



**Ohio**  
**Criminal Science Technology**

**Technical Competency Profile**  
**(TCP)**

***2004***

# **Ohio Criminal Science Technology**

## **Technical Competency Profile (TCP)**

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This project is a collaborative effort of the Ohio Department of Education, Ohio Board of Regents, and The University of Toledo.

## Introduction

The Criminal Science Technology Technical Competency Profile (TCP) is a strand from the Ohio Public Safety Delivery Model. As a strand within the Ohio Public Safety Delivery Model, the Criminal Science Technology TCP includes competencies grounded in academic subject areas and built in concert with the Public Safety Core. The Ohio Board of Regents, the Ohio Department of Education, Career-Technical and Adult Education, and the College Tech Prep Curriculum Service Center at The University of Toledo collaboratively developed the TCP. A model and model descriptor of the Ohio Public Safety Delivery Model appears on pages vii.

The Criminal Science Technology Technical Competency Profile (TCP) includes essential competencies for programs from secondary through post-secondary associate degree programs. Each area contains competencies common to a variety of criminal science technology careers. Consequently, this profile design reflects programming flexibility that supports many options for broad-based educational studies and career planning.

Representatives from a broad cross-section of criminal justice professionals played a critical role in defining the vision and scope of the TCP and in defining the essential and recommended skills for current and future criminal science technology employees. Secondary and post-secondary educators representing Ohio schools and colleges leveled the competencies to create career pathways from secondary to associate degree programs. A list of business and industry representatives and educators participating in the development of the profile appears in Appendix A.

The Criminal Science Technology Technical Competency Profile (TCP) is the basis for the development of an integrated delivery system that provides opportunities for new and challenging programs and courses. The Technical Competency Profile will also enhance and expand the Career-Technical Education, College Tech Prep, and post-secondary degree programs.

The profile is available on the Internet at [www.ohtpcs.org](http://www.ohtpcs.org). Users can download copies of the entire profile or conduct searches on a number of key variables from this location.

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- Richard Arndt, Director, K-16 Initiatives, Ohio Board of Regents
- Kathy Sommers, Assistant Director, Career-Technical and Adult Education, Ohio Department of Education
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|                                |  |
|--------------------------------|--|
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## **Stark County College Tech Prep Consortium**

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The Stark County College Tech Prep consortium is comprised of representatives from local business and industry and the following educational institutions:

*Alliance City Schools  
Brown Local Schools  
Canton City Schools  
Canton Local Schools  
Fairless Local Schools  
Jackson Local Schools  
Lake Local Schools  
Louisville City Schools  
Marlington Local Schools  
Massillon City Schools*

*Minerva Local Schools  
North Canton City Schools  
Northwest Local Schools  
Osnaburg Local Schools  
Perry Local Schools  
Plain Local Schools  
Sandy Valley Local Schools  
Stark County JVSD  
Stark State College of Technology  
Tuslaw Local Schools*

### **Stark County College Tech Prep Consortium Staff**

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# **Criminal Science Curriculum Review February 1, 2006**

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Akron Area College Tech Prep Consortia

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# College Tech Prep Program Standards

College Tech Prep programs are rigorous programs of study starting at the secondary school level and continuing through the associate degree and beyond. In accordance with the Carl D. Perkins Vocational Technical Education Enhancement Act of 1998, College Tech Prep programs are seamless, non-duplicative programs of study combining high-level academic and technical preparation in a variety of career fields.

The Carl D. Perkins Vocational and Technical Education Act of 1998 defines College Tech Prep as:

A program that provides technical preparation in a career field such as engineering, applied science, mechanical, industrial or practical arts or trade, agriculture, health occupations, business or applied economics, and must do the following:

- Combines at least two years of secondary and two years of post-secondary education in a sequential course of study without duplication of coursework
- Integrates academic, vocational and technical education, and if appropriate and available, work-based learning
- Provides technical preparation for careers
- Leads to an associate or a baccalaureate degree or post-secondary certificate in a specific career field
- Leads to placement in appropriate employment or further education.

The Ohio College Tech Prep Advisory Council recommended to the Ohio Board of Regents and the Ohio Department of Education the following standards for all College Tech Prep programs:

Academics are taught at a college-preparatory level and are aligned with state models and academic content standards.

In addition to Ohio graduation requirements specified in SB 55, required academic components for College Tech Prep programs include:

- a. Mathematics taught at a minimum level of Algebra II by the completion of high school.
- b. An integrated or stand alone senior-year math component
- c. Three units of science including at least two lab-based science courses

College Tech Prep programs will use a state-developed Technical Competency Profile (TCP) as the basis for pathway development. The pathway document should reflect secondary and post-secondary course work and should be made available for stakeholders. All secondary and post-secondary TCP competencies must be clearly identified and addressed. The TCP is the framework used to develop all associated curricular documents; however, components from other competency profiles such as OCAP's (Occupational Competency Analysis Profile), ITAC's (Integrated Technical and Academic Competencies) and SCANS (The Secretary's Commission on Achieving Necessary Skills—America 2000) may be included and are not mutually excluded from a TCP.

Articulated pathways will be reviewed every two-years at the consortia level.

Pathways operate under an articulation agreement between/among partners in a consortium.

College Tech Prep programs at the secondary level will operate as state-approved, career-technical education programs.

Academic and technical instruction is integrated and delivered in a contextual approach where possible.

Programs have common representation from secondary education, higher education, business, and labor members.

Post-secondary programs contain advanced skills in the TCP document.

Programs must operate under either regionally accredited post-secondary institutions/degrees or approved apprenticeship programs meeting U.S. Department of Labor standards.

College Tech Prep programs, secondary and post-secondary, must comply with the state College Tech Prep Advisory Council's performance measures.

## Ohio Public Safety Delivery Model

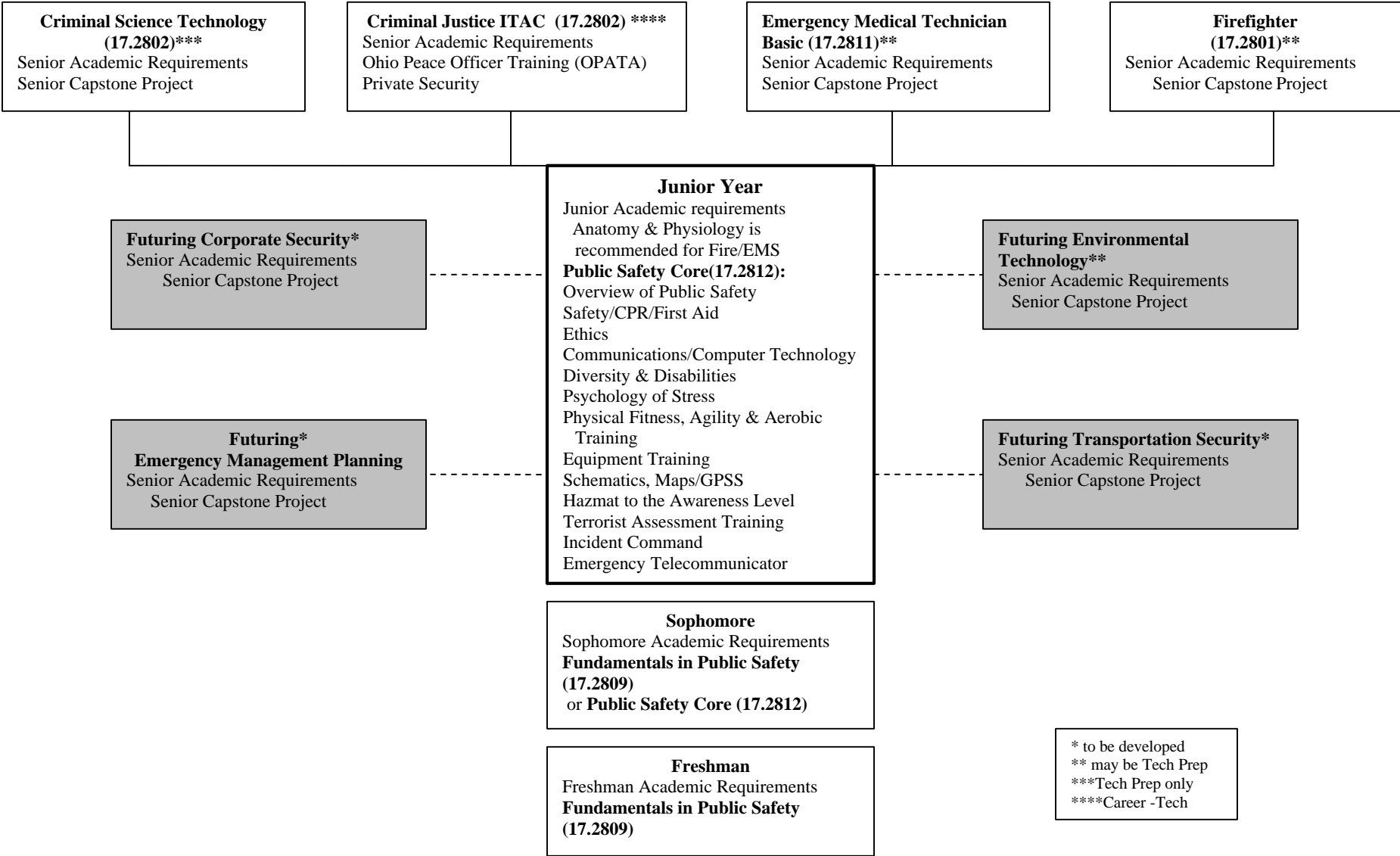
The Ohio Public Safety Delivery Model provides a solid foundation for the College Tech Prep career plan. This plan generally consists of two years of programming in high school, two years of learning at the community college level, and for many, two additional years of study at the baccalaureate level. The nucleus of the model is grounded in rigorous academic requirements and a Public Safety Core. Although listed in the junior year of high school, the Public Safety Core may also be completed in the sophomore year, which expands the career pathway options.

The Public Safety Core illustrates the fact that there are common skills and knowledge required for each of the strands. Experiences grounded within the core are designed to assist students to select the appropriate pathway. Located on the perimeter of the Public Safety Core are the various strands associated with careers in public safety. Each career strand enhances, expands, and customizes units from the core to reflect the needs of the career professionals.

Multiple career options and opportunities are available within each strand, some at the associate degree level and many at the baccalaureate degree level. For example, individuals desiring a career in criminal science technology may explore prospects through federal agencies such as, Alcohol, Tobacco, and Firearms, Federal Bureau of Investigation, Bureau of Criminal Investigation, Homeland Security, Drug Enforcement Agency, Transportation Security Administration, etc. In addition, state, local, and private agencies employ criminal science technology majors in a variety of positions. Other strands, such as environmental technology, emergency management, etc., offer similar options and career opportunities.

The model is designed to support lifelong learning beyond the formal classroom by requiring high level academic, as well as, technical skills and knowledge. Individuals undertaking the Public Safety Core and any one of the career strands should view their College Tech Prep experience as preparation for more than an entry-level position. Successful career pursuits and advancement in the future will rely on an individual's ability to change and adapted to a changing workforce. The implementation of the Ohio Public Safety Delivery Model will enhance a student's ability to address those changes.

# Ohio Public Safety Delivery Model



\* to be developed  
 \*\* may be Tech Prep  
 \*\*\*Tech Prep only  
 \*\*\*\*Career -Tech

# Key to Profile Codes

## Importance of Competencies

All of the competencies in this document represent the minimum requirements for a College Tech Prep program. It is the responsibility of the local consortia to further define and/or expand, as needed, the key indicators for each competency. Each competency will be taught at either the introductory or proficiency level by the completion of the Tech Prep program, which is the minimum of an Associate Degree. A minimal number of competencies have been identified as Introduce (I) at the Associate Degree level. These may require further higher education.

**This document integrates college prep academics with technical skill. Technical skills are a required component.**

**I = Introduce** (Learner will demonstrate knowledge and comprehension of the competency.)

**P = Proficient** (Learner will demonstrate ability to apply knowledge of and/or perform the competency.)

**R = Reinforced** (Competencies marked proficient at the secondary level are to be reinforced at the associate degree level.)

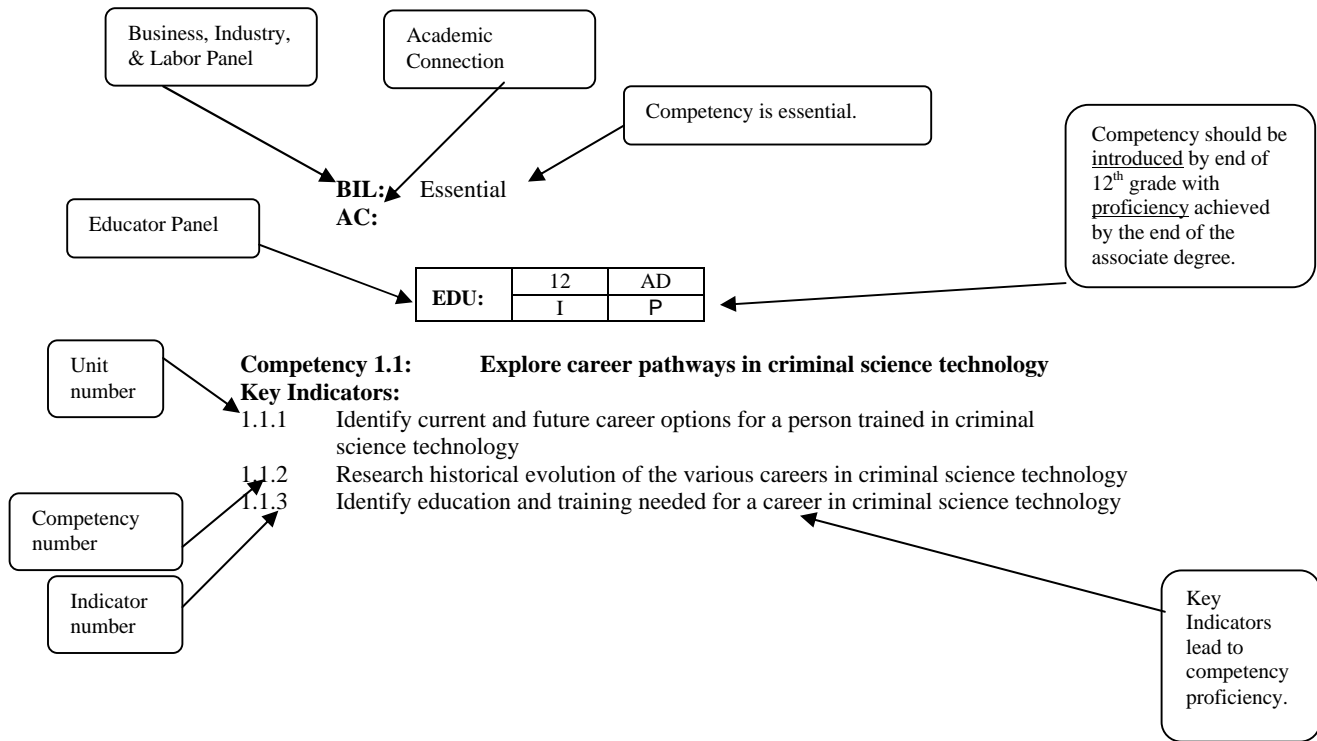
**Grade Level:**     **12** = by the end of grade 12  
                          **AD** = by the end of the Associate Degree

### ACADEMIC CONNECTION

As rigorous programs of study, College Tech Prep programs require academics to be taught at a college-preparatory level, and contextually within the technical content. State academic mathematics, language arts, science, and social studies benchmarks are embedded within each Technical Curriculum Profile (TCP).

