**Methods/Applications in Forensic Science**



**Dr. Murphy**

**Course Information**

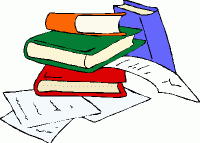
**Forensic Science**

Forensic science is the study and use of basic scientific concepts and technologies related to solving crime in society. Through study of forensic science techniques, learners are given the opportunity to explore and further understand how basic scientific concepts apply specifically to this field of study.

Learning in this course will begin by the acquiring of the knowledge of basic scientific concepts. These scientific principles will then be applied and authenticated through discussion of realistic scenarios and by engaging in concrete learning activities such as laboratory experiments, internet research assignments, and case study examples. This course will encourage those interested in a career in forensic science to further pursue this area of interest, while at the same time this course will offer those students who are simply curious a further appreciation of this unique scientific field.

**Text, Supplies**

**Text:** Forensic Science; An Introduction to Scientific and Investigative Techniques, by James, S. H., and Nordby, J. J., Taylor & Francis Publishing, 2005.



To ensure optimum successstudents are expected to bring the following supplies to class daily:

* A 3-ring binder or notebook specific for this class, Pencil / Pens, and a folder to hold onto any work.

**Course Evaluation and Grading Policy**

Quarter Grades are calculated on a weighted average system using different categories:

**Reading Checks/ Quizzes – 25% Classwork/Labs – 25%**

**Papers/CSI Reflections – 25% Participation– 25%**

**Your final grade for the semester will be the average of the 1st two quarter grades and your Final project grade.**

2 quarters averaged = 80% of final grade Project = 20% of final grade

**Quizzes** – Includes any quizzes or short assessments administered during class time. Quizzes will be announced in advanced, and usually occur after a completion of a topic of study. (~6/qtr) **If you miss a quiz, it is expected you will take it right away during your next attended class.**

**Reading Checks** – Assignments that are designed to ensure reading assignments are completed and are focuses to the most pertinent and relevant sections of the chapters. **Reading Check Assignments will be announced one week in advanced and is due the following Monday, or, in case of an absence, your first day back to school. *Assignments will be downgraded (5 pts) every day that it is late.***

**Class work:** Tasks that are assigned and expected to be completed during class time. This is usually group work, discussions, case studies, Video reflections.. etc. Make-ups for theses are individual and are due in a reasonable amount of time after your return.

**Labs** – Includes, but not limited to, any experiments, hands-on activities, or video labs; evaluated by a conclusion statement, lab report, or synopsis. **Due to the chemical and time-sensitive nature of our labs, the deadline for Lab make-ups will be *one week* after the lab has been completed in class.**

**Papers** – Short internet research assignments (i.e. could be a topic study or case analysis) that demonstrate your research capabilities, communication of information, and connection to concepts in the course. **There is one paper due every quarter**. Topics are provided well in advance, and some computer lab time may be built in. Guidelines, requirements, rubrics, and such will be discussed in class.

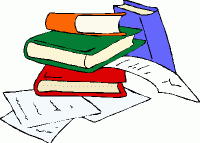
**CSI Reflections –** Short reflections on CSI type videos shown in class. Reflection will be due the next day after the episode is shown. Criteria will be discussed in class.

**Participation -** Participation is a big part of this course. There are many ways to participate. It does not mean that you have to offer a comment in class to get credit. It means: **Be in attendance (**you lose participation for too many absences**), be on time, stay attentive, be involved with your lab group (**sitting back and having one person do all the work will cause you to lose points**), and show a respectful attitude to your classmates and the learning that is happening in class (**excessive talking and sidebar comments will cause you to lose points**).**

**Final Project** – The end-of-semester project assigned as a cumulative assessment; usually a complete crime scene analysis or research assignment. **The deadline is the last day of the semester. So there are no late acceptances or make-ups.**

**Make-Up Work**

It is the ***responsibility of the student*** to ask forand make-up any missed assignments. **Deadlines for make-ups will be posted on the weekly outline**. When possible, alternate assignments *may* be made available to substitute for those who missed the deadline due to legal absences.



**Extra Credit**

Extra Credit will be available throughout the semester. Students will be encouraged to participate in extra credit assignments and share ideas for any independent projects.

