

**COURSE SYLLABUS
FORS 6014
FORENSIC SCIENCE RESEARCH
Fall 2017/SPRING 2018**



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Class Hours: N/A
Office Hours: Mondays 10:00 – 1:00
Other times by appointment.
Textbook: N/A
Prerequisites: Students must be enrolled in the Master of Science in Forensic Science.

Course Description

Students enrolled in the MS in Forensic Science are required to conduct research and produce an article of scholarly writing that demonstrates advanced discipline-specific knowledge, investigation, and problem-solving ability in a capstone or thesis environment. Students will have the opportunity and will be encouraged to submit this work for external publication and/or presentation at regional and/or national scientific meetings.

The capstone experience consists of an independent research project conducted over two semesters that should culminate in a body of work of publishable quality. The research is conducted in a thesis-like environment under the direction of a committee comprised of the following: A faculty member in the Department of Forensic Science serves as the *coordinator*, meeting with student(s) at designated intervals. The *coordinator* facilitates the capstone experience by helping the student identify a faculty member knowledgeable in the pertinent area. This individual, known as the *faculty advisor*, is typically a full-time faculty member within the College of Criminal Justice (Department of Forensic Science) or College of Sciences. The *faculty advisor* serves as the Chair of the committee. An outside expert willing to participate in the students' educational experience may serve as an *external advisor* with prior approval from the Program Director and *faculty advisor*.

The *faculty advisor* provides consultation and guidance to the student on an ongoing basis and assumes responsibility for monitoring progress and reviewing submitted materials by the specified timelines. Students will prepare a final written report and present the work orally in an open public forum at the end of the academic year.

This independent study allows students to obtain credit for research. All projects and proposals must be approved by the *Department Chair* prior to engaging in laboratory-based research and all rules regarding safety and institutional review boards must be followed. Students may be

permitted to use scientific data obtained during the internship upon approval from the *coordinator*.

Each student has a Capstone Research Committee, which is comprised of the *coordinator* and *faculty advisor(s)/external advisor(s)*. Each Capstone Research Committee consists of at least three members, one of whom must be external to the Department of Forensic Science. Collectively, the Capstone Research Committee provides guidance, an environment conducive to scholarly research, and assumes responsibility for assessment and evaluation of the work. The *faculty advisor* serves as Chair of the Capstone Research Committee.

Course Objectives

During the capstone course students must complete an independent research project which demonstrates integration of discipline-specific knowledge and skills, problem-solving ability and effective written and oral communication. The project may require a consolidation of basic sciences, statistics, analytical and/or investigational methodology, and/or instrumental techniques.

Specific objectives and goals are given below:

1. Learn to apply course materials to improve critical thinking, problem-solving, and decision making.
2. Develop specific skills, competencies, and points of view needed by professionals in forensic science.
3. Use a wide variety of resources to answer questions, solve problems, and manage a research project.
4. Stimulate intellectual effort, problem-solving ability and develop laboratory skills beyond those typically required.
5. Encourage independence and inspire students to set and achieve challenging goals.

Attendance Policy

This is an independent study. In order to be successful most students will need to dedicate at least the equivalent of three full-time days per week in the laboratory/field. This excludes time spent reading, writing and analyzing data. Students are expected to make a significant and consistent time commitment throughout the entire academic year.

Assignments

Students must submit **a title of their proposed capstone project by Friday September 15, 2017 (MODIFIED DUE TO HURRICANE HARVEY)**. Interim reports (progress reports) are due to the coordinator and faculty advisor(s) on or before **November 1, 2017 (#1), January 1, 2018 (#2), March 1, 2018 (#3)**. Students may also be asked to orally present their data during the academic year to demonstrate progress and develop communication skills. No later than January 31, the *faculty advisor* will convene a meeting between the student and at least one additional member of the committee. The faculty advisor will determine the length and scope of the meeting. In order to initiate discussion students are expected to provide a brief (10-15 minute) presentation to summarize the status of the research. The chair of the committee (*faculty advisor*) will schedule additional meetings with the committee as needed.