If math, science, and/or language arts were determined to be embedded within a competency that relationship was recorded after the symbol AC. In addition, a table is provided on page 64 to further identify the link to specific benchmarks.

# EXAMPLE:



## **Criminal Science Technology Careers**

As criminal science technology career opportunities continue to evolve it becomes difficult to identify specific criminal science technology occupations according to education and training levels. The discrepancy between federal or state mandated education and training and the requirements established across individual agencies is significant between the mandated requirements and between agencies. For example, the basic requirement for an occupation could be an Ohio Peace Officer Training Council Certificate. Some agencies would accept that credential, while others would want that credential plus an associate degree, and still others would want that credential plus a baccalaureate degree. Furthermore, a number of criminal justice agencies would not require an Ohio Peace Officer Training Council Certificate, but would have their own set of education and training requirements.

The underlying trend that governs career opportunities in criminal science technology seems to be – the more education and training an individual has in criminal science technology, the more career opportunities are available to them. If an individual wanted to work in a small local criminal justice system, retail security, metro-park, etc. they might be able to gain employment with an Ohio Peace Officer Training Council Certificate, or less, and a secondary degree. On the other hand, if they wanted to work for federal agencies like the Federal Bureau of Investigation or Drug Enforcement Agency they would need at least a baccalaureate degree.

In regards to this TCP, the intent is to prepare individuals for advanced careers in criminal science technology. Individuals completing the curriculum will have a minimum of an associate's degree, with an option for a baccalaureate or higher degree. Although the associate's degree will provide entrance to criminal science technology careers, the advanced careers will require additional education.

The number of agencies and the criminal science technology occupations within those agencies is far too vast to be included in this statement. A partial listing of agencies or occupations includes:

|  |                                 |
|--|---------------------------------|
| Retail Security                        | Correction Officer              |
| Alcohol, Tobacco, and Firearms         | Federal Bureau of Investigation |
| County Deputy Sheriffs                 | Drug Enforcement Agency         |
| Bureau of Criminal Investigation       | U. S. Marshals Service          |
| Transportation Security Administration | Homeland Security               |
| Local and City Police Department       | Ohio Highway Patrol             |
| Secret Service                         | United States Military          |
| Private Law Enforcement                | Probation Officer               |
| Metro-parks                            | Paralegal                       |
| Social Workers                         | Substance Abuse Counselors      |
| Forensic Science                       | Corporate Security              |

## PUBLIC SAFETY CORE PROGRAM PROFILE

| Page | Unit |   |
|------|------|---|
|      | 1-15 | <b>Required for all Public Safety Programs</b>            |
| 4    | 1    | Public Safety Introduction                                |
| 6    | 2    | Ethics  |
| 7    | 3    | Safety  |
| 8    | 4    | CPR/First Aid   |
| 9    | 5    | Computer Technology                                       |
| 10   | 6    | Communications  |
| 11   | 7    | Diversity and Disabilities                                |
| 12   | 8    | Schematics, Maps and Geographic Information Systems (GIS) |
| 13   | 9    | Healthy Living Styles                                     |
| 14   | 10   | Psychology of Stress                                      |
| 15   | 11   | Equipment Training  |
| 16   | 12   | Hazmat Training-Awareness Level                           |
| 17   | 13   | Terrorist Assessment Training                             |
| 18   | 14   | Incident Command  |
| 19   | 15   | Emergency Telecommunications                              |

**Public Safety Core is designed to provide students with knowledge and skills applicable to public safety careers. The Public Safety Core requires a minimum of 240 hours, and is to be taught ONLY in conjunction with a Firefighter, EMS, Criminal Justice, Criminal Science Technology or other approved senior-level specialized public safety training program. The Public Safety Core is taught in the 10<sup>th</sup> and/or 11<sup>th</sup> grade only.**

**PUBLIC SAFETY  
INTEGRATED ACADEMIC  
AND TECHNICAL  
COMPETENCIES  
(17.2812)**

**UNITS 1-15**

## **Unit 1: Public Safety Introduction**

### **Competency 1.1: Research the history of public safety**

#### Competency Builders:

- 1.1.1 Analyze the impact of various historical events on public safety
- 1.1.2 Interpret the impact of the Constitution on public safety
- 1.1.3 Interpret key court rulings related to public safety

### **Competency 1.2: Research career paths within public safety**

#### Competency Builders:

- 1.2.1 Investigate public safety careers by using internet search engines and print materials
- 1.2.2 Identify changes within public safety careers
- 1.2.3 Identify emerging careers in public safety

### **Competency 1.3: Investigate various agencies/institutions within public safety service**

#### Competency Builders:

- 1.3.1 Research international agencies in public safety
- 1.3.2 Research federal agencies in public safety
- 1.3.3 Research state agencies in public safety
- 1.3.4 Research county agencies in public safety
- 1.3.5 Research local agencies in public safety

### **Competency 1.4: Investigate scope of practice for each area of public safety**

#### Competency Builders:

- 1.4.1 Identify professional or certification requirements and standards for various public safety personnel
- 1.4.2 Identify continuing education requirements
- 1.4.3 Clarify liabilities within the scope of practice for each area of public safety

### **Competency 1.5: Analyze current trends/issues in public safety**

#### Competency Builders:

- 1.5.1 Discuss contemporary issues in public safety
- 1.5.2 Apply the effect of contemporary issues on public safety
- 1.5.3 Discuss effect of contemporary technology on public safety

### **Competency 1.6: Demonstrate knowledge of the Ohio Revised Code (ORC) pertaining to public safety**

#### Competency Builders:

- 1.6.1 Identify various sections of ORC pertaining to public safety (e.g. Public Records Law)
- 1.6.2 Analyze a situation to determine applicability of ORC
- 1.6.3 Interpret appropriate sections of ORC
- 1.6.4 Apply appropriate elements within ORC

**Competency 1.7: Apply knowledge of the Ohio Administrative Code (OAC) pertaining to public safety**

Competency Builders:

- 1.7.1 Identify various sections of OAC pertaining to public safety
- 1.7.2 Analyze a situation to determine applicability of OAC
- 1.7.3 Interpret appropriate sections of OAC
- 1.7.4 Apply appropriate elements within OAC

**Competency 1.8: Demonstrate appropriate discipline and professionalism**

Competency Builders:

- 1.8.1 Demonstrate the chain of command of various public safety command structures
- 1.8.2 Perform duties in a professional manner as defined in a code of conduct

## **Unit 2: Ethics**

### **Competency 2.1: Identify Code of Ethics related to public safety careers**

#### Competency Builders:

- 2.1.1 Identify Code of Ethics related to law enforcement careers
- 2.1.2 Identify Code of Ethics related to fire and EMS careers
- 2.1.3 Identify Code of Ethics related to other public safety careers
- 2.1.4 Establish a personal code of ethics

### **Competency 2.2: Demonstrate ethical behavior**

#### Competency Builders:

- 2.2.1 Choose ethical courses of action in personal interactions
- 2.2.2 Choose ethical courses of action in all work assignments
- 2.2.3 Identify consequences of unethical conduct
- 2.2.4 Identify strategies for responding to unethical behavior of individuals and organizations
- 2.2.5 Comply with confidentiality requirements of the workplace policy
- 2.2.6 Identify legal ramifications of breach of confidentiality

## **Unit 3: Safety**

### **Competency 3.1: Maintain a safe work environment**

Competency Builders:

- 3.1.1 Identify potential hazards in the workplace
- 3.1.2 Follow procedures established to prevent accidents
- 3.1.3 Interpret a Material Safety Data Sheet (MSDS)
- 3.1.4 Utilize personal protective equipment
- 3.1.5 Practice universal precautions against infection
- 3.1.6 Demonstrate ergonomic safety within the workplace

### **Competency 3.2: Identify federal and state agencies regulating workplace safety**

Competency Builders:

- 3.2.1 Identify current Occupational Safety and Health Administration (OSHA) regulations
- 3.2.2 Identify current Environmental Protection Agency (EPA) regulations
- 3.2.3 Identify current Center for Disease Control (CDC) guidelines

### **Competency 3.3: Identifies potential occupational hazards related to various careers in public safety**

Competency Builders:

- 3.3.1 Identify occupational hazards related to law enforcement careers
- 3.3.2 Identify occupational hazards related to fire protection careers
- 3.3.3 Identify occupational hazards related to emergency medical services careers
- 3.3.4 Identify occupational hazards related to other public safety career

## **Unit 4: CPR/First Aid**

### **Competency 4.1: Acquire Cardio-Pulmonary Resuscitation (CPR) certification**

Competency Builders:

- 4.1.1 Demonstrate adult CPR
- 4.1.2 Demonstrate child CPR
- 4.1.3 Demonstrate infant CPR
- 4.1.4 Demonstrate two-person CPR

### **Competency 4.2: Acquire First Aid certification**

Competency Builders:

- 4.2.1 Demonstrate skills for the care and treatment of adult emergencies
- 4.2.2 Demonstrate skills for the care and treatment pediatric emergencies
- 4.2.3 Identify the laws pertinent to emergency care

### **Competency 4.3: Performs Automated External Defibrillation (AED)**

Competency Builders:

- 4.3.1 Demonstrate skills in the care of a victim in cardiac arrest
- 4.3.2 Integrate the use of AED in the chain of survival

## **Unit 5: Computer Technology**

**Competency 5.1: Execute fundamental skills to operate word processing, spread sheet and data base operations**

Competency Builders:

- 5.1.1 Identify existing databases utilized in public safety
- 5.1.2 Demonstrate application of data base software in work related situations
- 5.1.3 Demonstrate application of spread sheet software in work related situations
- 5.1.4 Use word processing software in work-related situations (i.e. on-line reporting)

**Competency 5.2: Identify emerging trends in advanced computer technology in public safety**

Competency Builders:

- 5.2.1 Investigate advanced computer technology as related to forensic science
- 5.2.2 Investigate advanced computer technology as related to surveillance
- 5.2.3 Investigate advanced computer technology as related to emergency management planning and homeland security

## **Unit 6: Communications**

### **Competency 6.1: Apply technical writing skills**

Competency Builders:

- 6.1.1 Present written information in a clear and concise manner
- 6.1.2 Organize investigative information into a useful public safety document

### **Competency 6.2: Conduct interview**

Competency Builders:

- 6.2.1 Determine key information to be obtained
- 6.2.2 Interpret verbal and non-verbal communications
- 6.2.3 Differentiate between facts, opinions and feelings
- 6.2.4 Identify various barriers to communication
- 6.2.5 Identify techniques for overcoming barriers to communication
- 6.2.6 Identify legal restrictions of conducting an interview

### **Competency 6.3: Demonstrate use of technology in communication**

Competency Builders:

- 6.3.1 Demonstrate established techniques for communicating via two-way communication
- 6.3.2 Demonstrate established techniques for communicating in alternative manners

## **Unit 7: Diversity and Disabilities**

### **Competency 7.1: Demonstrate sensitivity to cultural and human diversity**

#### Competency Builders:

- 7.1.1 Identify cultural population of community
- 7.1.2 Discuss types of discrimination
- 7.1.3 Discuss current diversity issues

### **Competency 7.2: Demonstrate specialized interpersonal skills**

#### Competency Builders:

- 7.2.1 Summarize Americans with Disabilities Act
- 7.2.2 Provide the appropriate assistance to persons with disabilities
- 7.2.3 Demonstrate the appropriate methods of communicating with individuals to obtain necessary information

## **Unit 8: Schematics, Maps and Geographic Information Systems (GIS)**

### **Competency 8.1: Identify various types of schematics and maps**

Competency Builders:

- 8.1.1 Differentiate between a schematic and a map
- 8.1.2 Determine appropriate uses of schematics and maps
- 8.1.3 Discuss GIS capabilities and use

### **Competency 8.2: Interpret various schematics and maps**

Competency Builders:

- 8.2.1 Demonstrate use of legend to identify points on schematic
- 8.2.2 Demonstrate use of legend to identify points on map

## **Unit 9: Healthy Living Styles**

### **Competency 9.1: Identify healthy living styles**

#### Competency Builders:

- 9.1.1 Identify common health risks related to life style
- 9.1.2 Identify benefits of maintaining healthy living styles

### **Competency 9.2: Identify impact on employability**

#### Competency Builders:

- 9.2.1 Identify fitness standards for entry-level employment
- 9.2.2 Compare fitness standards for entry-level employment
- 9.2.3. Appraise own fitness level
- 9.2.4 Develop fitness goals utilizing concepts of healthy living
- 9.2.5 Institute fitness plan for achieving goals
- 9.2.6 Evaluate short- and long-term results of overall fitness plan

## **Unit 10: Psychology of Stress**

### **Competency 10.1: Explain the concept of stress**

Competency Builders:

- 10.1.1 Define stress
- 10.1.2 Define distress
- 10.1.3 Differentiate between stress and stressors

### **Competency 10.2: Analyze the stress response**

Competency Builders:

- 10.2.1 Outline the physical response to stress (General Adaptation Syndrome— Fight or Flight)
- 10.2.2 Summarize the physical consequences of unmanaged stress
- 10.2.3 Summarize the emotional consequences of unmanaged stress
- 10.2.4 Summarize the behavioral consequences of unmanaged stress
- 10.2.5 Summarize the cognitive consequences of unmanaged stress

### **Competency 10.3: Analyze psychological response to stress**

Competency Builders:

- 10.3.1 Identify psychological stressors
- 10.3.2 Compare the relationship between personality types and the stress response
- 10.3.3 Identify stresses in the Public Safety careers
- 10.3.4 Categorize coping strategies
- 10.3.5 Critique ineffective coping behaviors

### **Competency 10.4: Describe the concept of Critical Incident Stress (CIS)**

Competency Builders:

- 10.4.1 Define Critical Incident Stress (CIS)
- 10.4.2 List factors that affect an individual's response to a critical incident
- 10.4.3 Identify types of critical incidents

## **Unit 11: Equipment Training**

### **Competency 11.1: Identify various equipment utilized in public safety**

Competency Builders:

- 11.1.1 Identify the function of various equipment in public safety
- 11.1.2 Identify proper techniques in using various equipment in public safety

### **Competency 11.2: Demonstrate safety in handling various equipment**

Competency Builders:

- 11.2.1 Demonstrate proper care, maintenance, and storage of equipment
- 11.2.2 Identify potential hazards associated with equipment
- 11.2.3 Follow proper procedures associated with equipment utilization

## **Unit 12: Hazmat Training—Awareness Level**

### **Competency 12.1: Achieve awareness level under State of Ohio guidelines**

Competency Builders:

- 12.1.1 Verbalize basic terms used to discuss hazardous materials problems
- 12.1.2 Explain the roles of federal, state and local governments in reducing hazardous materials risks
- 12.1.3 Identify hazardous materials

### **Competency 12.2: Apply awareness level training to public safety careers**

Competency Builders:

