

June 14, 2019

**KENT PINKERTON, CHAIR**  
Forensic Science

**RE: Forensic Science Degree Requirements**

Enclosed is a copy of the Forensic Science degree requirements as approved by Graduate Council on April 16, 2019. These degree requirements will become the official requirements for the Forensic Science Graduate Group **effective June 2020** and will be posted on the Office of Graduate Studies program webpage:

<https://grad.ucdavis.edu/programs/gfor>

Thank you for your efforts on behalf of graduate education.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Arnett". The signature is fluid and cursive, with a large initial "C" and a stylized "A".

Carlee Arnett, Chair  
Graduate Council

CC: Amanda Kimball, Graduate Studies Analyst  
Ruth Dickover, Graduate Group Coordinator  
Philip Meisch, Graduate Group Coordinator  
Felicia Murdoch, Educational Policy Committee Analyst

**FORENSIC SCIENCE GRADUATE GROUP  
MS DEGREE REQUIREMENTS**

Revised: previous, December 7, 2012 and current revision, October 1, 2018  
Graduate Council Approval: April 16, 2019 (Effective June 2020)

**Master's Degree Requirements**

**1) Admissions Requirements:**

Consideration for program admission requires a bachelor's degree in an appropriate scientific field. Additional requirements are three letters of recommendation, official transcripts, TOEFL or IELTS score (if applicable) and Office of Graduate Studies online application with fee by the stated admission deadline. A minimum overall GPA of 3.0 is required along with a minimum GPA of 3.0 in prerequisite courses (section 1.a below). Admissions decisions are made on a case-by-case basis. Meeting some or all of these criteria does not guarantee admission, but merely eligibility. The decision to recommend admission to the Dean of Graduate Studies will be made by the Program Admissions Committee on the basis of available space and the competitiveness of applicants compared to the eligible pool.

Applicants from countries whose official language is not English must provide TOEFL or IELTS scores to demonstrate English language proficiency. TOEFL scores must be 105 or above, with speaking and writing scores of 25 or above. IELTS scores must be 7.5 or above. Scores must be no more than 2 years old. Official scores must be sent from the electronic testing service to UC Davis. UC Davis will not accept unofficial score reports or score reports sent directly by the applicant. Applicants who have completed a degree at an approved English-medium institution are exempt from this requirement.

**a) Prerequisites:**

In addition to the admission requirements stated above, applicants are expected to have the minimum equivalent of the following UC Davis courses:

MAT16A/B/C	Calculus	9 quarter units
PHY7A/B/C	Physics	12 quarter units
CHEM 2A/B/C	General Chemistry	9 lecture units and 6 lab units
CHE 118A/B	Organic Chemistry	6 lecture units and 2 lab units
STA13	Statistics	4 quarter units

**b) Deficiencies:**

Deficiencies in some of the above undergraduate courses may be made up prior to or during the first year of graduate studies. These courses do not count toward the MS degree. A grade of B or better is required in these courses.

**2) M.S. Plan I and Plan II:**

**Plan I.** This thesis-based plan requires 54 units of graduate and upper division courses (the 100 and 200 series). No more than 12 units of 100 series courses in a relevant scientific field may be used for the degree. This plan requires 36 units of course work/seminars and 18 units of FOR299 research. At least 24 of the 36 units must be graduate work in the major field. In addition, a thesis is required. This Plan requires more units than the UC Davis minimum which are 30 units of graduate and upper division

courses (the 100 and 200 series only), at least 12 of which must be graduate work in the major field.

**Plan II.** This plan requires 54 units of graduate and upper division courses (100 and 200 series). No more than 12 units of 100 series courses in a relevant scientific field may be used for the degree. This plan requires 48 units of course work/seminars and 6 units of FOR299 research. At least 36 of the 48 units must be graduate work in the major field. A final committee examination in the major subject is required of each candidate, and the student is expected to complete an appropriate capstone project approved by the major professor and the capstone committee. No thesis is required. This Plan requires more units than the UC Davis minimum which are 36 units of graduate and upper division courses, at least 18 of which must be graduate courses in the major field. Not more than 9 units of research (299 or equivalent) may be used to satisfy the 18-unit requirement.