**Classroom Expectations**

1. **Attendance:** Students are expected to be in class every day that it is in session. Frequent absences result in loss of content, missing lab criteria, and a general unawareness of deadlines.
2. All school rules apply concerning attendance, tardiness, passes, electronic devices, etc ….you’re all juniors and seniors; you know what you need to do to be successful.
3. This classroom is a science room used by different science teachers throughout the day. Due to safety and health reasons there is no eating in the room. Plan your meals and snacks accordingly.
4. **What do I need to know about the Forensics class?**
   1. **Reading/Reading Check Assignments:** This course requires you to stay up on your reading. Chapter and page assignments are given out in advance on the weekly outline. It is up to you to stay with the pace the course sets.
   2. **Labs:** Labs will be conducted throughout the course.
      1. **Lab Safety**: Lab safety contracts will be reviewed and need to be signed by both parent/guardians and the students. ***Students who demonstrate unsafe or dangerous behavior in the lab setting will forfeit any further involvement in*** ***the course.***
   3. **Extra Help**: Dr. Murphy is available for extra help after school on Tuesdays and Thursdays 2:15-2:55 in W-27.
   4. **What if I am absent for a few days?**
      1. E-mail Dr. Murphy at [kmurphy@northsalemschools.org](mailto:kmurphy@northsalemschools.org)
      2. Call the front office and ask for a homework request to be left in our mailboxes
      3. Plan on staying after school a few days after you return to school to ‘catch up’
   5. **What if I don’t understand everything in class?**
      1. Plan to stay after or make an appointment to see Dr. Murphy during the day.
   6. **Can I make corrections to assignments?**
      1. **YES!!** – most often people learn by making mistakes and then correcting them
      2. You may correct any **reading check, paper, or lab** assignment for half point return. **Corrections may only be done once and need to be completed within several days of the assignment returned.** (So don’t wait until the last day of the marking period, and the decide to correct everything…I won’t take it)
      3. Quiz corrections are suggested, however, **the Quiz grade stands as is**. Assessments evaluate your progress in the course, your understanding of the content, and the time devoted to the reading assignments. I don’t want you to modify your study habits because you think you will get to ‘make corrections if you do poorly’.

**The teacher reserves the right to amend any or this entire course syllabus during the 2014-2015 school year.**

**Content Outline**

The following is an outline for the material that will be covered in this course throughout the semester. The amount and depth of content area will be determined by the results of the class assessments, time restraints, amount of available resources, and high school lab guidelines.



1. **Introduction to Forensic Science**
2. **Physical Evidence**
   * 1. Types of physical evidence
     2. Significance of physical evidence
3. **The Crime Scene**
   * 1. Investigating the crime scene
     2. Crime scene procedures
4. **Fingerprints**
   * 1. Types and patterns of fingerprints
     2. Principles of fingerprinting
     3. Preservation of fingerprints
5. **Footwear and Tire Track Impressions**
   * 1. Location and recovery of footwear impressions and tire tracks
     2. Track and wear patterns
6. **Hair, Fibers, and Paint**
   * 1. Morphology of hair
     2. Identification and comparison of hair
     3. Types of fibers
     4. Comparison and preservation of fiber evidence
     5. Forensic examination of paint



1. **Bloodstain Patterns**
   * 1. Properties of human blood
     2. Size, shape and directionality of bloodstains
     3. Spattered blood
2. **Questioned Documents**
   * 1. Types of fraudulent writing
     2. Comparisons of handwriting
3. **Glass and Soil**
   * 1. Forensic glass analysis
     2. Analysis of minerals and soils
4. **Firearms, Ballistics, and Tool mark impressions** \*\*\*Time permitting\*\*\*
   * 1. Identification of tool marks characteristics
     2. Classification of cartridge cases, gunpowder residue, and bullets

**Methods/Applications in Forensics**

.

Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I have read the course the syllabus for Methods/Applications in Forensic Science and I understand the requirements and expectations along with my responsibilities regarding:

- Grading Policy \_\_\_\_\_ (initial)

- Attendance \_\_\_\_\_\_\_ (initial)

- Reading Assignments \_\_\_\_\_\_ (initial)

- Reading Checks \_\_\_\_\_\_\_ (initial)

- CSI Reflections \_\_\_\_\_\_\_\_ (initial)

- Make-up work \_\_\_\_\_\_(initial)

- Lab make-ups \_\_\_\_\_\_ (initial)

- Lab safety \_\_\_\_\_\_ (initial)

Student Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_

Parent Signature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_

\*\*Please tear off this last page and turn in by Monday, Sept 8\*\*\*