- 12.2.1 Exhibit knowledge of preparation for hazardous materials incidents
- 12.2.2 Construct hazardous material plan

## **Unit 13: Terrorist Assessment Training**

### **Competency 13.1: Define terrorism**

#### Competency Builders:

- 13.1.1 Identify Federal Code of terrorism
- 13.1.2 Identify the goals of acts of terrorism

### **Competency 13.2: Analyze possible terrorist targets**

#### Competency Builders:

- 13.2.1 Identify threats to country
- 13.2.2 Identify threats to state
- 13.2.3 Identify threats to county/locality

### **Competency 13.3: Awareness of weapons of mass destruction**

#### Competency Builders:

- 13.3.1 Define weapons of mass destruction
- 13.3.2 Identify examples of biological weapons
- 13.3.3 Identify examples of nuclear weapons
- 13.3.4 Identify examples of incendiary weapons
- 13.3.5 Identify examples of chemical weapons
- 13.3.6 Identify examples of explosive weapons

### **Competency 13.4: Identify action to take following a suspected terrorism event**

#### Competency Builders:

- 13.4.1 Identify Presidential Decision Directive 39 (PDD-39)
- 13.4.2 Identify the community safety Emergency Operations Plan (EOP)

## **Unit 14: Incident Command**

### **Competency 14.1: Define Incident Command**

Competency Builders:

- 14.1.1 Identify mission statement of command
- 14.1.2 Identify parts of incident command system

### **Competency 14.2: Use critical thinking skills in addressing emergency situations**

Competency Builders:

- 14.2.1 Develop preplan for emergency situation
- 14.2.2 Utilize command guidelines in emergency situations

## **Unit 15: Emergency Telecommunications**

### **Competency 15.1: Explain the role and responsibility of the 9-1-1 telecommunicator**

#### Competency Builders:

- 15.1.1 Describe the history of the evolution of the 9-1-1 telecommunicator
- 15.1.2 Identify the basic requirements for becoming a telecommunicator
- 15.1.3 List ethics and rules of conduct as they relate to the profession
- 15.1.4 Explain the concept of telecommunicator interaction with field personnel
- 15.1.5 Describe the importance of emergency services field personnel safety
- 15.1.6 Explain appropriate communications between mass media and telecommunications personnel

### **Competency 15.2: Exhibits proper call taking techniques and equipment**

#### Competency Builders:

- 15.2.1 Demonstrate call-taking ability and properly identify and process communication with various and diverse situations
- 15.2.2 Define various concepts of call taking
- 15.2.3 Define the process of multiple call management
- 15.2.4 Define call prioritization
- 15.2.5 Identify a minimum of five categories of special needs callers
- 15.2.6 Define the difference between call transfer and call referral
- 15.2.7 Explain the importance of documenting calls
- 15.2.8 Explain the importance of utilizing call handling guides/protocols
- 15.2.9 Recognize situation requiring appropriate supervisory notification
- 15.2.10 Define the difference between wireline and wireless technologies
- 15.2.11 Identify a minimum of 10 pieces of call taking equipment

### **Competency 15.3: Exhibits proper dispatching techniques and equipment**

#### Competency Builders:

- 15.3.1 Define basic dispatching techniques
- 15.3.2 Demonstrate basic radio broadcast procedures
- 15.3.3 List the Federal Communication Commission operating requirements applicable to 9-1-1 telecommunications
- 15.3.4 Define Title 18 of the U.S. Criminal Code
- 15.3.5 Define National Fire Protection Association Standard 1221
- 15.3.6 Explain the need for departmental contingency plans
- 15.3.7 Demonstrate a use of 10 different pieces of dispatching equipment

### **Competency 15.4: Identifies a basic understanding of telecommunicator liability**

#### Competency Builders:

- 15.4.1 Describe five areas of liability for telecommunicators
- 15.4.2 Explain the importance of appropriately completing required documentation! reports
- 15.4.3 Define the terms: liability, omission, commission, negligence
- 15.4.4 Describe the limits of liability protection

## 2004 Criminal Science Technology Competency Chart

At the end of the secondary program (12) and associate degree (AD) each competency is coded: I = Introductory; P = Proficient; R = Reinforce. In addition, the business, industry, and labor partnership (BIL) validated each competency: BIL: E = Essential; R = Recommended

| Competency   | 12 | AD | BIL |
|--|----|----|-----|
| <b>Unit 16: Professional Development</b>   |    |    |     |
| 16.1 Explore career pathways in criminal science technology  | P  | R  | E   |
| 16.2 Explain the impact an individual's past and present can have on a criminal science technology career  | P  | R  | E   |
| 16.3 Explore professional development opportunities for a criminal science technology professional   | I  | P  | R   |
| 16.4 Utilize professional marketing/research resource materials  | I  | P  | R   |
| 16.5 Prepare for career advancement in criminal science technology   | I  | P  | R   |
| <b>Unit 17: Communications</b>   |    |    |     |
| 17.1 Apply active listening skills to obtain and clarify information provided in oral communications   | P  | R  | E   |
| 17.2 Listen and speak effectively to contribute to group discussions and meetings  | P  | R  | R   |
| 17.3 Deliver formal and informal presentations that demonstrate organization and delivery skill  | I  | P  | E   |
| 17.4 Employ critical thinking and problem solving skills to formulate solutions to problems  | P  | R  | E   |
| 17.5 Combine critical thinking and team-building skills to solve problems  | P  | R  | E   |
| 17.6 Describe the basic origins of conflict and the needs that motivate behavior   | I  | P  | E   |
| 17.7 Examine the different responses to conflict as they relate to results   | P  | R  | E   |
| 17.8 Apply anger management techniques to resolve conflicts and reduce anger   | P  | R  | E   |
| 17.9 Manage crisis negotiations to promote the safety of individuals and the public  | I  | P  | R   |
| 17.10 Write criminal science technology reports  | I  | P  | E   |
| 17.11 Conduct interviews and/or interrogate witnesses and suspects   | P  | R  | E   |
| 17.12 Describe courtroom dynamics and employ proper courtroom fundamentals   | I  | P  | E   |
| 17.13 Write coherent and focused communications that support a defined perspective   | I  | P  | E   |
| 17.14 Create and analyze tabular and graphical displays of criminal activity data using appropriate tools, including spreadsheets and graphing calculators | I  | P  | E   |

| Competency                              |   | 12 | AD | BIL |
|---|---|----|----|-----|
| <b>Unit 18: Ethics</b>                  |   |    |    |     |
| 18.1                                    | Display integrity and demonstrate a commitment to ethical behavior in the performance of duties     | P  | R  | E   |
| 18.2                                    | Comply with directives and regulations to ensure protection of confidential information             | P  | R  | E   |
| 18.3                                    | Examine alternatives to pinpoint differences in ethical and legal responsibilities                  | P  | R  | E   |
| 18.4                                    | Demonstrate a commitment to professional ethics and legal responsibilities                          | P  | R  | E   |
| 18.5                                    | Explore violation of criminal justice powers/authority  | P  | R  | E   |
| <b>Unit 19: Enforcement Techniques</b>  |   |    |    |     |
| 19.1                                    | Explain the investigative process   | I  | P  | E   |
| 19.2                                    | Apply civil law enforcement procedures to serve writs, warrants, and summons                        | I  | P  | R   |
| 19.3                                    | Examine constitutional arrest procedures  | P  | R  | E   |
| 19.4                                    | Explain community policing and crime prevention   | I  | P  | E   |
| 19.5                                    | Apply criminal science technology procedures to Operating a Vehicle under the Influence (OVI) cases | I  |    | R   |
| 19.6                                    | Demonstrate a basic response to a crime scene, and properly protect and document the investigation  | I  | P  | E   |
| 19.7                                    | Examine controlled substance issues   | I  | P  | E   |
| 19.8                                    | Examine state and local traffic laws, investigate and document motor vehicle incidents              | I  | P  | E   |
| 19.9                                    | Classify electronic surveillance systems  | I  | P  | R   |
| 19.10                                   | Describe simple and/or complex financial investigation  | I  | P  | E   |
| 19.11                                   | Identify and describe gang culture  | I  | P  | R   |
| <b>Unit 20: Criminal Justice System</b> |   |    |    |     |
| 20.1                                    | Explain the development of law  | I  | P  | E   |
| 20.2                                    | Explain the structure of the U.S. criminal justice system   | I  | P  | E   |
| 20.3                                    | Examine the U.S. legal system and the implications for criminal science technology                  | I  | P  | E   |
| 20.4                                    | Demonstrate a working knowledge of state criminal code  | I  | P  | E   |
| 20.5                                    | Describe defenses to criminal prosecution   | I  | P  | R   |
| <b>Unit 21: Juvenile Justice</b>        |   |    |    |     |
| 21.1                                    | Explain juvenile justice system   | I  | P  | E   |
| 21.2                                    | Discuss juvenile offenders in the criminal justice system   | I  | P  | E   |
| 21.3                                    | Describe social issues that affect juvenile offenders   | I  | P  | E   |
| <b>Unit 22: Terrorism</b>               |   |    |    |     |
| 22.1                                    | Explain the motivations behind terrorism  | I  | P  | E   |
| 22.2                                    | Discuss how terrorism differs from other criminal acts  | I  | P  | E   |

| Competency  |  | 12 | AD | BIL |
|---|--|----|----|-----|
| <b>Unit 23: Cultural Diversity</b>                                    |  |    |    |     |
| 23.1  | Recognize equity and bias issues   | P  | R  | E   |
| 23.2  | Describe characteristics of individuals with mental disorders, physical disabilities, communication disorders, and unusual behaviors | I  | P  | E   |
| 23.3  | Explain federal, state, and local hate crime laws as they relate to criminal science technology                                      | P  | R  | E   |
| 23.4  | Discuss the challenges immigrants pose to the criminal justice system  | P  | R  | E   |
| 23.5  | Discuss racial issues that impact the criminal justice system  | P  | R  | E   |
| <b>Unit 24: Computer Crime</b>  |  |    |    |     |
| 24.1  | Examine federal and state laws, and cases of illegal computer access   | P  | R  | E   |
| 24.2  | Examine federal and state laws, and cases of exceeding authorized computer access  | I  | P  | E   |
| 24.3  | Examine criminal codes associated with computers   | I  | P  | E   |
| 24.4  | Examine computer forensics and document computer crime   | I  | P  | E   |
| <b>Unit 25: Risk Assessment/Critical Incident</b>                     |  |    |    |     |
| 25.1  | Examine the dangers associated with criminal science technology work   | P  | R  | E   |
| 25.2  | Employ risk precautions when approaching suspected offenders   | P  | R  | E   |
| 25.3  | Describe appropriate procedures to maintain crowd control  | P  | R  | E   |
| 25.4  | Demonstrate appropriate protection procedures at accidents or crime scenes that involve hazardous elements                           | P  | R  | E   |
| 25.5  | Describe risk precautions during traffic stops   | P  | R  | E   |
| 25.6  | Explain the appropriate use of force as it applies to the situation  | P  | R  | E   |
| 25.7  | Assess the physical and mental implications associated with a deadly force/critical incident encounter                               | I  | P  | E   |
| 25.8  | Examine the complexities of psychologically surviving the aftermath of a deadly force/critical incident encounter                    | I  | P  | E   |
| <b>Unit 26: Behavioral Science</b>                                    |  |    |    |     |
| 26.1  | Describe the biological roots of criminal behavior   | I  | P  | E   |
| 26.2  | Explain the psychological and psychiatric foundations of criminal behavior   | I  | P  | E   |
| 26.3  | Describe the sociological foundations of criminal behavior   | I  | P  | E   |
| 26.4  | Classify crimes and their sociological and psychological impact on communities   | I  | P  | E   |
| <b>Unit 27: Forensic Science and Technology Applications to Crime</b> |  |    |    |     |
| 27.1  | Discuss forensic toxicology  | I  | P  | E   |
| 27.2  | Describe the role of forensic biology  | I  | P  | E   |
| 27.3  | Describe DNA as a forensic science tool  | I  | P  | E   |
| 27.4  | Examine the collection of fingerprints as forensic evidence  | P  | R  | E   |

| <b>Competency</b>                                 |   | <b>12</b> | <b>AD</b> | <b>BIL</b> |
|---|---|-----------|-----------|------------|
| 27.5  | Classify firearms, tool marks and other impressions as forensic evidence  | I         | P         | E          |
| 27.6  | Describe the evidentiary value of handwriting, business machines, voice comparisons, voice stress analysis, and polygraph | I         | P         | R          |
| 27.7  | Discuss forensic chemistry  | I         | P         | E          |
| 27.8  | Discuss trace evidence  | P         | R         | E          |
| 27.9  | Discuss the utilization of online databases and clearing houses to investigate crimes                                     | P         | R         | R          |
| 27.10   | Describe the applications for computer-aided investigations   | I         | P         | E          |
| <b>Unit 28: Stress/Physical Fitness/Nutrition</b> |   |           |           |            |
| 28.1  | Explain the nature of stress in a criminal justice system   | P         | R         | E          |
| 28.2  | Manage stressful situations   | P         | R         | E          |
| 28.3  | Explain stressors and their impact on employees and their performance   | P         | R         | E          |
| 28.4  | Maintain physical fitness appropriate to a career in criminal science technology  | P         | R         | E          |
| 28.5  | Maintain nutrition conducive to physical fitness and good health  | P         | R         | E          |