The Master's program for both Plan I and Plan II has two tracks. The DNA track focuses on biology and DNA courses. The Criminalistics track focuses on chemistry related courses. The student in one track is not precluded from taking elective courses in the other track.

**3) Course Requirements - Core and Electives (total 54 units):**

This program accepts both full time and part time students. Full-time status is defined by the MSFS Program as 9 or more units per quarter for domestic students. Full-time enrollment allows degree completion in under three years, and is compatible with the need of many students to balance academic, career, and other obligations. Registration for fewer than 12 units per quarter may be considered less than full-time enrollment by some administrative units on campus (e.g. Office of the University Registrar, Financial Aid and Scholarships, Graduate Studies). International students must maintain a minimum of 12 units per quarter.

Courses that fulfill any of the program course requirements may not be taken S/U unless the course is normally graded S/U. Per UC regulations, students cannot enroll in more than 12 units of graduate level courses (200) or more than 16 units of combined undergraduate and graduate level (100, 200) courses per quarter. Please note that electives are chosen with the approval of the graduate adviser and/or major professor.

**Revised Curriculum**

<b>Plan</b>	<b>Plan I</b>	<b>Plan II</b>
<b>Total Units</b>	54 units	54 units
<b>Thesis</b>	Required	No
<b>Capstone</b>	No	Yes
<b>Comprehensive Exam</b>	No	Yes - Oral Examination (by student's committee)
<b>Course Units</b>	33 units	45 units
<b>Seminar Units</b>	3 units	3 units
<b>Research Units</b>	18 units	6 units
	<b>Plan I Specifics</b>	<b>Plan II Specifics</b>

Core Required Courses all students	<p align="center"><b>15 Units</b></p> FOR201A, B, C Forensic Science Fundamentals (9) FOR218 Technical Writing in Forensic Science (3) FOR240 Homicide Crime Scene Investigation (3)	<p align="center"><b>15 Units</b></p> FOR201A, B, C Forensic Science Fundamentals (9) FOR218 Technical Writing in Forensic Science (3) FOR240 Homicide Crime Scene Investigation (3)
Core Track Required Courses	<p align="center"><b>9 Units</b></p> <p><b>DNA Track (9 units)</b>  FOR276 Population Genetics (3) or any 200 population genetics/bioinformatics course (3)  FOR278 Molecular Techniques (3) or any 200 molecular biology course (3)  FOR280 Forensic DNA Analysis (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track (9 units)</b>  FOR220 Analysis of Toxicants (3)  FOR207 Advanced Spectroscopy (3) or equivalent  FOR263 Forensic Statistics (3)</p>	<p align="center"><b>9 Units</b></p> <p><b>DNA Track (9 units)</b>  FOR276 Population Genetics (3) or any 200 population genetics/bioinformatics course (3)  FOR278 Molecular Techniques (3) or any 200 molecular biology course (3)  FOR280 Forensic DNA Analysis (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track (9 units)</b>  FOR220 Analysis of Toxicants (3)  FOR207 Advanced Spectroscopy (3) or equivalent  FOR263 Forensic Statistics (3)</p>
Required Laboratory Courses <sup>1</sup>	<p><b>DNA Track:</b> FOR281 Principles &amp; Practices of Forensic DNA Typing<sup>1</sup> (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track:</b> FOR221L Forensic Science Instrumental Lab<sup>1</sup> (2)</p>	<p><b>DNA Track:</b> FOR281 Principles &amp; Practices of Forensic DNA Typing<sup>1</sup> (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track:</b> FOR221L Forensic Science Instrumental Lab<sup>1</sup> (2)</p>
Elective Courses	<p><b>Electives Courses to fulfill 33 course units requirement (from any of the following)</b>  FOR205 Microscopy Microanalytical methods (3)  FOR207 Forensic Spectroscopy (3)  FOR208 Forensic Toxicology (3)  FOR209 Forensic Alcohol (3)  FOR210 Personal Identification (3)  FOR212 Scientific Evidence (3)  FOR215 Forensic Arson and Fire Investigation (3)  FOR220 Analysis of Toxicants (3)  FOR221L Instrumental Laboratory (2)  FOR263 Forensic Computer Investigation (3)  FOR268 Forensic Statistics (3)  FOR276 Population Genetics (3)  FOR281 Principles and Practices of Forensic DNA Typing (3)  FOR283 Forensic Biology (3)  FOR289 Survey of Forensic Sciences<sup>2</sup> (3)  FOR293 Research Methods in Forensic Science (2)  FOR298 Food Forensics (3)  <b>Other Campus Elective Options</b>  ANG111 Molecular Biology Laboratory Techniques (4)</p>	<p><b>Electives Courses to fulfill 45 course unit requirement (from any of the following):</b>  FOR205 Microscopy Microanalytical methods (3)  FOR207 Forensic Spectroscopy (3)  FOR208 Forensic Toxicology (3)  FOR209 Forensic Alcohol (3)  FOR210 Personal Identification (3)  FOR212 Scientific Evidence (3)  FOR215 Forensic Arson and Fire Investigation (3)  FOR220 Analysis of Toxicants (3)  FOR221L Instrumental Laboratory (2)  FOR263 Forensic Computer Investigation (3)  FOR268 Forensic Statistics (3)  FOR276 Population Genetics (3)  FOR281 Principles and Practices of Forensic DNA Typing (3)  FOR283 Forensic Biology (3)  FOR289 Survey of Forensic Sciences<sup>2</sup> (3)  FOR293 Research Methods in Forensic Science (2)  FOR298 Food Forensics (3)  <b>Other Campus Elective Options</b>  ANG111 Molecular Biology Laboratory Techniques (4)</p>

