



*Fairfield Ludlowe High School - Fairfield Warde High School*

## **Forensics II: You Can't Fake the Prints**

### **COURSE DESCRIPTION**

**Forensics II: You Can't Fake the Prints** is a laboratory-based course for grades eleven and twelve that will promote and cultivate the development of student's scientific inquiry and scientific method skills, which are important critical thinking skills. Forensics II applies concepts and skills acquired in grades nine and ten to look at the criminal justice area. This course focuses on problem solving, with an emphasis on writing, using experimentation and evidence based conclusions. Students will write reports that record their results, conclusions and analyses of case studies and investigations. Students will participate in hands-on laboratory exercises and simulations that require lengthy laboratory procedures with many recently developed techniques for DNA extraction, DNA fingerprinting by gel electrophoresis, molecular DNA probes, protein analysis, PCR, sequencing, bioinformatics, drug and toxicology testing, impressions, handwriting and document analysis, forensic anthropology and ethics. The course is laboratory driven and requires students to use advanced tools and equipment in addition to excellent observation skills. It is strongly recommended students take Forensics I before taking this course.

### **COURSE OBJECTIVES**

Students will understand that:

- Forensic science requires the interaction of concepts and applications from all areas of science, with emphasis on life science, to analyze and investigate evidence that may be discovered in a criminal investigation. ● Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristics traits for matching to potential suspects and paternity.
- Applying concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
- Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
- Criteria may need to be broken down into simpler ones that can be approached systematically, and decisions about the priority of certain criteria over others (trade-offs) may be needed in processing a crime scene. ● Evaluate a solution to a complex real- world problem based on prioritized criteria and trade-offs that account for a range of constraints, including costs, safety, reliability, and aesthetics, as well as possible social, cultural and environmental impacts.

### **UNITS OF STUDY**

- Biotechnology:
  - o DNA Fingerprinting Unit
  - o Toxicology Unit
- Human Prints & Impressions:
  - o Fingerprints & Impressions Unit
  - o Questioned Documents Unit
  - o Human Remains Unit

### **COURSE POLICIES AND REQUIREMENTS**

#### **GRADING**

#### Cumulative/In-Progress Grade:

- 10% of the grade will be based on formative assessments, homework completion, or behavior (see FPS BOE [Policy 6154AR](#))
- 90% will be based on summative assessments based on a minimum of eight assessments (see FPS BOE Policy 6146AR)

#### End-of-the-Year Grade:

- 90% of the overall course grade will reflect the student's mastery of course content and skills during the school year through the Cumulative/In-Progress Grade.
- 10% of the End-of-the-Year course grade will be based on the Final Assessment.

#### Grade Reporting

- All grades will be communicated through Infinite Campus
- Summative assessment results will be reported back to the student within ten school days from the date of submission or the due date.

#### Guidelines for Late Work (see FPS BOE Policy 6146AR):

- Late work will be accepted for both summative and formative tasks within a defined timeline agreed upon between the student and the teacher
- The total points may be reduced as a penalty for late work

## MATERIALS

\*Forensic Science for High School 2nd Edition by Barbara Deslich and John Funkhouser