## 2004 Criminal Science Technology Academic Connection

College Tech Prep programs required rigorous academics to be taught at a college preparatory level, and contextually within the technical content. The following chart is provided to indicate when LA= Language Arts, M=Math, and/or S= Science has been determined to be a contextual component of a competency

| <b>Competency</b>                        |  | <b>LA</b> | <b>M</b> | <b>S</b> |
|--|--|-----------|----------|----------|
| <b>Unit 16: Professional Development</b> |  |           |          |          |
| 16.1                                     | Explore career pathways in criminal science technology   | x         |          |          |
| 16.2                                     | Explain the impact an individual's past and present can have on a criminal science technology career   | x         |          |          |
| 16.3                                     | Explore professional development opportunities for a criminal science technology professional  | x         |          |          |
| 16.4                                     | Utilize professional marketing/research resource materials   | x         |          |          |
| 16.5                                     | Prepare for career advancement in criminal science technology  | x         |          |          |
| <b>Unit 17: Communications</b>           |  |           |          |          |
| 17.1                                     | Apply active listening skills to obtain and clarify information provided in oral communications  | x         |          |          |
| 17.2                                     | Listen and speak effectively to contribute to group discussions and meetings   | x         |          |          |
| 17.3                                     | Deliver formal and informal presentations that demonstrate organization and delivery skill   | x         | x        |          |
| 17.4                                     | Employ critical thinking and problem solving skills to formulate solutions to problems   | x         | x        | x        |
| 17.5                                     | Combine critical thinking and team-building skills to solve problems   | x         | x        | x        |
| 17.6                                     | Describe the basic origins of conflict and the needs that motivate behavior  | x         |          |          |
| 17.7                                     | Examine the different responses to conflict as they relate to results  | x         | x        |          |
| 17.8                                     | Apply anger management techniques to resolve conflicts and reduce anger  | x         |          |          |
| 17.9                                     | Manage crisis negotiations to promote the safety of individuals and the public   | x         |          |          |
| 17.10                                    | Write criminal science technology reports  | x         | x        |          |
| 17.11                                    | Conduct interviews and/or interrogate witnesses and suspects   | x         |          |          |
| 17.12                                    | Describe courtroom dynamics and employ proper courtroom fundamentals   | x         |          |          |
| 17.13                                    | Write coherent and focused communications that support a defined perspective   | x         | x        |          |
| 17.14                                    | Create and analyze tabular and graphical displays of criminal activity data using appropriate tools, including spreadsheets and graphing calculators | x         | x        |          |

| <b>Competency</b>                       |   | <b>LA</b> | <b>M</b> | <b>S</b> |
|---|---|-----------|----------|----------|
| <b>Unit 18: Ethics</b>                  |   |           |          |          |
| 18.1                                    | Display integrity and demonstrate a commitment to ethical behavior in the performance of duties     | x         |          | x        |
| 18.2                                    | Comply with directives and regulations to ensure protection of confidential information             | x         |          |          |
| 18.3                                    | Examine alternatives to pinpoint differences in ethical and legal responsibilities                  | x         |          | x        |
| 18.4                                    | Demonstrate a commitment to professional ethics and legal responsibilities                          | x         |          |          |
| 18.5                                    | Explore violation of criminal justice powers/authority  | x         |          |          |
| <b>Unit 19: Enforcement Techniques</b>  |   |           |          |          |
| 19.1                                    | Explain the investigative process   | x         | x        | x        |
| 19.2                                    | Apply civil law enforcement procedures to serve writs, warrants, and summons                        |           |          |          |
| 19.3                                    | Examine constitutional arrest procedures  | x         |          |          |
| 19.4                                    | Explain community policing and crime prevention   | x         | x        |          |
| 19.5                                    | Apply criminal science technology procedures to Operating a Vehicle under the Influence (OVI) cases | x         | x        | x        |
| 19.6                                    | Demonstrate a basic response to a crime scene, and properly protect and document the investigation  | x         | x        | x        |
| 19.7                                    | Examine controlled substance issues   | x         | x        | x        |
| 19.8                                    | Examine state and local traffic laws, investigate and document motor vehicle incidents              | x         | x        | x        |
| 19.9                                    | Classify electronic surveillance systems  | x         |          | x        |
| 19.10                                   | Describe simple and/or complex financial investigation  | x         | x        |          |
| 19.11                                   | Identify and describe gang culture  | x         |          |          |
| <b>Unit 20: Criminal Justice System</b> |   |           |          |          |
| 20.1                                    | Explain the development of law  | x         |          |          |
| 20.2                                    | Explain the structure of the U.S. criminal justice system   | x         |          |          |
| 20.3                                    | Examine the U.S. legal system and the implications for criminal science technology                  | x         |          |          |
| 20.4                                    | Demonstrate a working knowledge of state criminal code  | x         |          |          |
| 20.5                                    | Describe defenses to criminal prosecution   | x         |          |          |
| <b>Unit 21: Juvenile Justice</b>        |   |           |          |          |
| 21.1                                    | Explain juvenile justice system   | x         |          |          |
| 21.2                                    | Discuss juvenile offenders in the criminal justice system   | x         |          |          |
| 21.3                                    | Describe social issues that affect juvenile offenders   | x         |          |          |
| <b>Unit 22: Terrorism</b>               |   |           |          |          |
| 22.1                                    | Explain the motivations behind terrorism  | x         |          |          |
| 22.2                                    | Discuss how terrorism differs from other criminal acts  | x         |          |          |
| <b>Unit 23: Cultural Diversity</b>      |   |           |          |          |
| 23.1                                    | Recognize equity and bias issues  | x         |          |          |

| <b>Competency</b>   |  | <b>LA</b> | <b>M</b> | <b>S</b> |
|---|--|-----------|----------|----------|
| 23.2  | Describe characteristics of individuals with mental disorders, physical disabilities, communication disorders, and unusual behaviors | x         |          |          |
| 23.3  | Explain federal, state, and local hate crime laws as they relate to criminal science technology                                      | x         |          |          |
| 23.4  | Discuss the challenges immigrants pose to the criminal justice system  | x         |          |          |
| 23.5  | Discuss racial issues that impact the criminal justice system  | x         |          |          |
| <b>Unit 24: Computer Crime</b>  |  |           |          |          |
| 24.1  | Examine federal and state laws, and cases of illegal computer access   | x         |          |          |
| 24.2  | Examine federal and state laws, and cases of exceeding authorized computer access  | x         |          |          |
| 24.3  | Examine criminal codes associated with computers   | x         |          |          |
| 24.4  | Examine computer forensics and document computer crime   | x         |          | x        |
| <b>Unit 25: Risk Assessment/Critical Incident</b>                     |  |           |          |          |
| 25.1  | Examine the dangers associated with criminal science technology work   | x         |          |          |
| 25.2  | Employ risk precautions when approaching suspected offenders   | x         |          |          |
| 25.3  | Describe appropriate procedures to maintain crowd control  | x         |          |          |
| 25.4  | Demonstrate appropriate protection procedures at accidents or crime scenes that involve hazardous elements                           | x         |          | x        |
| 25.5  | Describe risk precautions during traffic stops   | x         |          |          |
| 25.6  | Explain the appropriate use of force as it applies to the situation  | x         |          |          |
| 25.7  | Assess the physical and mental implications associated with a deadly force/critical incident encounter                               | x         |          |          |
| 25.8  | Examine the complexities of psychologically surviving the aftermath of a deadly force/critical incident encounter                    | x         |          |          |
| <b>Unit 26: Behavioral Science</b>                                    |  |           |          |          |
| 26.1  | Describe the biological roots of criminal behavior   | x         |          | x        |
| 26.2  | Explain the psychological and psychiatric foundations of criminal behavior   | x         |          | x        |
| 26.3  | Describe the sociological foundations of criminal behavior   | x         |          | x        |
| 26.4  | Classify crimes and their sociological and psychological impact on communities   |           |          |          |
| <b>Unit 27: Forensic Science and Technology Applications to Crime</b> |  |           |          |          |
| 27.1  | Discuss forensic toxicology  | x         | x        | x        |
| 27.2  | Describe the role of forensic biology  | x         | x        | x        |
| 27.3  | Describe DNA as a forensic science tool  | x         | x        | x        |
| 27.4  | Examine the collection of fingerprints as forensic evidence  | x         | x        |          |
| 27.5  | Classify firearms, tool marks and other impressions as forensic evidence   | x         | x        | x        |

| <b>Competency</b>                                 |   | <b>LA</b> | <b>M</b> | <b>S</b> |
|---|---|-----------|----------|----------|
| 27.6  | Describe the evidentiary value of handwriting, business machines, voice comparisons, voice stress analysis, and polygraph | x         |          | x        |
| 27.7  | Discuss forensic chemistry  | x         | x        | x        |
| 27.8  | Discuss trace evidence  | x         | x        | x        |
| 27.9  | Discuss the utilization of online databases and clearing houses to investigate crimes                                     | x         |          |          |
| 27.10   | Describe the applications for computer-aided investigations   | x         | x        |          |
| <b>Unit 28: Stress/Physical Fitness/Nutrition</b> |   |           |          |          |
| 28.1  | Explain the nature of stress in a criminal justice system   | x         |          | x        |
| 28.2  | Manage stressful situations   | x         |          |          |
| 28.3  | Explain stressors and their impact on employees and their performance   | x         |          |          |
| 28.4  | Maintain physical fitness appropriate to a career in criminal science technology  | x         |          | x        |
| 28.5  | Maintain nutrition conducive to physical fitness and good health  | x         |          | x        |

## Criminal Science Technology Units

| Page | Unit |   |
|------|------|---|
| 29   | 16   | Professional Development                              |
| 31   | 17   | Communications  |
| 38   | 18   | Ethics  |
| 40   | 19   | Enforcement Techniques                                |
| 45   | 20   | Criminal Justice System                               |
| 47   | 21   | Juvenile Justice                                      |
| 48   | 22   | Terrorism   |
| 49   | 23   | Cultural Diversity                                    |
| 51   | 24   | Computer Crime  |
| 53   | 25   | Risk Assessment/Critical Incident                     |
| 56   | 26   | Behavioral Science                                    |
| 58   | 27   | Forensic Science and Technology Applications to Crime |
| 62   | 28   | Stress/Physical Fitness/Nutrition                     |

## Criminal Science Technology

### Instructional Unit 16: Professional Development

**BIL:** Essential  
**AC:** Language Arts

|             |    |    |
|-------------|----|----|
| <b>EDU:</b> | 12 | AD |
|             | P  | R  |

#### Competency 16.1: Explore career pathways in criminal science technology

##### Key Indicators:

- 16.1.1 Identify current and future career options for a person trained in criminal science technology
- 16.1.2 Research the historical evolution of the various careers in criminal science technology
- 16.1.3 Identify education and training needed for a career in criminal science technology

**BIL:** Essential  
**AC:** Language Arts

|             |    |    |
|-------------|----|----|
| <b>EDU:</b> | 12 | AD |
|             | P  | R  |

#### Competency 16.2 Explain the impact an individual's past and present can have on a criminal science technology career

##### Key Indicators:

- 16.2.1 Identify past behaviors that would prohibit an individual from entering or remaining in criminal science technology (e.g. illegal substance abuse, operating a vehicle under the influence, felony, domestic violence, or imprudent financial responsibilities)
- 16.2.2 Identify personal characteristics (physical and mental) required for a person to work as a criminal science technology professional

**BIL:**           **Essential**  
**AC:**           **Language Arts**

|             |    |    |
|-------------|----|----|
| <b>EDU:</b> | 12 | AD |
|             | I  | P  |

**Competency 16.3: Explore professional development opportunities for a criminal science technology professional**

**Key Indicators:**

- 16.3.1 Research continuing education courses or programs available to enhance skills, to remain current in the profession, and for career advancement
- 16.3.2 Describe various certifications for criminal science technology professionals
- 16.3.4 Identify professional association opportunities for criminal science technology professionals (i.e. IAI.org, AAFS.org, MAFS.org, ASCLD.org)
- 16.3.5 Establish professional relationships with criminal science technology professionals

**BIL:**           **Essential**  
**AC:**           **Language Arts**

|             |    |    |
|-------------|----|----|
| <b>EDU:</b> | 12 | AD |
|             | I  | P  |

**Competency 16.4: Utilize professional marketing/research resource materials**

**Key Indicators:**

- 16.4.1 Identify criminal science technology publications (e.g., books, periodicals, newsletters, websites, and online resources)
- 16.4.2 Differentiate among types of information (e.g., essential, important, critical, nice to know)

## Instructional Unit 17: Communications

**BIL:** Essential  
**AC:** Language Arts

|             |    |    |
|-------------|----|----|
| <b>EDU:</b> | 12 | AD |
|             | P  | R  |

**Competency 17.1: Apply active listening skills to obtain and clarify information provided in oral communications**

**Key Indicators:**

- 17.1.1 Paraphrase and repeat information to confirm understanding of English and non-English speaking population
- 17.1.2 Record and summarize information in written notes
- 17.1.3 Ask questions to seek or confirm understanding
- 17.1.4 Contribute relevant comments to improve the presentation and discussion of information

**BIL:** Essential  
**AC:** Language Arts

|             |    |    |
|-------------|----|----|
| <b>EDU:</b> | 12 | AD |
|             | P  | R  |

**Competency 17.2: Listen and speak effectively to contribute to group discussions and meetings**

**Key Indicators:**

- 17.2.1 Clarify the purpose and goals of a discussion or meeting
- 17.2.2 Demonstrate respect for others
- 17.2.3 Use active listening skills
- 17.2.4 Stay on subject and task
- 17.2.5 Summarize the results of the meeting, including agreements and disagreements

**BIL:** Essential  
**AC:** Language Arts, Math

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**Competency 17.3: Deliver formal and informal presentations that demonstrate organization and delivery skill**

**Key Indicators:**

- 17.3.1 Demonstrate appropriate usage of grammar, diction, and sentence structure
- 17.3.2 Communicate main ideas and supporting facts to achieve purpose of communication
- 17.3.3 Use visual aids and presentation technology to support formal presentations
- 17.3.4 Use proper organization and structure to achieve coherence
- 17.3.5 Use technical terms, references, and quoted material properly
- 17.3.6 Compute descriptive statistics and summarize data including measures of central dispersion and correlation
- 17.3.7 Communicate mathematical ideas orally with a clear purpose and appropriate for a specific audience

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 17.4: Employ critical thinking and problem solving skills to formulate solutions to problems**

**Key Indicators:**

- 17.4.1 Identify steps to effective problem solving
- 17.4.2 State the problem completely and precisely
- 17.4.3 Assemble and examine pertinent information
- 17.4.4 Brainstorm potential solutions
- 17.4.5 Apply various measurement scales to describe phenomena and reinforce solutions
- 17.4.6 Interpret consequences to each possible solution
- 17.4.7 Compare and contrast consequences and discuss underlying assumptions
- 17.4.8 Identify the best solution based on risks, costs, ethics, laws, and benefits
- 17.4.9 Apply the best solution to the problem

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 17.5: Combine critical thinking and team-building skills to solve problems**

**Key Indicators:**

- 17.5.1 Work with others to define problems
- 17.5.2 Share ideas, facts, information, and/or data with others
- 17.5.3 State personal positions clearly and respect conflicting positions
- 17.5.4 Accept and support group decisions even when different from a personal solution

**BIL:** Essential  
**AC:** Language Arts

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**Competency 17.6: Describe the basic origins of conflict and the needs that motivate behavior**

**Key Indicators:**

- 17.6.1 Identify the basic psychological needs that motivate behavior (e.g. belonging, power, freedom, etc.)
- 17.6.2 Recognize the role limited resources (time, money, property) play in generating conflict
- 17.6.3 Discuss the role that different values play in generating conflict
- 17.6.4 Identify how the effects of substance abuse, mental health and disabilities impact conflict

**BIL:** Essential  
**AC:** Language Arts, Math

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**Competency 17.7: Examine the different responses to conflict as they relate to results**

**Key Indicators:**

- 17.7.1 Describe the soft response approach (e.g. avoidance, compromise, and accommodation) and the typical reasons for using that approach
- 17.7.2 Describe the hard response approach (e.g. force, threats, aggression, and anger) and the typical reasons for using that approach
- 17.7.3 Describe the principled response approach (e.g. good communication skills, problem solving skills, and the ability to see the problem from more than one perspective) and the typical reasons for using that approach

**BIL:** Essential  
**AC:** Language Arts

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**Competency 17.8: Apply anger management techniques to resolve conflicts and reduce anger**

**Key Indicators:**

- 17.8.1 Identify techniques to reduce anger
- 17.8.2 Distinguish between passive, aggressive, and assertive behavior
- 17.8.3 Describe how body language plays a role in interacting with others
- 17.8.4 Identify factors that can contribute to a person’s hostility
- 17.8.5 Utilize communication strategies to deal with each category of difficult people
- 17.8.6 Discuss predictable factors that signal potential conflict

**BIL:** Essential  
**AC:** Language Arts

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**Competency 17.9: Manage crisis negotiations to promote the safety of individuals and the public**

