Course title and number  FIVS 123 Forensics  
Term (e.g., Fall 200X)  Fall 2014  
Meeting times and location  MWF  
Credit Hours  3.0  

Course Description and Prerequisites
An overview of Forensics that begins at an incident scene and ends with a courtroom verdict. Course topics address the principles, concepts, tools, and methodologies used in the science and practice of forensics. Lectures and exercises include examination of various forensic fields inclusive of the nature and types of evidence collected at incident scenes, the analysis of this evidence and generation of evidence-based conclusions, and the presentation of these findings to a diverse audience (of jurors, judges, etc.)

Prerequisites: none.

Learning Outcomes or Course Objectives
Upon completion of this course, students will be able to:
- Articulate the foundational principles to the forensic sciences and appropriately apply them to an array of field situations,
- Name and comprehend specific methodologies and appropriately apply them to problem solving,
- Collect, organize, and analyze evidence to generate informed conclusions,
- Challenge concepts, dispute evidence, and question conclusions within the context of reaching a group consensus,
- Formulate and present convincing arguments comprehensible by diverse audiences,

Instructor Information
Name  Kevin M. Heinz
Telephone number  979-862-3407
Email address  kmheinz@tamu.edu
Office hours  TBD
Office location  BCC 108

Textbook and/or Resource Material

Grading Policies
Activities and assignments (9 @ 20 points each)  180 pts
Examination 1  100 pts
Examination 2  100 pts
Examination 3  100 pts
Group Project Part 1  70 pts
Group Project Part 2  30 pts
Total Points  580
Final grades will be based on the percentage of total points earned:

A=90–100%; B=80–89%; C=70–79%; D=60–69%; F=<60%

Course Topics, Calendar of Activities, Major Assignment Dates (Based on Fall 2013 Calendar)

Week 1 (Week of August 25):

Classroom Tasks
- Discuss the field of Forensic Science, the professionals working in the various fields, and the agencies that employ such professionals
- Discuss the Scientific Method and its application in Forensic Science
- Individual Classroom Exercise: Read the case provided, evaluate the information and data, calculate the wavelength used in the examinations, determine the nature of the light used, and conclude the type of evidence examined.

Writing Assignment (Due Week 2)
- Evaluate a scientific journal article and write a paper that includes: (1) a summary of the article, (2) how the Scientific Method is represented in the article, and (3) how the article could be expanded in scope or be of greater value to the forensic community.

Outside Reading Assignment
- Chapter 1: Introduction to Forensic Science
- Chapter 5: Light and Matter

Week 2 (Week of September 1):

Classroom Tasks
- Collect Writing Assignment from week 1
- Discuss separation methods used in laboratories for the analysis of evidence
- Discuss how specific types of microscopes are employed to identify different types of evidence
- Examine the classification system of evidence
- Discuss class and individualizing characteristics

Group Assignment
- The class will be divided into groups; each group will break down into subgroups of Investigators, Forensic Scientists, and Reviewers. Tasks are as follows:
  - Investigators are to read a provided scene scenario and complete an Evidence Submission form for the Crime Laboratory that contains items submitted for analysis.
  - Forensic Scientists are to analyze the submission form and indicate for each item listed: (1) whether the item has class or individualizing characteristics and (2) which forensic tool will be used for analysis.
  - After submission and analysis, Reviewers will evaluate both the scene scenario and the submission form to conclude: (1) whether all evidentiary items were submitted and (2) whether items were properly classified and examined.

Outside Reading Assignment
- Chapter 4: Separating Complex Mixtures
- Chapter 6: Microscopy
- Chapter 3: The Nature of Evidence
Week 3 (Week of September 8):

Classroom Tasks
- Discuss the goal of crime scene investigation
- Examine modes of scene documentation
- Discuss legal aspects of searching and seizing evidence

Outside Reading Assignment
- Chapter 2: Crime Scene Investigation

Week 4 (Week of September 15):

Classroom Tasks
- Examine types of search methods
- Discuss collection and preservation of evidence
- Examine evidence processing methods
- Examination 1

Week 5 (Week of September 22):

Classroom Tasks
- Discuss the development of friction ridge skin
- Examine the methodology used in latent print examination
- Examine documentation and collection methods for impression evidence

Group Assignment
- The class will be divided into groups; each group will break down into subgroups of Latent Print Examiner (LPE) Case Agents and Validation Latent Print Examiners (LPEs). Tasks are as follows:
  - LPE Case Agents will examine and compare unknown and known fingerprints using the ACE-V methodology to determine identifications. Findings will be documented on an LPE Examination form.
  - Validation LPEs will conduct blind, independent examinations on the same unknown and known fingerprints and document findings on an LPE Validation form.
  - After all examinations are complete, each group of LPE Case Agents and Validation LPEs will (1) review all findings, (2) discuss conflicting findings, and (3) resolve conflict to arrive at an agreed upon finding.

Outside Reading Assignment
- Chapter 7: Fingerprints and Other Impressions

Week 6 (Week of September 29):

Classroom Tasks
- Discuss types of questioned documents examinations
- Examine different types of firearms evidence
- Discuss the examination and comparison process of firearms evidence

Outside Reading Assignment
- Chapter 9: Firearms and Toolmarks
Week 7 (Week of October 8):

Classroom Tasks
- Examine the nature of polymer evidence
- Discuss the forensic value of glass
- Individual Classroom Exercise: Read the case provided and reconstruct the glass pieces of a glass pane using an alternate light source. Examine the stress marks of the appropriate radial fracture to conclude the direction of force. (Notes concerning the examination process should be taken to be incorporated into the writing assignment.)

