and Legal Responsibilities Speaking and Listening Standard
Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the work. SLS 11-12.1d Anchor Standard

9: Leadership and Teamwork Speaking and Listening Standard
Work with peers to promote civil, democratic discussions and decision making; set clear goals and deadlines; and establish individual roles as needed. SLS 11-12.1b Anchor Standard

10: Technical Knowledge and Skills Writing Standard
Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. WS 11-12.6 Anchor Standard

11: Demonstration and Application
Demonstrate and apply the knowledge and skills contained in the industry-sector anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and the career technical student organization.