

Standards and Competencies for Forensic Science (Course # 5514)

	Begin-End Yr
Standard 1 - Students will know and apply the academic subject matter required to understand the history and development of the field of forensic science.	2009 -
1.1 - Demonstrate proficiency in the definition and history of forensic science.	2009 -
1.2 - Examine the timeline and significant players in the field of forensic science.	2009 -
1.3 - Investigate the evolution of the crime lab from initial tests to modern instruments.	2009 -
1.4 - Demonstrate proficiency in the history and evolution of techniques from basis to more complex.	2009 -
1.5 - Demonstrate proficiency in understanding the steps and positions involved in modern forensic science (such as criminal science, lab analysis, and courtroom testimony).	2009 -
Standard 2 - The students will apply information gained about DNA, its structure and role in heredity to forensic science.	2009 -
2.1 - Describe the two different functions of DNA.	2009 -
2.2 - Illustrate how the structure of DNA relates to these functions	2009 -
2.3 - Outline the stages involved in transcription and translation.	2009 -
2.4 - Describe the role of DNA in heredity.	2009 -
2.5 - Demonstrate proficiency in DNA techniques fundamental to forensic science: DNA isolation, restriction digestion and gel electrophoresis.	2009 -
Standard 3 - The students will demonstrate proficiency in understanding of the science behind forensic identification of individuals including facial recognition software, DNA markers, fingerprints and other unique human features.	2009 -
3.1 - Compare various methods used to identify human remains.	2009 -
3.2 - Demonstrate proficiency in the use of search data bases	2009 -
3.3 - Demonstrate proficiency in analyzing fingerprints.	2009 -
3.4 - Demonstrate proficiency in understanding key facial features used in facial recognition software	2009 -
3.5 - Demonstrate proficiency in reading dental records.	2009 -
Standard 4 - The students will compare the analysis of high profile drugs and how they influence human physiology.	2009 -
4.1 - Be proficient in understanding the biological response that occurs in the presence of certain illegal substances and high profile drugs (such as cocaine, LSD and ecstasy).	2009 -
4.2 - Examine the emotional and financial impact of illegal substances on society and law enforcement.	2009 -
4.3 - Examine methods used to identify high profile drugs at crime scenes and in blood samples.	2009 -
Standard 5 - The student will be aware of procedures for collecting, preserving and securing forensic samples at the crime scene and in the laboratory.	2009 -
5.1 - Be proficient in the terminology and basic procedures for preserving crime scenes, including recognizing, recording, collecting, labeling and storing evidence.	2009 -
5.2 - Analyze methods for securing, searching, documenting, and collecting different types of samples (blood, fingerprints, tracks, and other evidence).	2009 -
5.3 - Be proficient in the basic procedures for securing the crime scene.	2009 -
Standard 6 - The students will demonstrate proficiency in understanding the proper methods and instruments used in the modern crime laboratory to analysis forensic samples.	2009 -
6.1 - Become proficient in understanding the basic principles behind the following scientific instruments used in forensic science: Gas-Chromatography, Capillary Electrophoresis, Polymerase Chain Reaction, Scanning Electron Micros	2009 -
6.2 - Become proficient in knowing when to use the proper instrument.	2009 -
6.3 - Match methods and instruments with the proper forensic evidence, data and outcome	2009 -
6.4 - Evaluate the results from basic forensic data.	2009 -
Standard 7 - Students will interpret their understanding of the legal aspects of forensic science, its application in the judicial system and apply this knowledge to societal issues.	2009 -
7.1 - Determine the legal requirement to obtain a search warrant	2009 -
7.2 - Use language appropriate to the legal aspects of forensic science.	2009 -
7.3 - Use language appropriate to interviewing both crime scene witnesses and scientific expert witnesses	2009 -
7.4 - Evaluate different methods that evidence is obtained and legal protections are guaranteed by the constitution.	2009 -
7.5 - Examine a criminal case study in which legal procedures were not followed properly. Identify what was done incorrectly and how this changed the outcome.	2009 -
Standard 8 - The student will be aware of OSHA regulations, proper attire at the crime scene and in the forensic laboratory and safety guidelines that apply to biohazardous waste.	2009 -
8.1 - Orally report on universal precautions, its history, and how these precautions differ from those used in medical settings.	2009 -
8.2 - Analyze OSHA guideline that must be followed in forensic science.	2009 -
8.3 - Research safety guidelines that apply to biohazardous waste	2009 -
8.4 - Research sources of biohazardous waste in forensic science.	2009 -
Standard 9 - Students will examine the range of careers available in the forensic science and related fields.	2009 -
9.1 - Read, interpret, verbalize, and apply policies and procedures appropriate to a forensic setting.	2009 -
9.2 - Participate in an orientation prior to a research setting.	2009 -
9.3 - Utilize proper communication, critical thinking and problem-solving techniques.	2009 -
9.4 - Research careers in forensic science.	2009 -