Students will submit a final report summarizing their experimental methods, results and conclusions. Original data may be submitted separately. The report shall be formatted using the standardized thesis template (provided electronically). References should be formatted using a journal style determined by the *faculty advisor*. Students are provided training on citation management software (Endnote) and are required to use this, unless otherwise approved by the *faculty advisor*. The paper will incorporate both an explanation of the science involved and the applicability of the subject to forensic science. Background information in the report will comprise a part of the paper to the extent necessary to properly demonstrate the evolution of the subject and explain the events leading to the utility of a methodology. **In order for faculty to review reports and provide feedback, students have the responsibility to submit the first draft to their faculty advisor no later than the first week of April and a final draft no later than Friday April 20, 2018. Drafts submitted outside of this timeline may not be reviewed.**

Final written reports are due before noon on **Wednesday April 25, 2018**. An electronic (PDF) copy and one paper copy of the final report must be submitted. To facilitate electronic delivery of reports to external committee members via email, it may be necessary to save documents with numerous graphical images as “Reduced Size PDF” prior to submission. Late reports will not be accepted.

Students will present their research orally in an open public forum between **Monday April 16 – Friday April 27, 2018**. Presentations will be 30 minutes. Students should be prepared to defend their research findings and answer questions pertaining to their research topic. **Students must also submit an abstract no later than noon on Monday April 9, 2018**. Specific dates and times of the individual presentations depend on the availability and schedules of the Capstone Research Committee and are published at a later date.

Timeline

Tentative titles due by noon on **Friday September 15, 2017**.

Interim reports due **November 1, 2017 (#1), January 1, 2018 (#2), March 1, 2018 (#3)**.

Abstracts due by noon on **Monday April 9, 2018**
Oral defenses scheduled **April 16 – 27, 2018**
Final reports due by noon on **Wednesday April 25, 2018**

Performance Review

The *faculty advisor* formally evaluates student progress throughout the capstone research experience. The purpose of the review is to assist the student manage their performance and identify areas of improvement. **All students must demonstrate progress and improvement in order to receive a passing grade.** A minimum of three interim reviews are performed by the *faculty advisor*. Although performance reviews are typically completed after the student submits an interim report, the *faculty advisor* or *coordinator* may initiate a formal performance review at any time. The interim review includes an evaluation of lab performance, technical skill, problem-solving ability, knowledge, attitude/professionalism, effort, initiative, quality of work, organizational skills/note-taking, use of the scientific literature, communication and overall progress. A copy of the interim review is provided to the student and is discussed verbally with the student. Students are encouraged to provide *feedback to the faculty advisor* during this meeting. Constructive feedback on the part of the student and the *faculty advisor* is encouraged during this meeting and throughout the entire project.

Performance indicators are used to identify key areas of development during the capstone research experience. Students are not expected to have mastered all elements during the initial phase of research. A successful student demonstrates progress during the entire capstone research experience and at the conclusion, should have demonstrated competence in each area.

Performance indicators may include (where applicable) participation in regular meetings to seek input, feedback and direction; proactively engage in technical troubleshooting, routine maintenance; independently plan, organize and conduct experiments appropriately; analyze and present data clearly and concisely during regular reviews; critically evaluate data and results to determine next steps; proactively use the scientific literature and available resources to seek answers; demonstrates a comprehensive understanding of scientific/technical issues; well organized and prepared for meetings and laboratory work; performs work of a very high quality.

Grading Policy

The Capstone Research Committee assumes responsibility for student assessment, evaluation and grading.

Grading system:

- A - Academic Excellence - (90 and above)
- B - Acceptable Performance - (80 – 89)
- C - Passing, yet Insufficient Performance - (70-79)

The *faculty advisor or external advisor* evaluates the student's overall performance including lab performance, technical skill, problem-solving ability, knowledge, attitude/professionalism, effort, initiative, quality of work, organizational skills and written report. **This comprises 25% of the final grade.**

The *coordinator* evaluates the student's oral presentation including content, objectivity, grammar/nomenclature, organization, professionalism, demeanor, clarity, expression, pace/use of time and handling questions. **This comprises 25% of the final grade.**

The *Capstone Research Committee (coordinator, faculty advisor(s), external advisor(s))* assign the remaining portion of the grade (50%) equally as follows: Final report including content (introduction, experimental, results, discussion, references), scientific objectivity, clarity, scope, format (organization, tables/figures).

The *coordinator* reserves the right to make use of an internal or external subject matter expert for evaluation purposes and approves the composition of the Capstone Research Committee.

Make-up Exams

Not applicable.

Student Academic Policies

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>

Use of telephones and text messagers in academic classrooms and facilities

N/A

Annotated Outline of Topics

N/A.