Writing Assignment (Due Week 8)
- Write a paper based on the individual classroom exercise that includes: (1) synopsis of the case, (2) the issue/question being addressed, (3) the materials/tools used in the examination, (4) steps/process applied in the examination, and (5) a conclusion.

Outside Reading Assignment
- Chapter 18: Fibers, Paints, and Other Polymers

Week 8 (Week of October 13):

Classroom Tasks
- Collect Writing Assignment from week 7
- Discuss the application of toxicology in forensics
- Examine the relationship between blood alcohol content (BAC), impaired behavior, and drunk driving laws
- Individual Classroom Exercise: Read the case provided, evaluate the information and data, and calculate the BAC for each person to determine who was legally intoxicated.
- Examination 2

Outside Reading Assignment
- Chapter 17: Forensic Toxicology

Week 9 (Week of October 20):

Classroom Tasks
- Discuss the forensic value of hair
- Discuss the modes of hair analysis
- Discuss the forensic value of biological fluids

Outside Reading Assignment
- Chapter 15: Hair
- Chapter 13: Serology

Week 10 (Week of October 27):

Classroom Tasks
- Discuss blood analysis
- Examine and discuss Bloodstain Pattern Analysis
- Individual Classroom Exercise: Read the case provided and the investigative statement. Use the data provided to calculate (1) the angle of impact of the bloodstains and (2) the area of origin. (Notes concerning the examination process/calculations should be taken to be incorporated into the writing assignment.)
Writing Assignment (Due Week 11)

- Write a paper based on the individual classroom exercise that includes: (1) synopsis of the case, (2) the issue/question being addressed (investigative statement), (3) the data/tools used in the analysis, (4) steps/process applied in the analysis, and (5) the conclusion (whether the investigative question is supported or not supported and why).

Week 11 (Week of November 3):

Classroom Tasks

- Collect Writing Assignment from week 10
- Discuss DNA as forensic evidence
- Discuss death investigation and examine characteristics related to postmortem interval
- Discuss and examine Event Analysis

Group Project Part 1 (Due Week 13)

- The class will be divided into groups. Each group will receive an investigative case file containing: a scene report, supplemental reports, photographs, sketches, medical examiner report, and laboratory reports. Based on the case file information, answer the investigative question by conducting Event Analysis and creating a flow chart reflecting the sequence of the action of the episode. Prepare a case review for submission and class presentation that includes the following: (1) case synopsis, (2) flow chart, and (3) evidence-supported statement answering the investigative question.

Outside Reading Assignment

- Chapter 14: DNA Typing
- Chapter 10: Forensic Pathology

Week 12 (Week of November 10):

Classroom Tasks

- Discuss identification methods used in forensic anthropology and forensic odontology
- Discuss factors affecting the entomological post mortem interval
- Discuss forensic science as it relates to the law and the courtroom

Outside Reading Assignment

- Chapter 11: Anthropology and Odontology
- Chapter 12: Forensic Entomology
- Chapter 21: Forensic Science and the Law

Week 13 (Week of November 17):

Classroom Tasks

- Collect Group Project Part 1 from week 11
- Group presentation of their Group Project Part 1
- Examination 3

Group Project Part 2 (Due Week 16)

- The class will remain in the groups created in Group Project Part 1. Each group will receive a case review file produced by another group as well as the investigative case file used to generate it. Peer review will be conducted on the case review file and a review document generated that evaluates the case review file for the following:
  - Completeness: inclusion of case synopsis, flow chart, response to investigative question
  - Professionalism: neatness, proper grammar and spelling
  - Sound reasoning: conclusion based on information/data provided in the investigative case file
Week 14 (Week of November 24): Thanksgiving Holiday 27 Nov.- No Class Fri 28 Nov.

Week 15 (Week of December 1): Class meets Redefined Day-Monday 1 Dec.; Reading Days 3-4 Dec., No class.

Week 16 (December 8): Group Project Part 2 Due on Final Exam Date/Time to be announced.

Other Pertinent Course Information

Attendance:
The university views class attendance as an individual student responsibility. You are expected to attend class and to complete all assignments. Weekly activities and due dates for individual presentations and written essays are outlined in the syllabus. Your timely completion of all assignments and your participation in weekly class meetings are a key element of the course. Your contributions are important for your own growth as well as that of your classmates. If you request an excused absence you must comply with student attendance rules (see http://student-rules.tamu.edu/rule07) and you are expected to uphold the Aggie Honor Code and Student Conduct Code (see http://student-rules.tamu.edu/rule24). No participation points will be awarded for missed classes, but there will be no penalty.

Oral Presentations:
Oral presentation scores will be based on organization, length, grammar, diction and structure, and effectiveness of each presentation. Students should review information provided by the University Writing Center (see http://writingcenter.tamu.edu/how-to/communication/) for elements associated with effective speaking.

Written Assignments:
Written assignments will be scored on organization, format, sentence structure, grammar, spelling, and content. Students should review information provided by the University Writing Center (see http://writingcenter.tamu.edu/how-to/) for elements associated with effective writing. Except for days covered by excused absences, a penalty of 10% of the maximum points will be assessed for each day an assignment is turned in late.

Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu

Academic Integrity
For additional information please visit: http://aggiehonor.tamu.edu

"An Aggie does not lie, cheat, or steal, or tolerate those who do."