

Crook County School District

where students dream, learn, & succeed



<u>School:</u> Crook County High School		<u>Instructor:</u> Jessica Mumm
<u>Course:</u> Forensic Science - Elective		<u>Email:</u> jessica.mumm@crookcountyschools.org
☐	Trimester #1	<u>Phone:</u> 541-416-6900 ext: 3131
☒	Trimester #2	<u>Methods for Communicating with Families:</u> - I will use Parent Square and Email to communicate information for my class. - You can call me at my extension of send me a message and I will respond as soon as I can.
☒	Trimester #3	

Course Description:

- This is a junior/senior - level course rich in exploration and lab investigation which will focus on collection and analysis of crime scene evidence (such as serology, toxicology, entomology, odontology and trace evidence), and explore lab analysis techniques, (such as chromatography, DNA analysis, fingerprinting, and hair and footprint analysis). This course will require students to apply their basic understanding of physics, chemistry, biology and even math to explore the range of topics surveyed.

Learning Standards/Targets:

Term 1 – Introduction to Forensic Science and its History -

- **Students will...**
 - Identify the anatomical structure of hair and explain how macroscopic and microscopic characteristics of hair can be used in crime scene investigation.
 - Evaluate the significance of hair evidence found at a crime scene.
 - Explain the difference between mitochondrial DNA and nuclear DNA as it pertains to hair.
 - Solve a case using hair specimens.
 - Identify various types of fibers and explain how microscopic properties of fibers can be used in crime scene investigation.
 - Test fibers using a burn analysis to determine the identity of an unknown fiber.
 - Classify fingerprints found at a crime scene.
 - Identify minutiae patterns found in an unknown fingerprint and compare those patterns to minutiae patterns of a suspect print.
 - Solve a crime using fingerprint analysis and appropriate lifting techniques.
 - Construct an explanation of DNA's significance to the field of Forensics and evaluate it's use in solving crimes.
 - Follow procedures for extracting and processing DNA through the process of gel electrophoresis.
 - Read DNA profiles and compare them to suspect DNA profiles.
 - Describe how DNA has evolved over the past thirty years and understand how this evolution connects to the work of the Innocence Project.
 - Explain how serological evidence can be significant in solving crimes.
 - Test and identify blood samples and determine the blood type of those samples.
 - Design an experiment to test the effect that gravity and height has on falling blood.
 - Use mathematical formulas to calculate the angle at which a blood stain strikes a surface.
 - Compare blood stain patterns at different velocities, heights, with different weapons, and on different surfaces.
 - Analyze and interpret blood stains found at a crime scene.
 - Identify different characteristics of firearms and cartridges as they pertain to ballistics.

- Draw evidence from striation patterns, breech markings, and firing pin patterns and explain their significance in different scenarios.
- Explain how arson investigators determine if an arson crime has occurred.
- **Crosscutting Concepts:**
 - Patterns: Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.
 - Cause and Effect: Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.
 - Scale, Proportion and Quantity: In considering phenomena, it is critical to recognize what is relevant at different size, time, and energy scales, and to recognize proportional relationships between different quantities as scales change.
 - Systems and Models: A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.
 - Structure and Function: The way an object is shaped or structured determines many of its properties and functions.
 - Stability and Change: For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand.
- **Science and Engineering Practices:**
 - HS-ETS1-2:
 - HS-ETS1-3:
 - HS-ETS1-1:
 - HS-ETS1-4:
 - HS-LS1-1:
 - HS-PS1-2:
 - HS-PS2-1:
 - HS-PS2-4:
 - HS-PS4-2:
 - HS-PS4-5:

Term 2: The Body as Evidence Death and the Human Body

- **Students will...**
 - Explain the role of a forensic toxicologist.
 - Classify common drugs according to schedules (as outlined by the Controlled Substances Act).
 - Identify the presence of an unknown drug sample through lab testing.
 - Describe the effects of alcohol on the human body.
 - Construct an argument for the definition of death and defend your position using a real life case study.
 - Explain the stages of decomposition and how characteristics of the body at each stage can assist investigators in determining time of death.
 - Calculate approximate time of death, given information about livor, rigor and algor mortis.
 - Conduct an autopsy on a fetal pig to determine cause and manner of death.
 - Illustrate the blowfly life cycle and explain how each stage of a blowfly's life cycle can assist forensic investigators in determining post mortem interval.
 - Design and construct an experiment that studies blowflies at their different life cycle stages.
 - Explain how features of the skull can be used to identify an unknown individual whose skeletal remains are found.
 - Identify parts of the pelvic bone that can be used to determine biological sex.
 - Calculate the height of an unknown individual whose skeletal remains are found.
 - Explain how advancements in technology are able to help forensic anthropologists determine the identity of unidentified skeletal remains.

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- HS-ETS1-3:
- HS-ETS1-1:
- HS-ETS1-4:
- HS-LS4-1:
- HS-PS1-2:
- HS-LS1-2:
- HS-LS1-3:
- HS-PS1-5:
- HS-PS3-1:

Instructional Materials:

- Core Texts: *Forensic Science: Fundamentals & Investigations by Bertino & Bertino (2nd Edition)*
- Films, Videos/Other Electronic Media: Forensic Files, True Crime, Documentaries (Boston Strangler, Frozen Ground, Lost Girls, Long Island Serial Killer, and others depending on which topic we are studying) I will be sending home permission forms prior to the movies.
- Novels: N/A
- Other Supplementary Curriculum (Articles, etc.): We will use multiple case studies based on real crimes that have occurred, we will read newspaper articles, and will also be using the innocence project website.
- Planned Guest Speakers: N/A

All Instructional Materials must comply with CCSD School Board [Policy IIA](#) & [Policy IIA-AR](#). A copy of core and supplemental curriculum will be available in the curriculum office for review.

A classroom teacher receiving a complaint regarding instructional materials shall try to resolve the issue informally through the discussion of the original assignment or the opportunity for an alternative assignment.

Notification of the Right to Object to the Use of Material:

Any resident of the district may raise objection to instructional materials used in the district's educational program despite the fact that the individuals selecting such materials were duly qualified to make the selection and followed the proper procedure and observed the criteria for selecting such material.

The first step in expressing objection to materials is consultation with the classroom teacher or library staff and providing a written complaint. The district official or staff member initially receiving a complaint shall explain to the complainant the district's selection procedure, criteria and qualifications of those persons selecting the material. A

classroom teacher receiving a complaint regarding instructional materials shall try to resolve the issue informally through the discussion of the original assignment or the opportunity for an alternative assignment. The materials shall remain in use unless removed through the procedure in section 4. F. (2) of this regulation.

The teacher or library staff receiving the initial complaint shall advise the principal of the initial contact within 24 hours, whether or not the complainant has apparently been satisfied by the initial contact. A written record of the contract shall be maintained by the principal and sent to the superintendent's office.

In the event that the person making an objection to material is not satisfied with the initial explanation or an alternative assignment, the person raising the questions will meet with a building administrator who will provide a Request for Reconsideration form.

For more details, see [CCSD School Board Policy IIA-AR](#).

Citizenship, Classroom Rules, Behavior Expectations:

- *The Board expects student conduct to contribute to a productive learning climate. Students shall comply with the district's policies, administrative regulations, school and classroom written rules, pursue the prescribed course of study, submit to the lawful authority of teachers and school officials and conduct themselves in an orderly manner during the school day and during district-sponsored activities.*

Careful attention shall be given to procedures and methods whereby fairness and consistency without bias in discipline shall be assured to each student. The objectives of disciplining any student must be to help the student develop a positive attitude toward self-discipline, realize the responsibility of one's actions and maintain a productive learning environment.

