COURSE OUTLINE

Administration of Justice 165 Introduction to Forensic Science

I. <u>Catalog Statement</u>

Administration of Justice 165 focuses on the history and principles of forensic science. Topics include crime scene investigation, identification, individualization, and collection and preservation of physical evidence; the establishment of identity through fingerprints, dental records, and DNA; biological and trace evidence; health and safety issues at the crime scene; and crime scene documentation through case notes, photography, videography, and sketches.

Units – 3.0 Lecture Hours – 3.0

Prerequisite: Administration of Justice 101 or equivalent.

II. <u>Course Entry Expectations</u>

Skills Level Ranges: Reading 5; Writing 5; Listening/Speaking 5; Math 2.

Prior to enrolling in the course, the student should be able to:

- 1. describe the criminal justice system;
- 2. describe the objectives of the system, the crime problem, and role expectation of criminal justice personnel;
- 3. describe the system's responsibility to the community, and some general concepts in crime causation;
- 4. recognize the importance of education, training and professionalism in the justice system;
- 5. analyze conceptual level key terms and ideals applied in criminal justice.

III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

- 1. recognize the elements of a crime scene and demonstrate how to locate, identify, collect, and inventory all relevant evidence;
- 2. discuss forensic disciplines of DNA and serology, trace evidence, firearms examination, impression evidence, toxicology, and death investigation;
- 3. analyze, interpret, classify, and compare latent prints;
- 4. locate, process, and preserve latent prints at crime scenes or on evidence;
- 5. prepare evidence to present to the court system as an expert witness.

IV. **Course Content Total Contact Hours = 48** A. Introduction to Forensic Science 3 hours 1. Definition and scope of forensic science 2. History and development of forensic science 3. Services of the crime laboratory 4. Functions of the forensic scientist B. Fundamentals of Crime Scene Investigation 4 hours 1. Initial response and role of the crime scene investigator 2. Crime scene assessment 3. Evidence preservation 4. Legal considerations C. Crime Scene Documentation 3 hours 1. Case notes and written documentation of the crime scene 2. Photography and videography 3. Sketches and measurements 4. Report writing D. Understanding the Physical Nature of Evidence 4 hours 1. Class and individual characteristics 2. Common types of physical evidence E. Evidence Collection 3 hours 1. Evidentiary value identification 2. Preservation, documentation, handling, labeling, collection, and chain of custody of evidentiary items F. Forensic Equipment 2 hours 1. Cameras 2. Latent print processing powders and chemicals 3. Alternate light sources and lasers 4. Scent transfer unit 5. Microscope 6. Magnifier 7. Gas chromatograph 8. Mass spectrometer 9. Adobe Photoshop and ScenePD G. Fingerprints and Palm Prints 6 hours 1. History of fingerprints 2. Fingerprint patterns, classifications, and use for identification 3. Fingerprints at crime scenes 4. Fingerprint processing and development techniques 5. Automated fingerprint identification systems and databases H. Trace Evidence and Impression Evidence 4 hours 1. Trace evidence identification and collection 2. Standard and reference samples

- 3. Footwear, tire, dental/bitemark impression evidence
- 4. Impression evidence casting and processing

I.	Biological Evidence	4 hours
	1. DNA and Serology	
	2. Blood stain patterns and crime scene reconstruction	
	3. Presumptive testing	
	4. Collection of blood evidence	
J.	Firearms and Toolmark Evidence	3 hours
	1. Bullets and shell casings	
	2. Gun shot residue testing	
	3. Toolmarks	
K.	Forensic Pathology and Death Investigation	8 hours
	1. Processing the body	
	2. The Coroner and Medical Examiner	
	3. Cause and manner of death	
L.	Health and Safety at Crime Scenes and Laboratory Settings	2 hours
	1. Bio-hazards and biological fluids and contamination	
	2. Proper personal protective equipment	
	3. Material Data Safety Sheets	
M.	Courtroom Testimony and New Trends in Forensic Science	2 hours
	1. Expert/witness testimony	
	2. Computer forensics	
	3. Future of forensic science	

V. <u>Methods of Presentation</u>

The following instructional methodologies may be used in the course:

- 1. lecture;
- 2. multi-media;
- 3. guest speakers;
- 4. field trips.

VI. Assignments and Methods of Evaluation

- 1. Performance tests and quizzes.
- 2. Midterm examination.
- 3. Individual and group projects. (e.g. projects consist of research projects, forensic case reviews, and mock trial scenarios.)
- 4. Final examination.

VII. <u>Textbook</u>

Saferstein, R., <u>Criminalistics: An Introduction to Forensic Science</u>, Current edition. Upper Saddle River: Pearson Prentice Hall, 2010 10th Grade Textbook Reading Level. ISBN: 9780135045206.

VIII. <u>Student Learning Outcomes</u>

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- 1. The student will be able to recognize the elements of a crime scene and demonstrate how to locate, identify, collect, and inventory all relevant evidence.
- 2. The student will be able to discuss forensic disciplines of DNA and serology, trace evidence, firearms examination, impression evidence, toxicology, and death investigation.
- 3. The student will be able to analyze, interpret, classify, and compare latent prints.
- 4. The student will be able to properly locate, process, and preserve latent prints at crime scenes or on evidence items.
- 5. The student will be able to prepare evidence to present to the court system as an expert witness.