**Key Indicators:**

- 17.9.1 Describe the principles of crisis negotiations
- 17.9.2 Utilize effective communication techniques in crisis negotiations
- 17.9.4 Describe suicide intervention techniques
- 17.9.5 Describe how to establish perimeters in crisis situations
- 17.9.6 Describe hostage safety considerations during negotiations
- 17.9.7 Discuss the psychological impacts on hostages

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 17.10: Write criminal science technology reports**

**Key Indicators:**

- 17.10.1 Solicit the appropriate information for a law enforcement incident report
- 17.10.2 Utilize appropriate note taking skills
- 17.10.2 Fill out the appropriate forms and explain their uses
- 17.10.3 Differentiate among an initial, continuation, and supplemental reports
- 17.10.4 Calculate and communicate predictions based on mathematical probability
- 17.10.5 Write a narrative using passive tense and active tense
- 17.10.6 Use correct spelling, grammar, capitalization, and punctuation
- 17.10.7 Communicate mathematical ideas in writing with a clear purpose and appropriate for a specific audience

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 17.11: Conduct interviews and/or interrogate witnesses and suspects**

**Key Indicators:**

- 17.11.1 Define the difference between interrogation and interview
- 17.11.2 Verbalize the legal considerations of the interview and interrogation
- 17.11.3 List techniques utilized in a Kinesics interview and detecting deception
- 17.11.4 List techniques to enhance a witness's memory
- 17.11.5 List techniques utilized during the interview of rape victims, child witness, and child victims
- 17.11.6 Discuss considerations and legal implications for videotaping and recording interviews and interrogations
- 17.11.7 Listen and observe body language, eye movement, voice tone, and voice inflection to comprehend information and distinguish facts from fabrication

**BIL:** Essential  
**AC:** Language Arts

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**Competency 17.12: Describe courtroom dynamics and employ proper courtroom fundamentals**

**Key Indicators:**

- 17.12.1 Utilize appropriate communication skills when testifying (i.e. persuasive skills and credibility), providing factual information from reports and eyewitnesses
- 17.12.2 Wear proper attire for a court appearance
- 17.12.3 Demonstrate appropriate responses to interrogation in the courtroom

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 17.13: Write coherent and focused communications that support a defined perspective**

**Key Indicators:**

- 17.13.1 Structure ideas and arguments in an organized manner, that are supported by relevant documentation and/or examples
- 17.13.2 Use correct spelling, grammar, capitalization, and punctuation
- 17.13.3 Identify positions from relevant research and resources
- 17.13.4 Apply various measurement scales when necessary to describe phenomena
- 17.13.5 Calculate and interpret descriptive statistics to communicate and support predictions and conclusions
- 17.13.6 Utilize tables, charts, and graphs to clarify textual explanations and support arguments

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 17.14: Create and analyze tabular and graphical displays of criminal activity data using appropriate tools, including spreadsheets and graphing calculators**

**Key Indicators:**

- 17.14.1 Compute and record ratio, proportion, and percent using real numbers
- 17.14.2 Calculate and record mean, median, and mode for a given set of data
- 17.14.3 Compute and record probabilities of compound events, independent events, and simple dependent events
- 17.14.4 Use a variety of mathematical representations flexibly and appropriately to organize, record and communicate mathematical ideas
- 17.14.5 Make predictions based on mathematical probability and statistical data

## Instructional Unit 18: Ethics

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 18.1: Display integrity and demonstrate a commitment to ethical behavior in the performance of duties**

**Key Indicators:**

- 18.1.1 Describe the dynamics of integrity as it relates to the criminal justice system
- 18.1.2 Discuss behaviors that violate public trust
- 18.1.3 Identify strategies to enhance public trust
- 18.1.4 Describe behaviors that are congruent with the constitution and accepted ethics

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 18.2: Comply with directives and regulations to ensure protection of confidential information**

**Key Indicators:**

- 18.2.1 Describe confidentiality in accordance with legal requirements relating to privacy
- 18.2.2 Demonstrate confidentiality in accordance with legal requirements relating to privacy
- 18.2.3 Discuss responsible public disclosure
- 18.2.4 Provide appropriate information to regulators and the public as required by law

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 18.3: Examine alternatives to pinpoint differences in ethical and legal responsibilities**

**Key Indicators:**

- 18.3.1 Describe the differences between ethical and legal responsibilities in the various roles and functions of criminal science technology
- 18.3.2 Identify alternative strategies in response to unethical and illegal actions in workplace situations

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 18.4: Demonstrate a commitment to professional ethics and legal responsibilities**

**Key Indicators:**

- 18.4.1 Discuss ethics and the appropriate code of professional conduct
- 18.4.2 Apply an ethical and professional code of conduct to professional activities

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 18.5 Explore violations of criminal justice powers/authority**

**Key Indicators:**

- 18.5.1 Identify instances of professional misconduct (e.g. abuse of authority, occupational defiance, alcohol and drug abuse, sexual misconduct, etc.)
- 18.5.2 Identify instances of criminal behavior by law enforcement officers (bribery, extortion, narcotics violations, sexual violence, etc.)

## Instructional Unit 19: Enforcement Techniques

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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### Competency 19.1 Explain the investigative process

#### Key Indicators:

- 19.1.1 Describe procedures to determine whether a crime has been committed
- 19.1.2 Discuss issues of investigative jurisdiction
- 19.1.3 Document all facts pertaining to the complaint (e.g. physical evidence, clues, witnesses, etc.)
- 19.1.4 Compute and document various attributes of physical evidence from a crime scene (e.g. length, width, geometric shape, volume, angle, etc.)
- 19.1.5 Produce geographic depictions of where crime occurs
- 19.1.6 Describe procedures to identify, locate and apprehend the perpetrator
- 19.1.7 Assist the prosecution by providing evidence of guilt
- 19.1.8 Differentiate between a civil and criminal offenses

**BIL:** Essential  
**AC :** Language Arts

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### Competency 19.2: Apply civil law enforcement procedures to serve writs, warrants, and summons

#### Key Indicators:

- 19.2.1 Describe how to properly serve a summons
- 19.2.2 Differentiate among domestic violence protective orders, orders of no contact, and orders to pick up children

**BIL:** Essential  
**AC:** Language Arts

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**Competency 19.3: Examine constitutional arrest procedures**

**Key Indicators:**

- 19.3.1 Describe laws of arrest to execute official duties while respecting the suspect’s rights
- 19.3.2 Examine the constitution’s protection regarding search and seizure
- 19.3.3 Describe the legal concepts of custody and interrogation

**BIL:** Essential  
**AC:** Language Arts, Math

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**Competency 19.4: Explain community policing and crime prevention**

**Key Indicators:**

- 19.4.1 Collaborate with community groups in reducing crime
- 19.4.2 Work with agencies and local citizens to develop a program that addresses family violence
- 19.4.3 Collaborate with local businesses to reduce the effects of crime
- 19.4.4 Calculate and present crime statistics by geographical location
- 19.4.5 Educate the public about crime problems, solutions, and prevention programs
- 19.4.6 Describe the concept of “Crime Prevention Through Environmental Design”
- 19.4.7 Describe the concepts of physical, procedural, and electronic vulnerabilities
- 19.4.8 Discuss the advantages and disadvantages of intrusion detection systems
- 19.4.9 Identify the value of barrier, key and lock systems, and lighting systems

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 19.6: Demonstrate a basic response to a crime scene, and properly protect and document the investigation**

**Key Indicators:**

- 19.6.1 Identify the boundaries and secure the crime scene
- 19.6.2 Document a crime scene
- 19.6.3 Calculate and record direct measurements to identify the boundaries of the crime scene (e.g., perimeter, circumference, composite shape, etc.)

- 19.6.4 Collect, package, and transmit various types of physical and trace evidence to the crime laboratory (e.g., latent prints, DNA, etc.)
- 19.6.5 Conduct basic scene techniques to include electronic devices (e.g., computers, answering machines, digital cameras, scanner, pagers, etc.)
- 19.6.6 Identify the perpetrators(s), the perpetrator’s description, and the perpetrator’s location
- 19.6.7 Identify witnesses and document information provided by witnesses
- 19.6.8 Broadcast an updated description of the incident, perpetrator(s) and/or vehicle

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 19.7: Examine controlled substance issues**

**Key Indicators:**

- 19.7.1 Identify controlled substances in various forms
- 19.7.2 Create, interpret and use graphical displays and statistical measures to describe controlled substance data
- 19.7.3 Investigate/recognize dangerous, and sometimes lethal and unpredictable controlled substances
- 19.7.4 Describe the physiological and sociological effects of controlled substances
- 19.7.5 Identify anti-drug legislation
- 19.7.6 Discuss investigative techniques used to identify controlled substances and their users culture
- 19.7.7 Describe the relationship between drugs, crime, and social problems

**BIL:** Essential  
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**Competency 19.8: Examine state and local traffic laws, investigate and document motor vehicle incidents**

**Key Indicators:**

- 19.8.1 Describe the procedures necessary to respond, investigate, and document a motor vehicle crash
- 19.8.2 Preserve and document crash-scene evidence using field sketches, photographs, and proper evidence collection techniques

- 19.8.3 Compute various attributes of the crash scene (e.g., skid length, speed, lengths and angle measurements of impact, etc.) using weather and surface condition coefficients
- 19.8.4 Interview drivers and witnesses and obtain the required information to file the crash report
- 19.8.5 Describe vehicular movements during a crash
- 19.8.6 Control traffic, pedestrians, and by-standers in a safe manner

**BIL:**           **Essential**  
**AC:**           **Language Arts**

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**Competency 19.9: Classify electronic surveillance systems**

**Key Indicators:**

- 19.9.1 Identify the legal parameters involving electronic surveillance systems and the circumstances under which they may be used
- 19.9.2 Describe illegal electronic surveillance systems and identify the laws they violate

**BIL:**           **Essential**  
**AC:**           **Language Arts, Math, Science**

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**Competency 19.10: Describe simple and/or complex financial investigation**

**Key Indicators:**

- 19.10.1 Identify money laundering control legislation
- 19.10.2 Discuss financial institution systems and banking principles
- 19.10.3 Identify proper document acquisition and recovery procedure
- 19.10.4 Identify common frauds (i.e. counterfeiting, identify theft, scams, and targeted populations)

**BIL:**           **Essential**  
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**Competency 19.11: Identify and describe gang culture**

**Key Indicators:**

- 19.11.1 Recognize the impact cultural geography has on gangs and gang members
- 19.11.2 Describe the sociological factors contributing to gang membership
- 19.11.3 Discuss the psychological factors contributing to gang violence

## Instructional Unit 20: Criminal Justice System

**BIL:** Essential  
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### Competency 20.1: Explain the development of law

#### Key Indicators:

- 20.1.1 Explain the rule of law
- 20.1.2 Discuss early Roman law
- 20.1.3 Describe early English influence and common law
- 20.1.4 Discuss the early American experience with criminal justice

**BIL:** Essential  
**AC:** Language Arts

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### Competency 20.2: Explain the structure of the U.S. criminal justice system

#### Key Indicators:

- 20.2.1 Describe the differences and similarities between state, local and federal court systems and their interactions
- 20.2.2 Identify the components of the criminal justice system (e.g. juvenile and adult)
- 20.2.3 Discuss the constitutional authority for the criminal justice system at all levels
- 20.2.4 Trace the stages of processing through the American criminal justice system (e.g., investigation, arrest, booking, first appearance, preliminary hearing, Grand Jury, etc.)
- 20.2.5 Describe the process of a jury trial
- 20.2.6 Describe the role of the attorney
- 20.2.7 Describe the different categories of crime (e.g. felony, misdemeanor, traffic, capital crimes, etc.)

**BIL:** Essential  
**AC:** Language Arts

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**Competency 20.3: Examine the U.S. legal system and the implications for criminal science technology**

**Key Indicators:**

- 20.3.1 Describe constitutional protection laws for individuals, groups, and society
- 20.3.2 Describe the differences between civil and criminal justice systems, and compare and contrast their legal perspectives
- 20.3.3 Discuss the role of the court in defining individual rights
- 20.3.4 Discuss criminal due process laws and procedures

**BIL:** Essential  
**AC:** Language Arts

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**Competency 20.4: Demonstrate a working knowledge of state criminal code**

**Key Indicators:**

- 20.4.1 Describe elements of various crimes (i.e. domestic violence, liquor code violations, sexual offenses, homicide, etc.)
- 20.4.2 Describe four culpable mental states

## Unit 21: Juvenile Justice

**BIL:** Essential  
**AC:** Language Arts

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### Competency 21.1: Explain juvenile justice system

#### Key Indicators:

- 21.1.1 Compare/contrast the juvenile and adult criminal justice systems
- 21.1.2 Identify the distinctions (i.e. procedural/terminology, constitutional issues)
- 21.1.3 Describe crimes that involve juveniles as victims of neglect, physical and sexual abuse
- 21.1.4 Discuss the juvenile transfer process to criminal court

**BIL:** Essential  
**AC:** Language Arts, Math

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### Competency 21.2: Discuss juvenile offenders in the criminal justice system

#### Key Indicators:

- 21.2.1 Trace juvenile offender arrest trends over the past few decades
- 21.2.2 Identify the characteristics of the male and female juvenile offenders
- 21.2.3 Calculate and present descriptive statistics on changes in juvenile offending over time
- 21.2.4 Tabulate and graphically display juvenile offending trends and offender characteristics

**BIL:** Essential  
**AC:** Language Arts

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### Competency 21.3: Describe social issues that affect juvenile offenders

#### Key Indicators:

- 21.3.1 Discuss the sociological factors impacting juvenile offenders
- 21.3.2 Describe the cycle of controlled substance abuse of juvenile offenders
- 21.3.3 Discuss the psychological factors impacting juvenile offenders

## Unit 22: Terrorism

**BIL:** Essential  
**AC:** Language Arts

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### Competency 22.1: Explain the motivations behind terrorism

#### Key Indicators:

- 22.1.1 Describe the motivations behind religion driven terrorism
- 22.1.2 Describe the motivations behind political driven terrorism
- 22.1.3 Describe the motivations behind economic driven terrorism
- 22.1.4 Describe the motivations behind ideological driven terrorism

**BIL:** Essential  
**AC:** Language Arts

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### Competency 22.2: Discuss how terrorism differs from other criminal acts

#### Key Indicators:

- 22.2.1 Recognize traits and behaviors that are indicative of a terrorist
- 22.2.2 Discuss the social, psychological, political, and economic impact of terrorism

## Instructional Unit 23: Cultural Diversity

**BIL:** Essential  
**AC:** Language Arts, Math

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### Competency 23.1: Examine equity and bias issues

#### Key Indicators

- 23.1.1 Define sexual harassment
- 23.1.2 Identify behaviors that could be considered offensive
- 23.1.3 Discuss the implications associated with hazing
- 23.1.4 Identify laws that protects individuals from gender, race, sexual orientation, religion, and ethnicity based violence
- 21.4.5 Calculate and present descriptive statistics of offender and victim characteristics
- 21.4.6 Tabulate and graphically display offending trends and offender characteristics

**BIL:** Essential  
**AC:** Language Arts, Math

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### Competency 23.2: Examine characteristics of individuals with mental disorders, physical disabilities, communication disorders, and unusual behaviors