- *See [CCSD Board Policy JFC](#) for more details.*

Class Expectations

- *Students are expected to be present and active members of the classroom every day.*
- *Students are expected to come to class prepared with all necessary materials and completed assignments to learn and participate in all lectures and activities.*
- *Students are expected to be respectful of the teacher, the classroom, and their peers.*

Class Discipline

Students who are not acting present, coming prepared, and being respectful will earn one of the following consequences:

- *Warning in class*
- *Teacher/Student conference during or after class AND parent contact*
- *Lunch detention AND parent contact*
- *Written referral and sent to the office during activity/lab AND parent contact*

Any student caught cheating on an assignment will receive a zero and be referred to the Principal. There will be a makeup assignment created in the case of cheating, that will need to be completed to make up for the assignment/assessment that the student was caught cheating on.

*CCHS places a high value on the integrity of its student scholars. In addition, realize that all work you turn in **MUST** be your original work. All answers and writing must be your own. Any writing you include that was not yours from any source must be in quotations and attributed to the original author. **Do not plagiarize!***

Grading System:

- *The district's grading system shall be based on Board-adopted course content and is designed to enable the student and parent to clearly know how well the student is achieving course requirements at the student's current grade level or course content level, and be based on the student's progress toward mastery of a continuum of knowledge and skills outlined in Oregon State Standards. Absenteeism or misconduct shall not be the sole criterion for the reduction of students' grades. Behavioral performance shall be reported separately. The district will use letter grades (A,B,C,D,F) that can be converted into a 4 to 0 reporting system in grades 6-12. All AP courses are graded on a 5.0 grading scale.*
- *Grades will be based on many factors, such as: basic instructional assignments, both oral and written; results from various assessment instruments, including critical content short cycle assessments as well as quizzes and exams; class participation; special assignments; research; activities of various types of kinds and special contributions.*
- *See CCSD School Board [Policy IKA](#), [Policy IK](#), & [Policy IK-AR](#) for more details.*

Grading Scale:

- A+: 100-98 A: 97-93 A-: 92-90
- B+: 89-88 B: 87-83 B-: 82-80
- C+: 79-78 C: 77-73 C-: 72-70
- D+: 69-68 D: 67-63 D-: 60-62
- F: 59-0

Course Grading Criteria/Weighting

- Assessment, Projects, Quizzes, Assessments of Learning Standards: 80% → (50% Tests, 20% Crime Sciences, 10% Projects)
- Notebooks & Daily Assignments: 20%

Grades will be derived from a combination of the following:

- Daily Openers → These are graded daily, and a weekly total gets put into the gradebook. The openers can be corrected up until Friday each week. The openers will be deleted as the total scores are entered into the gradebook. AGAIN YOU HAVE UNTIL FRIDAY OF EACH WEEK TO FIX AND COMPLETE OPENERS.
- Daily Assignment/Homework
- Crime Scenes
- Projects
- Quizzes
- Exams
- Notebooks (INB)

**[Policy IK-AR](#): Achievement of learning standards will be assessed separately from behavior.*

Make Up Policy:

- 1) **Assessment Retakes:** [Policy IK-AR](#) Teachers will provide students with multiple opportunities to demonstrate mastery of each standard. Students will be provided with at least two opportunities to retake assessments. A student who retakes an assessment will not be penalized. Teachers can modify assessments (more rigorous to account for greater time allowed for preparation.) Teachers will determine student requirements for assessment retakes that align with Policy IK-AR.
- 2) **Homework/Daily Work:** Achievement of learning standards will be assessed separately from behavior (i.e. attendance, disruption, late work, tardiness, preparation, effort, attitude, etc.). Teachers may set guidelines around submission timelines, as this category is tied to learning progress, please refer to policy IK-AR. → **Students will have 2 weeks from the due date of an assignment to turn in the assignment for credit.**

**For all courses that articulate with a college or university, it is required that the syllabi match the accrediting institution, rather than the CCSD syllabus model.*

Please sign and return your Syllabus. Parents/Guardians if you have any questions or concerns please contact your student's teacher.

Student Name: _____ Date: _____

Parent Name: _____ Date: _____

Parent Signature: _____