

**COURSE SYLLABUS  
FIREARMS & TOOLMARKS  
FORS 5114  
FALL 2017  
1 CREDIT HOUR**

**Instructor:** Sarah Kerrigan / Kevin Callahan (Texas Department of Public Safety – Garland Regional Crime Laboratory)  
**Office:** Off campus  
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**Time:** Friday September 1, 2017, 12:30 to 4:50 PM Huntsville PD Firing Range  
Friday September 8, 2017, 12:00 to 4:50 PM CFS Room TBD  
Friday September 15, 2017, 12:00 to 4:50 PM CFS Room TBD  
Final Exam: Friday September 22, 2017, 12:00 to 2:00 PM CFS Room TBD  
**Room:** Chemistry and Forensic Sciences Building (CFS) Room TBD  
**Office Hours:** By appointment.

**Course Text**

Bussard, Michael E. and Stanton L. Wormley Jr., The NRA Firearms Sourcebook, the National Rifle Association of America, Virginia, 2006.  
(Available at <http://www.nrastore.com/nra-firearms-sourcebook>)

**Course Description**

This course is designed to provide the students with a firm theoretical understanding of firearm and toolmark identification forensic discipline. Readings, assignments, and assessments will be combined with classroom instruction for a more holistic understanding of the field. Emphasis will be made on the application of knowledge to real world situations a firearms examiner is likely to see performing casework. Topics such as history of firearms and the firearms identification discipline, firearm function and troubleshooting, physical comparison of fired ammunition components, and related firearms identification sub-disciplines will be discussed.

**Course Objectives**

- 1) To gain a firm understanding of the history, science and theory of the firearm and toolmark discipline.
- 2) To learn the theory behind the instrumentation and techniques integral to the firearms and toolmark identification.
- 3) To effectively apply classroom knowledge to real world situations in problem-solving scenarios.

**Course Requirements**

Graduate standing in forensic science.

**Grading**

Reading Quizzes	25%
Assignments	25%
Final Written Exam	50%

Quizzes will be administered at the start of each class session and will cover material in the assigned reading. Assigned readings will be from the course text as well as articles and papers that will be provided by the instructor. As this course is offered over an intensively shortened timeframe, it is imperative all students keep up with the assigned reading. Not all content in the reading will be covered in the lecture, but students will be expected to understand and retain the content in these readings for the final examination. The purpose of the reading quizzes is to encourage students to keep up with the reading and to give the students a feel for how the instructor forms examination questions prior to the final exam.

Assignments will be given on a regular basis and are due at the beginning of the following class session unless otherwise stated by the instructor. The instructor reserves the right to refuse late work. No late work will be accepted unless arrangements have been made with the instructor before the assignment is due. Assignments will vary from being based on assigned readings, to practice practical exams using the Keyence Digital Microscope, to stand alone content.

The final written examination will be composed of multiple choice questions, true-false questions, fill in the blank questions, and/or short answer questions. The final examination and tests may be composed of any combination of the aforementioned question types or may be composed of only two or three of the question types. The final examination is comprehensive and may be based upon any information from anytime during the course. I. E., material for the final exam may come from material covered in class, assigned readings, quizzes, or assignments. Note that not all material in the assigned reading will be covered in class, but students will still be expected to understand and retain this information for the final exam. No make-ups will be given for the final exam unless arrangements have been made prior to the exam date.

It is the student's responsibility to monitor the accuracy of their grades.

#### **Attendance and Make-up Policy**

Students are expected to meet with the facilitator when directed to do so. It is imperative the student attends all class sessions in order to perform well in this course. Make-ups will not be permitted without previous approval from the instructor based on extenuating circumstances.

Appeals will be handled in accord with University Policy Statement 900823, Academic Grievance Procedures for Students.

**Student Academic Policies** concerning Attendance, Academic Honesty, Disabled Student and Services for Disabled Students, and Absences on Religious Holy days may be found at: <http://www.shsu.edu/dept/academic-affairs/aps/aps-students.html>

**Course Content Use of Telephones and Text Messagers in Academic Classrooms and Facilities:** Per <http://www.shsu.edu/dept/academic-affairs/aps/aps-curriculum.html> the use of telephones and text messagers during classroom instruction is prohibited. These devices may be used during breaks in classroom instruction. The use of these devices at any point in the duration of an examination or testing period is strictly prohibited. Emergency use of such devices is will be given consideration by the instructor based on extenuating circumstances.

#### **Course Content**

- 1) History and Evolution of Firearms and Ammunition
- 2) Instrumentation (Comparison Microscope, Stereomicroscope, Bullet Recovery Systems, etc.)
- 3) Modern Firearms (Function, Safety Systems, Rifling Techniques, Troubleshooting, etc.)
- 4) Modern Ammunition (Components, Function, Design and Morphological Characteristics, Caliber Determinations, etc.)
- 5) History of Firearms Identification (Historic Firearms Cases, Triumphs and Pitfalls, Daubert, etc.)
- 6) Modern Firearms Identification (Bullet and Cartridge Case Comparisons, Range of Conclusions, Criteria for an Identification/Elimination, Pattern Matching vs. CMS, etc.)
- 7) Sub-Disciplines (Toolmarks, Serial Number Restoration, Distance Determinations, Trajectories, etc.)

**The final examination will take place on Friday, September 22, 2017, from 12:00 to 2:00 PM in the CFS Building (Room TBD).**