#### Key Indicators:

- 23.2.1 Identify general characteristic of psychosis or abnormal behavior
- 23.2.2 Discuss legal authority when working with individuals who are dangerous to themselves or others
- 23.2.3 Identify resources for individuals with suicidal compulsions, mental illness, or mental retardation
- 23.2.4 Calculate and present descriptive statistics of individuals with mental disorders, physical disabilities, communication disorders, and unusual behaviors characteristics
- 23.2.5 Tabulate and graphically display offending trends and offender characteristics

**BIL:** Essential  
**AC:** Language Arts, Math

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**Competency 23.3: Explain federal, state, and local hate crime laws as they relate to criminal science technology**

**Key Indicators:**

- 23.3.1 Identify hate crime violations
- 23.3.2 Identify appropriate responses to a victim of a hate crime
- 23.3.3 Explain the hate crime reporting portion of the Unified Crime Report (UCR), and National Incident Based Reporting System (NIBRS)
- 23.3.4 Calculate and present descriptive statistics of offender and victim characteristics
- 23.3.5 Tabulate and graphically display offending trends and offender characteristics

**BIL:** Essential  
**AC:** Language Arts

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**Competency 23.4: Discuss the challenges immigrants pose to the criminal justice system**

**Key Indicators:**

- 23.4.1 Identify illegal immigration issues and challenges to criminal science technology
- 23.4.2 Describe immigration issues relating to individuals who enter the country legally
- 23.4.3 Discuss problems associated with tracking immigrants

**BIL:** Essential  
**AC:** Language Arts

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**Competency 23.5: Discuss racial issues that impact the criminal justice system**

**Key Indicators:**

- 23.5.1 Define and provide examples of racial profiling
- 23.5.2 Discuss the perceptions of different ethnic groups and races as they relate to profiling issues
- 23.5.3 Discuss exclusion issues of jurors based on race or gender (e.g., Batson vs. Kentucky)

## Instructional Unit 24: Computer Crime

**BIL:** Essential  
**AC:** Language Arts

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### Competency 24.1: Examine federal and state laws, and cases of illegal computer access

#### Key Indicators:

- 24.1.1 Cite current state and federal legislation prohibiting illegal access to protected computers
- 24.1.2 Describe hacking as it relates to unauthorized intrusion
- 24.1.3 Discuss the motivation for unauthorized computer intrusion (e.g., eavesdropping, technical challenge, theft, fraud, damage, etc.)

**BIL:** Essential  
**AC:** Language Arts

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### Competency 24.2: Examine federal and state laws, and cases of exceeding authorized computer access

#### Key Indicators:

- 24.2.1 Cite current state and federal legislation prohibiting exceeding authorized access to protected computers
- 24.2.2 Contrast authorized access with exceeding authorized access
- 24.2.3 Discuss the motivation for exceeding authorized access (e.g. retribution, snooping, personal gain, fraud, damage, etc.)
- 24.2.4 Discuss state and federal search and seizure legislation that pertains to computers

**BIL:** Essential  
**AC:** Language Arts

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**Competency 24.3: Examine criminal codes associated with computers**

**Key Indicators:**

- 24.3.1 Examine federal and state laws, and cases of intentional damage to computer or computer networks
- 24.3.2 Examine federal and state laws, and cases of computer fraud, extortion, and espionage
- 24.3.3 Describe the use of the Internet by sexual predator
- 24.3.4 Discuss distribution of obscenity to minors
- 24.3.5 Discuss production and dissemination of sexually oriented matter involving minors
- 24.3.6 Differentiate among computer as a target, computer as an instrument of crime, computer as incidental to crime, and crime in association with the prevalence of computers
- 24.3.7 Examine the lack of uniform crime reporting in regard to computer crime (AD)

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 24.4: Examine computer forensics and document computer crime**

**Key Indicators:**

- 24.4.1 Identify and verify types of computer forensics tools
- 24.4.2 Discuss investigative guidelines to computer forensics
- 24.4.3 Identify response, certification, and professional organizations that assist with computer crime
- 24.4.4 Identify hardware components and their function

## Instructional Unit 25: Risk Assessment/Critical Incident

**BIL:** Essential  
**AC:** Language Arts, Math

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**Competency 25.1: Examine the dangers associated with criminal science technology work**

**Key Indicators:**

- 25.1.1 Identify risks criminal science technology officers may encounter during their career
- 25.1.2 Distinguish high risk from low risk situations
- 25.1.3 Calculate and use graphical displays of descriptive statistics to identify criminal science technology dangers and frequency of occurrence

**BIL:** Essential  
**AC:** Language Arts

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**Competency 25.2 Employ risk precautions when approaching suspected offenders**

**Key Indicators:**

- 25.2.1 Identify factors that could indicate imminent danger
- 25.2.2 Describe precautions to be taken when approaching suspected offenders
- 25.2.3 Identify the range of weapons a perpetrator might possess
- 25.2.4 Employ risk precautions when responding to domestic violence calls

**BIL:** Essential  
**AC:** Language Arts

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**Competency 25.3 Describe appropriate procedures to maintain crowd control**

**Key Indicators:**

- 25.3.1 Describe the risk factors associated with crowd control
- 25.3.2 Describe procedures necessary to maintain safe crowd control

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 25.4: Demonstrate appropriate protection procedures at accidents or crime scenes that involve hazardous elements**

**Key Indicators:**

- 25.4.1 Describe acceptable procedures involving body fluids
- 25.4.2 Discuss procedure for protecting against hazardous chemicals or fumes
- 25.4.3 Describe appropriate procedure involving explosives

**BIL:** Essential  
**AC:** Language Arts

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**Competency 25.5: Describe risk precautions during traffic stops**

**Key Indicators:**

- 25.5.1 Identify the range of weapons and location an officer could encounter during a traffic stop
- 25.5.2 Identify procedures necessary to avoid an assault
- 25.5.3 Describe procedures to be taken to avoid being hit by on-coming traffic
- 25.5.4 Describe procedures to a felony stop

**BIL:** Essential  
**AC:** Language Arts

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**Competency 25.6: Explain the appropriate use of force as it applies to the situation**

**Key Indicators:**

- 25.6.1 State the guidelines and restrictions imposed by federal and state governments related to the use of deadly force
- 25.6.2 List examples of situations where the use of deadly force is authorized
- 25.6.3 Explain the levels of force continuum from the lowest to the highest
- 25.6.4 List equipment as it relates to the force continuum

**BIL:** Essential  
**AC:** Language Arts

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**Competency 25.7: Assess the physical and mental implications associated with a deadly force/critical incident encounter**

**Key Indicators:**

- 25.7.1 Recognize the impact perceptual and memory distortions have in any deadly force/critical incident encounter and ensuing investigation
- 25.7.2 Describe factors to help ensure an accurate and thorough investigation
- 25.7.3 Assess the mental preparedness to shoot in a deadly force encounter

**BIL:** Essential  
**AC:** Language Arts

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**Competency 25.8: Examine the complexities of psychologically surviving the aftermath of a deadly force/critical incident encounter**

**Key Indicators:**

- 25.8.1 Discuss the psychological implications following a critical incident encounter
- 25.8.2 Describe the intent of traumatic incident debriefing
- 25.8.3 Recognize the symptoms of post-traumatic stress disorders

## Instructional Unit 26: Behavioral Science

**BIL:** Essential  
**AC:** Language Arts, Science, Social Studies

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### Competency 26.1: Describe the biological roots of criminal behavior

#### Key indicators:

- 26.1.1 Discuss the principles of biological theories (e.g., genetics)
- 26.1.2 Discuss human aggression
- 26.1.3 Discuss the relationship of crime and human behavior

**BIL:** Essential  
**AC:** Language Arts, Social Studies

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### Competency 26.2: Explain the psychological and psychiatric foundations of criminal behavior

#### Key Indicators:

- 26.2.1 Discuss the principles of psychological theories (e.g., modeling theory, behavior theory, attachment theory, self-control theory, etc.)
- 26.2.2 Explain criminal behavior as maladaptation
- 26.2.3 Interpret crime as adaptive behavior
- 26.2.4 Associate insanity to criminal behavior
- 26.2.5 Define social policy and forensic psychology
- 26.2.6 Describe criminal psychological profiling

**BIL:** Essential  
**AC:** Language Arts, Social Studies

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### Competency 26.3: Describe the sociological foundations of criminal behavior

#### Key Indicators:

- 26.3.1 Discuss the principles of sociological theories (e.g., structure theory, process theory, development theory)
- 26.3.2 Cite examples for each of the social theories
- 26.3.3 Identify the policy implications for addressing the social theories

**BIL:**           **Essential**  
**AC:**           **Language Arts, Social Studies**

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**Competency 26.4:   Classify crimes and their sociological and psychological impact on communities**

**Key Indicators:**

- 26.4.1 Identify crimes against persons and illustrate the sociological and psychological impact on communities
- 26.4.2 List crimes against property and examine the sociological and psychological impact on communities
- 26.4.3 Examine white collar and organized crime, and the sociological and psychological impact on communities
- 26.4.4 Compare/contrast substance abuse and criminal behavior
- 26.4.5 Illustrate the sociological and psychological impact of substance abuse on communities
- 26.4.6 Illustrate examples of victimless crimes, and the sociological and psychological impact on communities

## Instructional Unit 27: Forensic Science and Technology Applications to Crime

**BIL:**           **Essential**  
**AC:**           **Language Arts, Math, Science**

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### **Competency 27.1:   Discuss forensic toxicology**

**Key Indicators:**

- 27.1.1   Describe the role of the toxicologist
- 27.1.2   Identify the various substances a toxicologist could encounter
- 27.1.3   Recognize the significance of toxicological findings

**BIL:**           **Essential**  
**AC:**           **Language Arts, Math, Science**

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### **Competency 27.2:   Describe the role of forensic biology**

**Key Indicators:**

- 27.2.1   Define forensic biology
- 27.2.2   Discuss the nature of blood characteristics as they relate to crime scene investigation
- 27.2.3   Discuss the principles of heredity
- 27.2.4   Describe the characterization of semen and collection of rape evidence

**BIL:**           **Essential**  
**AC:**           **Language Arts, Math, Science**

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### **Competency 27.3:   Describe DNA as a forensic science tool**

**Key Indicators:**

- 27.3.1   Define DNA
- 27.3.2   Describe the collection and preservation of physiological fluid evidence for DNA analysis
- 27.3.3   Identify the various body elements forensic scientist can use for DNA analysis
- 27.3.4   Discuss the impact DNA evidence has had on criminal investigations
- 27.3.5   Discuss CODIS (statewide DNA database system)

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 27.4: Examine the collection of fingerprints as forensic evidence**

**Key Indicators:**

- 27.4.1 Describe the principles of fingerprinting classification
- 27.4.2 Demonstrate the methods of detecting fingerprints
- 27.4.3 Collect and preserve latent prints
- 27.4.4 Collect and preserve developed prints
- 27.4.5 Describe AFIS (Automated Fingerprint Information Systems), Web check and other technology systems

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 27.5: Classify firearms, tool marks, and other impressions as forensic evidence**

**Key Indicators:**

- 27.5.1 Describe the principles of ballistics technology
- 27.5.2 Examine bullets, cartridge cases, and gun powder residue
- 27.5.3 Describe collection and preservation procedures
- 27.5.4 Examine tool marks and other impressions
- 27.5.5 Describe NIBIN (National Integrated Ballistic Information Network)

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 27.6: Describe the investigative value of handwriting, business machines, voice comparisons, voice stress analysis, and polygraph**

**Key Indicators:**

- 27.6.1 Compare handwriting samples to handwriting exemplars and known standards
- 27.6.2 Discuss evidence obtainable from typewriters, printers, photocopiers, and Fax samples
- 27.6.3 Interpret alterations, erasures, and obliterations
- 27.6.4 Discuss deception detection devices
- 27.6.5 Discuss evidentiary value

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 27.7: Discuss forensic chemistry**

**Key Indicators:**

- 27.7.1 Identify the various substances a forensic chemist could encounter (e.g. explosives, controlled substances)
- 27.7.2 Describe the role of a forensic chemist
- 27.7.3 Recognize the significance of forensic chemistry findings

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 27.8 Discuss trace evidence**

**Key Indicators:**

- 27.8.1 Describe what materials can be submitted to a lab to be analyzed
- 27.8.2 Discuss collection and preservation techniques

**BIL:** Essential  
**AC:** Language Arts, Math, Science

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**Competency 27.10: Describe the applications for computer-aided investigations**

**Key Indicators:**

- 27.10.1 Discuss the utilization of computers to investigate occupational crimes
- 27.10.2 Describe the utilization of computers to investigate white-collar crime (e.g., corporate crimes)
- 27.10.3 Describe the application of computer generated crime scene analysis to criminal investigations
- 27.10.4 Discuss how enhanced photographs, images, and forensic animation assist criminal investigations
- 27.10.5 Discuss allegations of evidence tampering as it relates to computer-aided investigations

## Instructional Unit 28: Stress/Physical Fitness/Nutrition

**BIL:** Essential  
**AC:** Language Arts, Science, Social Studies

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### Competency 28.1: Explain the nature of stress in a criminal justice system

**Key Indicators:**

- 28.1.1 Describe the sources and signs of stress
- 28.1.2 Explain the physical and emotional responses to stress
- 28.1.3 Discuss the effects of personal stress on family, friends, etc.
- 28.1.4 Illustrate positive and negative effects of stress on productivity

**BIL:** Essential  
**AC:** Language Arts, Social Studies

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### Competency 28.2: Manage stressful situations

**Key Indicators:**

- 28.2.1 Accept stress as an integral part of life
- 28.2.2 Identify strategies and/or methods to reduce/channel stress
- 28.2.3 Discuss strategies for developing and maintaining support systems
- 28.2.4 Discuss wellness incentive programs through employers

**BIL:** Essential  
**AC:** Language Arts, Social Studies

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### Competency 28.3: Explain stressors and their impact on employees and their performance

**Key Indicators:**

- 28.3.1 Discuss the anger, frustration, and burn-out that can occur within an organization
- 28.3.2 Describe negative productivity factors (e.g., absenteeism, demoralization, etc.) attributed to organizational stressors
- 28.3.3 Discuss the demoralization and burn-out a high stress career can create

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 28.4: Maintain physical fitness appropriate to a career in criminal science technology**

**Key Indicators:**

- 28.4.1 Discuss the importance of maintaining physical fitness in criminal science technology profession
- 28.4.2 Describe physical fitness routines designed to maintain strength, flexibility, and endurance

**BIL:** Essential  
**AC:** Language Arts, Science

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**Competency 28.5: Maintain nutrition conducive to physical fitness and good health**

**Key Indicators:**

- 28.5.1 Discuss the importance of a good nutrition
- 28.5.2 Compare foods that contribute to good health to those that are detrimental to good health

## **Academic Connections**

The Criminal Science Technology Technical Competency Profile (TCP) requires rigorous academic preparations to insure all students have the appropriate academic foundation to enter and succeed at the post-secondary level. Many of the math, science and language arts benchmarks identified in the Ohio Academic Content Standards are embedded in the technical content of this TCP. The following is a composite of those benchmarks that have been determined by academic and technical panels to be reinforced by this profile.

The academic benchmarks were derived from the Academic Content Standards K-12 Science: Academic Content Standards K-12 Mathematics: and, Academic Content Standards K-12 English Language Arts. Copies of the standards or additional information can be obtained from:

Ohio Department of Education  
Office of Curriculum and Instruction  
25 South Front Street  
Columbus, OH 43215-4183  
(614)-466-1317  
[www.ode.state.oh.us/ca/ci](http://www.ode.state.oh.us/ca/ci)

## Academic Connections

### Language Arts

#### *Grade 8-10 Acquisition of Vocabulary*

- Use context clues and text structures to determine the meaning of new vocabulary
- Use multiple resources to enhance comprehension of vocabulary

#### *Grade 11-12 Acquisition of Vocabulary*

- Verify meaning of words by the author's use of definition, restatement, example, comparison, contrast and cause and effect
- Use multiple resources to enhance comprehension of vocabulary

#### *Grade 11-12 Reading Process: Concepts of print, Comprehension Strategies and Self-Monitoring Strategies*

- Apply reading comprehension strategies to understand grade-appropriate texts
- Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing)

#### *Grade 8-10 Reading Applications: Informational, technical and persuasive text*

- Evaluate how features and characteristics make information accessible and usable and how structures help authors achieve their purposes
- Analyze whether graphics supplement textual information and promote the author's purpose
- Utilize multiple sources pertaining to a singular topic to critique the various ways authors develop their ideas (e.g., treatment, scope and organization)

#### *Grade 8-10 Writing Process*

- Formulate writing ideas and identify a topic appropriate to the purpose and audience
- Determine the usefulness of organizers and apply appropriate pre-writing tasks
- Use revision strategies to improve the style, variety of sentence structure, clarity of the controlling idea, logic, effectiveness of word choice and transitions between paragraphs, passages or ideas
- Edit to improve sentence fluency, grammar and usage
- Prepare writing for publication that is legible, follows an appropriate format and uses techniques such as electronic resources and graphics

#### *Grade 11-12 Writing Process*

- Formulate writing ideas, and identify a topic appropriate to the purpose and audience
- Select and use an appropriate organizational structure to refine and develop ideas for writing
- Use a variety of strategies to revise content, organization and style, and to improve word choice, sentence variety, clarity and consistency of writing
- Apply editing strategies to eliminate slang and improve conventions
- Prepare writing for publication that follows an appropriate format and uses a variety of techniques to enhance the final product

*Grade 8-10 Writing Applications*

- Compose narratives that establish a specific setting, plot and a consistent point of view and develop characters by using sensory details and concrete language
- Write responses to literature that extend beyond the summary and support references to the text, other works, other authors or to personal knowledge
- Produce letters (e.g., business, letters to the editor, job applications) that follow the conventional style appropriate to the text, include appropriate details and exclude extraneous details and inconsistencies
- Use documented textual evidence to justify interpretations of literature or to support a research topic
- Write a persuasive piece that states a clear position includes relevant information and offers compelling evidence in the form of facts and details

*Grade 11-12 Writing Applications*

- Compose reflective writings that balance reflections by using specific personal experiences to draw conclusions about life
- Write responses to literature that provide an interpretation, recognize ambiguities, nuances and complexities and that understand the author's use of stylistic devices and effects created
- Produce functional documents that report, organize and convey information and ideas accurately, foresee readers' problems or misunderstandings and that include formatting techniques that are user friendly
- Produce informational essays or reports that establish a clear and distinctive perspective on the subject, include relevant perspectives, take into account the validity and reliability of sources and provide a clear sense of closure
- Use a range of strategies to elaborate and persuade when appropriate, including appeal to logic, use of personal anecdotes, examples, beliefs, expert opinions or cause-effect reasoning

*Grade 8-10 Writing Conventions*

- Use correct spelling conventions
- Use correct punctuation and capitalization
- Demonstrate understanding of the grammatical conventions of the English language

*Grade 11-12 Writing Conventions*

- Use correct spelling conventions
- Use correct punctuation and capitalization
- Demonstrate understanding of the grammatical conventions of the English language

*Grade 8-10 Research*

- Formulate open-ended research questions suitable for investigation and adjust questions as necessary while research is conducted
- Evaluate the usefulness and credibility of data and sources
- Organize information from various resources and select appropriate sources to support central ideas, concepts and themes
- Use style guides to produce oral and written reports that give proper credit for sources (e.g., words, ideas, images and information) and include an acceptable format for source acknowledgement
- Communicate findings, reporting on the substance and processes orally, visually and in writing or through multimedia

*Grade 11-12 Research*

- Formulate open-ended research questions suitable for inquiry and investigation and adjust questions as necessary while research is conducted
- Compile, organize and evaluate information, take notes and summarize findings
- Evaluate the usefulness and credibility of data and sources and synthesize information from multiple sources
- Use style guides to produce oral and written reports that give proper credit for sources (e.g., words, ideas, images and information) and include an acceptable format for source acknowledgement
- Communicate findings, reporting on the substance and processes orally, visually and in writing or through multimedia

*Grade 8-10 Communications: Oral and Visual*

- Use a variety of strategies to enhance listening comprehension
- Analyze the techniques used by speakers and media to influence an audience, and evaluate the effect this has on the credibility of a speaker or media message
- Evaluate the content and purpose of a presentation by analyzing the language and delivery choices made by a speaker
- Demonstrate an understanding of effective speaking strategies by selecting appropriate language and adjusting presentation techniques
- Give informational presentations that present ideas in a logical sequence, include relevant facts and details from multiple sources and use a consistent organizational structure
- Provide persuasive presentations that use varied speaking techniques and strategies and include a clear controlling idea or thesis
- Give presentations using a variety of delivery methods, visual displays and technology

*Grade 11-12 Communications: Oral and Visual*

- Use a variety of strategies to enhance listening comprehension
- Evaluate the clarity, quality, effectiveness and overall coherence of a speaker's key points, arguments, evidence, organization of ideas, delivery, diction and syntax
- Select and use effective speaking strategies for a variety of audiences, situations and purposes
- Give persuasive presentations that structure ideas and arguments in a logical fashion, clarify and defend positions with relevant evidence and anticipate and address the audience's concerns
- Give informational presentations that contain a clear perspective, present ideas from multiple sources in logical sequence and include a consistent organizational structure

**Math***Grade 8-10 Number, Number Sense & Operation*

- Use scientific notations to express large numbers and numbers less than one
- Identify subsets of the real number system
- Apply properties of operations and the real number system, and justify when they hold for a set of numbers
- Connect physical, verbal and symbolic representations of integers, rational numbers and irrational numbers
- Explain the effects of operations on the magnitude of quantities
- Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions
- Find the square root of perfect squares, and approximately the square root of non-perfect squares
- Estimate, compute and solve problems involving scientific notation, square roots and numbers with integer exponents

*Grade 11-12 Number, Number Sense & Operation*

- Apply factorials and exponents, including fractional exponents, to solve practical problems
- Demonstrate fluency in operations with real numbers, vectors and matrices, using mental computation or paper and pencil calculations for simple cases and technology for more complicated cases

*Grade 8-10 Measurement*

- Solve increasingly complex non-routine measurement problems and check for reasonableness of results
- Use formulas to find surface area and volume for specified three-dimensional objects accurate to a specified level of precision
- Apply indirect measurement techniques, tools and formulas, as appropriate, to find perimeter, circumference and area of circles, triangles, quadrilaterals and composite shapes, and to find volume of prisms, cylinders, and pyramids
- Use proportional reasoning and apply indirect measurement techniques, including right triangle trigonometry and properties of similar triangles, to solve problems involving measurements and rates
- Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified of precision
- Write and solve real-world, multi-step problems involving money, elapsed time and temperature, and verify reasonableness of solutions

*Grade 11-12 Measurement*

- Explain differences among accuracy, precision and error, and describe how each of those can affect solutions in measurement situations
- Apply various measurement scales to describe phenomena and solve problems
- Estimate and compute areas and volume in increasingly complex problem situations
- Solve problem situations involving derived measurements (e.g., density, acceleration)

*Grade 8-10 Geometry & Spatial Sense*

- Formally define geometric figures
- Recognize and apply angle relationships in situations involving intersections lines, perpendicular lines and parallel lines
- Use coordinate geometry to represent and examine the properties of geometric figures
- Draw and construct representations of two-and three-dimensional geometric objects using a variety of tools, such as straightedge, compass and technology
- Represent and model transformations in a coordinate plane and describe the results
- Prove or disprove conjectures and solve problems involving two and three-dimensional objects represented within a coordinate system
- Establish the validity of conjectures about geometric objects, their properties and relationships by counter-example, inductive and deductive reasoning, and critiquing arguments made by others
- Use right triangle trigonometric relationships to determine lengths and angle measures

*Grade 11-12 Geometry & Spatial Sense*

- Use trigonometric relationships to verify and determine solutions in problem situations

*Grade 8-10 Patterns, Functions & Algebra*

- Generalize and explain patterns and sequences in order to find the next term and the  $n$ th term
- Identify and classify functions as linear or nonlinear, and contrast their properties using tables, graphs or equations
- Translate information from one representation (words, table, graph or equation) to another representation of a relation or function
- Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations
- Analyze and compare functions and their graphs using attributes, such as rates of change, intercepts and zeros
- Solve quadratic equations with real roots by graphing, formula and factoring
- Describe and interpret rates of change from graphical and numerical data

*Grade 11-12 Patterns, Functions & Algebra*

- Analyze functions by investigating rates of change, intercepts, zeros, asymptotes, and local and global behavior
- Use the quadratic formula to solve quadratic equations that have complex roots
- Use recursive functions to model and solve problems (e.g. home mortgages, annuities)

*Grade 8-10 Data Analysis & Probability*

- Create, interpret and use graphical displays and statistical measures to describe data (e.g., box-and-whisker plots, histograms, scatter plots, measures of center and variability)
- Evaluate different graphical representations of the same data to determine which is the most appropriate representation for an identified purpose
- Compare the characteristics of the mean, median and mode for a given set of data, and explain which measure of center best represents the data
- Find, use and interpret measures of center and spread, such as mean and quartiles, and use those measures to compare and draw conclusions about sets of data
- Evaluate the validity of claims and predictions that are based on data by examining the appropriateness of the data collection and analysis
- Construct convincing arguments based on analysis of data and interpretation of graphs
- Describe sampling methods and analyze the effects of method chosen on how well the resulting sample represents the population
- Use counting techniques, such as permutations and combinations, to determine the total number of options and possible outcomes
- Design an experiment to test a theoretical probability, and record and explain results
- Compute probabilities of compound events, independent events, and simple dependent events
- Make predictions based on theoretical probabilities and experimental results

*Grade 11-12 Data Analysis & Probability*

- Create and analyze tabular and graphical displays of data using appropriate tools, including spreadsheets and graphing calculators
- Use descriptive statistics to analyze and summarize data, including measures of center, dispersion, correlation and variability
- Design and perform a statistical experiment, simulation or study; collect and interpret data; and use descriptive statistics to communicate and support predictions and conclusions
- Connect statistical techniques to applications in workplace and consumer situations

*Grade 8-10 Mathematical Process*

- Formulate a problem or mathematical model in response to a specific need or situation, determine information required to solve the problem, choose method of obtaining this information and set limits for acceptable solution
- Apply mathematical knowledge and skills routinely in other content areas and practical situations
- Recognize and use connections between equivalent representations and related procedures for a mathematical concept; e.g., graph of the function, apply proportional thinking when measuring, describing functions, and comparing probabilities
- Apply reasoning processes and skills to construct logical verifications or counter-examples to test conjectures and to justify and defend algorithms and solutions
- Use a variety of mathematical representations flexibly and appropriately to organize, record and communicate mathematical ideas
- Write clearly and coherently about mathematical thinking and ideas
- Locate and interpret mathematical information accurately and communicate ideas, processes and solutions in a complete and easily understood manner

*Grade 11-12 Mathematical Process*

- Assess the adequacy and reliability of information available to solve a problem
- Select and use various types of reasoning and methods of proof
- Evaluate a mathematical argument and use reasoning and logic to judge its validity
- Present complete and convincing arguments and justifications using inductive and deductive reasoning, adapted to be effective for various audiences
- Use formal mathematical language and notation to represent ideas, to demonstrate relationships within and among representation systems, and to formulate generalizations
- Communicate mathematical ideas orally and in writing with a clear purpose and appropriate for a specific audience

## Science

### *Grade 9-10 Life Sciences*

- Explain that cells are the basic unit of structure and function of living organisms, that once life originated all cells come from pre-existing cells, and that there are a variety of cell types
- Explain the characteristics of life as indicated by cellular processes and describe the process of cell division and development
- Explain the genetic mechanisms and molecular basis of inheritance
- Explain the flow of energy and cycling of matter through biological and ecological systems (cellular, organismal and ecological)

### *Grade 11-12 Life Sciences*

- Explain how processes at the cellular level affect the functions and characteristics of an organism
- Explain how the molecular basis of life and the principles of genetics determine inheritance

### *Grade 9-10 Physical Sciences*

- Describe that matter is made of minute particles called atoms and atoms are comprised of even smaller components. Explain the structure and properties of atoms
- Explain how atoms react with each other to form other substances and how molecules react with each other or atoms to form even different substances
- Describe the identifiable physical properties of substances (e.g., color, hardness, conductivity, density, concentration and ductility). Explain how changes in these properties can occur without changing the chemical nature of the substance
- Explain the movement of objects by applying Newton's three laws of motion
- Demonstrate that energy can be considered to be either kinetic (motion) or potential (stored)
- Explain how energy may change form or be redistributed but the total quantity of energy is conserved
- Demonstrate that waves (e.g., sound, seismic, water and light) have energy and waves can transfer energy when they interact with matter

### *Grade 11-12 Physical Sciences*

- Explain how variations in the arrangement and motion of atoms and molecules from the basis of a variety of biological, chemical and physical phenomena
- Recognize that some atomic nuclei are unstable and will spontaneously break down
- Apply principles of forces and motion to mathematically analyze, describe and predict the net effects on objects or systems

### *Grade 9-10 Science and Technology*

- Explain the ways in which the processes of technological design respond to the needs of society

### *Grade 9-10 Scientific Inquiry*

- Participate in and apply the processes of scientific investigation to create models and to design, conduct, evaluate and communicate the results of these investigations

*Grade 11-12 Scientific Inquiry*

- Make appropriate choices when designing and participating in scientific investigations by using cognitive and manipulative skills when collection data and formulating conclusions from the data

*Grade 9-10 Scientific Ways of Knowing*

- Explain that scientific knowledge must be based on evidence, be predictive, logical, subject to modification and limited to the natural world
- Explain how scientific inquiry is guided by knowledge, observations, ideas and questions
- Describe the ethical practices and guidelines in which science operates

*Grades 11-12 Scientific Ways of Knowing*

- Explain how scientific evidence is used to develop and revise scientific predictions, ideas or theories
- Explain how ethical considerations shape scientific endeavors
- Explain how societal issues and considerations affect the progress of science and technology

# **Appendix A**

## **Review Panels**

# **Criminal Science Technology TCP Futuring Panel Participants**

**Douglas Bodey**, Executive Director, EHOVE Career Center

**Kelly Bodkin**, Public Safety Instructor, EHOVE Career Center

**Joyce Boudreau**, State Consultant, Health Careers Education Career-Technical and Adult Education, Ohio Department of Education,

**Terry Cluse-Tolar**, Associate Professor/Chair, University of Toledo

**Jack Collins**, Dean, School of Criminal Justice, Tiffin University

**George Coxey**, Chair of Criminal Justice/Fire Science Technologies, Owens Community College

**Myrna DeAustria**, Dean, Business and Public Service Technologies, Owens Community College

**Tom Dunlap**, Public Safety Instructor, EHOVE Career Center

**Bill Fox**, Supervisor, Technology Center

**Keith Haley**, Professor of Criminal Justice, Tiffin University

**Ed Harper**, Director, Workforce Development Council

**Tim Jurkovic**, Associate Professor, BGSU Firelands

**Deb Knigga**, Coordinator of Educational Partnerships, Workforce Development Council

**Eric Lambert**, Associate Professor/Chair, Criminal Justice, University of Toledo

**Phil Lohmeyer**, Criminal Justice Teacher, Technology Center

**Nancy Pietras**, Director, Northwest Ohio Tech Prep Consortium

**Kathleen Reed**, Associate Professor/Chair, University of Toledo

**Robert Schaefer**, USA ROTC, University of Toledo

**John Spittler**, Public Safety Instructor, EHOVE Career Center

**Bill Taylor**, Dean, Business and Public Service Technologies, Terra Community College

# **Criminal Science Technology TCP**

## **Focus Panel Participants**

**Michael Brooks**, Special Agent, Alcohol, Tobacco & Firearms

**Mike Brunswick**, Special Agent, Federal Bureau of Investigation

**Ray Carroll**, Captain, Toledo Police Department

**George Jutze**, Lieutenant, State Highway Patrol

**Phil Lucas**, Special Agent Supervisor, Ohio Bureau of Criminal Investigation

**Mike Masterson**, Special Agent Supervisor, Ohio Bureau of Criminal Investigation

**Steve Miller**, Supervisory Deputy U.S. Marshal, U.S. Marshals Service

**John Nye**, Sheriff, Henry County Sheriff Office

**Keefe Snyder**, Sergeant, Toledo Crime Lab

## **Criminal Science Technology TCP Business Panel Participants**

**Gary Bishop**, Chief Assistant-Criminal Division, Wood County Prosecutor's Office

**Michael Brooks**, Special Agent, Alcohol, Tobacco, and Firearms

**Captain Butch Collins**, Captain, Ohio Highway Patrol

**Denise Cubbons**, Lucas County Assistant Prosecutor, Lucas County Prosecutor's Office

**Paul Dobson**, Assistant Prosecuting Attorney, Wood County Prosecutor's Office

**Tom Greenawalt**, Special Agent, Federal Bureau of Investigation

**Mile Heldman**, Sheriff, Hancock County Sheriff's Office

**Doug Hubaker**, Sergeant, Northwood Police Department

**Bruce Schneider**, Assistant Federal Security Director, Department of Homeland Security  
Transportation Security Administration

**Captain William Spraw**, Captain, Findlay Police Department

**Kyle Walton**, Resident Agent in Charge, Alcohol, Tobacco, and Firearms

**James Wurster**, Crime Laboratory Director, Bureau of Criminal Investigation

## **Criminal Science Technology TCP Educator Panel Participants**

**Scott Beckley**, Criminal Justice Instructor, Jefferson County JVSD

**Kristin Blochowski**, Criminal Justice Instructor, Whitmer Career and Technology Center

**Paul Boguski**, Director Kent Tech Prep Consortium, Kent State University

**Michael Boyko**, Program Coordinator/Instructor, Cuyahoga Community College

**Jeff Drake**, Criminal Justice Instructor, Penta Career Center

**Tom Dunlap**, Public Safety Instructor, EHOVE Career Center

**Robert Hill**, Commander, Criminal Justice II Instructor, Licking County JVSD

**Thomas Holdren**, Criminal Justice Instructor, Muskingum Area Technical College

**Michele Johnson**, Criminal Justice Instructor, Owens Community College

**Terry Johnson**, Assistant Professor, Owens Community College

**Andrew Kozal**, Criminal Justice Faculty, Northwest State Community College

**Steven Lab**, Professor, Criminal Justice and Chair, Department of Human Services, Bowling Green State University

**Eric Lambert**, Associate Professor/Chair, Criminal Justice, University of Toledo

**Phil Lohmeyer**, Criminal Justice Instructor, Vanguard-Sentinal Schools

**Jay Manning**, Instructor, Scarlet Oaks Vocational School

**Thomas McAllister**, Police Academy Commander, Sinclair Community College

**James McManus**, Criminal Justice Coordinator, Lorain County Community College

**Darrell Miller**, Public Safety Instructor, Criminal Justice, Four County Career Center

**James Myers**, Criminal Justice Instructor, Buckeye JVSD

**Robert Rice**, Chair, Criminal Justice, Sinclair Community College

**Kathy Steinbeck**, Instructor, Lakeland Community College

**Jeff Traine**, Criminal Justice Instructor, Polaris Career Center

## **Criminal Science Technology TCP Stakeholder Panel Participants**

**Scott Beckley**, Criminal Justice Instructor, Jefferson County JVSD

**Gary Bishop**, Chief Assistant-Criminal Division, Wood County Prosecutor

**Daniel Compora**, Assistant Professor, University of Toledo

**Tom Dunlap**, Public Safety Instructor, EHOVE Career Center

**Doug Hubaker**, Sergeant, Northwood Police Department

**Michele Johnson**, Instructor, Owens Community College

**Terry Johnson**, Assistant Professor, Owens Community College

**Steven Lab**, Professor, Criminal Justice and Chair, Department of Human Services, Bowling  
Green State University

**Eric Lambert**, Associate Professor/Chair, Criminal Justice, University of Toledo

**Phil Lohmeyer**, Criminal Justice Instructor, Vanguard-Sentinal Schools

**Thomas McAllister**, Police Academy Commander, Sinclair Community College

**James McManus**, Criminal Justice Coordinator, Lorain County Community College

**Glen Piper**, Coordinator of Outreach & Partnerships, University of Findlay

**Robert Rice**, Chair, Criminal Justice, Sinclair Community College

**Jamal Salahat**, Assistant Professor, Owens Community College

**Kyle Walton**, Resident Agent in Charge, Alcohol, Tobacco & Firearms

**Jim Wurster**, Crime Laboratory Director, Bureau of Criminal Investigation

# **Appendix B**

## **College Tech Prep Pathway Template**

(High School)

(Career Center)

(Community College)

### College Tech Prep Program

(School Year)

| 9 <sup>th</sup> GRADE                                      | CREDIT | 10 <sup>th</sup> GRADE                     | CREDIT | 11 <sup>th</sup> GRADE                                   | CREDIT | 12 <sup>th</sup> GRADE       | CREDIT |
|--|--------|--|--------|--|--------|------------------------------|--------|
|  |        |  |        |  |        |                              |        |
|  |        |  |        |  |        |                              |        |
|  |        |  |        |  |        |                              |        |
|  |        |  |        |  |        |                              |        |
|  |        |  |        |  |        |                              |        |
|  |        |  |        |  |        |                              |        |
|  |        |  |        |  |        |                              |        |
| <b>Recommended Prerequisites for Grade 11 of Tech Prep</b> |        |  |        | <b>Recommended for College Portion of Tech Prep</b>      |        |                              |        |
|  |        |  |        |  |        |                              |        |
| <b>Junior Year Tech Center/College Technical Courses</b>   |        |  |        | <b>Senior Year Tech Center/College Technical Courses</b> |        |                              |        |
| <b>*Technical Subjects</b>                                 |        | <b>On-transcript _____ College Credits</b> |        | <b>*Technical Subjects</b>                               |        | <b>_____ College Credits</b> |        |
|  |        |  |        |  |        |                              |        |
| <b>Articulated Credits: - _____ Community College</b>      |        |  |        |  |        |                              |        |
|  |        |  |        |  |        |                              |        |

This template is used to facilitate Ohio College Tech Prep Pathways and is submitted by the Ohio College Tech Prep Consortium with the application.  
Revised 6/20/03

DEGREE: ASSOCIATE OF \_\_\_\_\_

- College Tech Prep \_\_\_\_\_

(Career Center)

(Name of College Tech Prep Program)

| Term Taken | First Term  | Pre-requisite | Co-requisite | Quarter Credit Hours | University Pathway Equivalent | Completed as Tech Prep Component |
|------------|-------------|---------------|--------------|----------------------|-------------------------------|----------------------------------|
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
| Term Taken | Second Term | Pre-requisite | Co-requisite |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
| Term Taken | Third Term  | Pre-requisite | Co-requisite |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |

DEGREE: ASSOCIATE OF \_\_\_\_\_

- College Tech Prep \_\_\_\_\_

(Career Center)

(Name of College Tech Prep Program)

| Term Taken | Fourth Term | Pre-requisite | Co-requisite | Quarter Credit Hours | University Pathway Equivalent | Completed as Tech Prep Component |
|------------|-------------|---------------|--------------|----------------------|-------------------------------|----------------------------------|
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
| Term Taken | Fifth Term  | Pre-requisite | Co-requisite |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
| Term Taken | Sixth Term  | Pre-requisite | Co-requisite | Quarter Credit Hours | University Pathway Equivalent | Completed as Tech Prep Component |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |
|            |             |               |              |                      |                               |                                  |

# **Appendix C**

## **Professional Associations**

# **Criminal Science Technology**

## **Professional Associations**

American Academy of Forensic Science  
American Correctional Association  
American Jail Association  
American Society of Law Enforcement Trainers  
Buckeye State Sheriff Association  
Forensic Science Education Programs Accreditation Commission  
Fraternal Order of Police  
International Association of Chiefs of Police  
National Sheriff Association  
Ohio Academy of Trial Lawyers  
Ohio Association of Chiefs of Police  
Ohio Council of Criminal Justice Educators  
Ohio Peace Officer Training Commission  
Ohio Prosecuting Attorney's Association  
Ohio Supreme Court Continuing Legal Education Committee

## **Credentials**

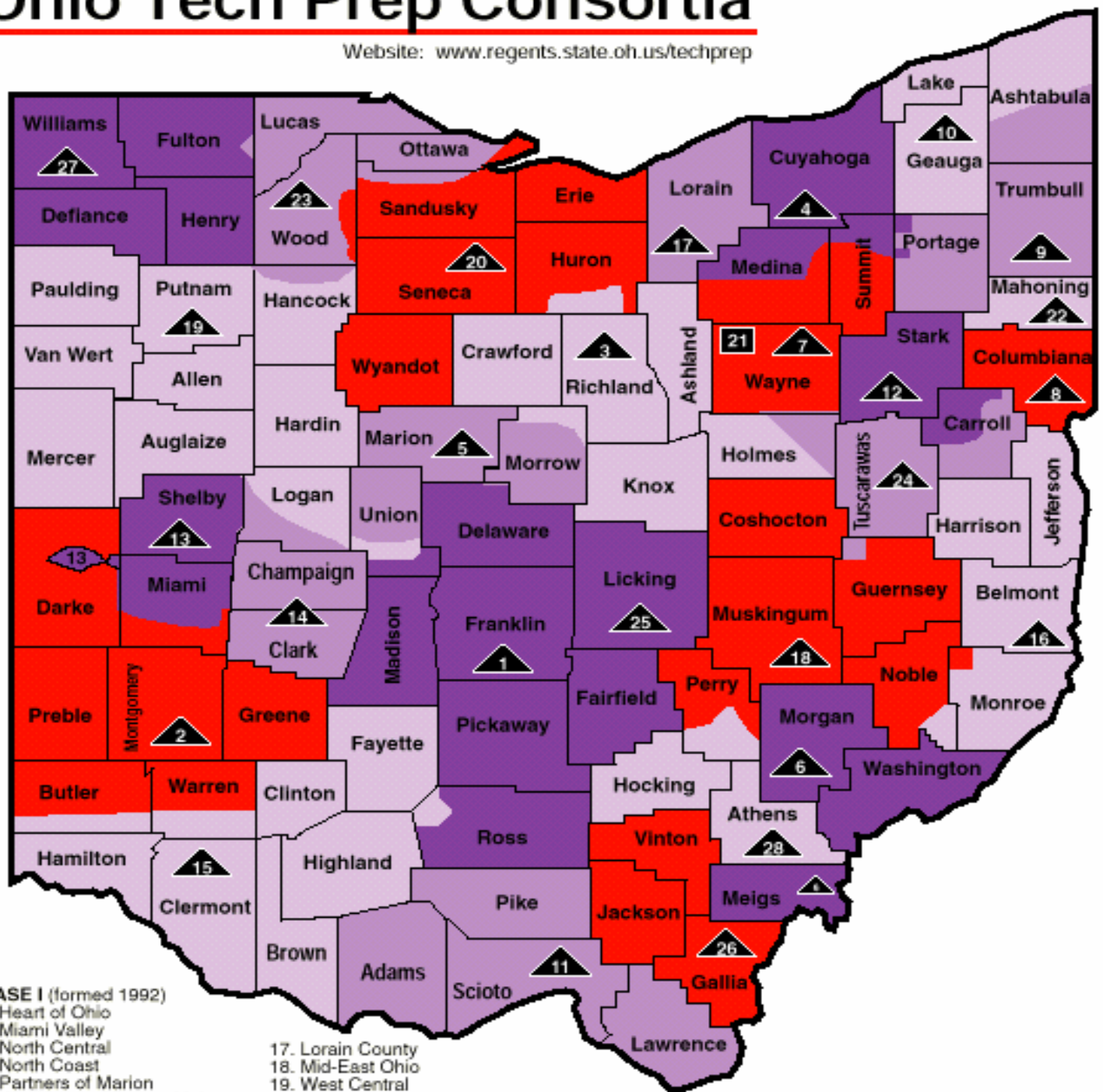
Ohio Peace Officer Training Council Certificate

# **Appendix D**

## **Ohio Tech Prep Consortia**

# Ohio Tech Prep Consortia

Website: [www.regents.state.oh.us/techprep](http://www.regents.state.oh.us/techprep)



**PHASE I** (formed 1992)

1. Heart of Ohio
2. Miami Valley
3. North Central
4. North Coast
5. Partners of Marion
6. Washington-Morgan-Meigs

**PHASE II** (formed 1993)

7. Akron Area
8. Columbiana County
9. Kent
10. Lakeland
11. Ohio South
12. Stark County
13. Upper Miami Valley

**PHASE III** (formed 1994)

14. Clark State
15. Greater Cincinnati
16. Eastern Ohio Valley

17. Lorain County
18. Mid-East Ohio
19. West Central
20. Workforce Development Council

**PHASE IV** (formed 1995)

21. Ohio State - Agricultural Technical Institute (with programs at locations throughout Ohio)
22. Mahoning Area
23. Northwest Ohio
24. Tuscarawas Valley

**PHASE V** (formed 1996)

25. East Central Ohio
26. Ohio Valley
27. Maumee Valley
28. Southeast

*Note: Consortia 8, 9 and 24 merged with headquarters at #9*