	ANG212. Sequence Analysis in Molecular Genetics (2) ANT156A Human Osteology (4) CHE115 Instrumental Analysis (4) CHE205 Symmetry, Spectroscopy, and Structure (3) CHEM217 X-Ray Structure Determination (3) CHE219 Organic Spectra (4) CHE240 Adv. Analytical Chemistry (3) CHE241C Mass Spectrometry (3) EME298 Impact Biomechanics and Design of Crash Protection Systems (4) EMS182 Failure Analysis (4) EMS230 Electron Microscopy ETX102B Quantitative Analysis of Environmental Toxicants (5) ENT158 Forensic Entomology (3) FPS161 Structure and Properties of Fibers (3) FPS161L Textile Chemical Analysis Lab (1) GGG201D Quantitative and Population Genetics (5) GGG211 Concepts in Human Genetics and Genomics (3) GGG250 Functional Genomics (3) MAE161 Combustion and the Environment (4) MAE217 Combustion (4) MCB120L Biochemistry Lab (6) MCB121Advanced Molecular Biology (3) MCB162 Human Genetics (3) MIC215 Recombinant DNA (3)  <b>Other courses as approved by the Graduate Advisor</b>	ANG212. Sequence Analysis in Molecular Genetics (2) ANT156A Human Osteology (4) CHE115 Instrumental Analysis (4) CHE205 Symmetry, Spectroscopy, and Structure (3) CHEM217 X-Ray Structure Determination (3) CHE219 Organic Spectra (4) CHE240 Adv. Analytical Chemistry (3) CHE241C Mass Spectrometry (3) EME298 Impact Biomechanics and Design of Crash Protection Systems (4) EMS182 Failure Analysis (4) EMS230 Electron Microscopy ETX102B Quantitative Analysis of Environmental Toxicants (5) ENT158 Forensic Entomology (3) FPS161 Structure and Properties of Fibers (3) FPS161L Textile Chemical Analysis Lab (1) GGG201D Quantitative and Population Genetics (5) GGG211 Concepts in Human Genetics and Genomics (3) GGG250 Functional Genomics (3) MAE161 Combustion and the Environment (4) MAE217 Combustion (4) MCB120L Biochemistry Lab (6) MCB121Advanced Molecular Biology (3) MCB162 Human Genetics (3) MIC215 Recombinant DNA (3)  <b>Other courses as approved by the Graduate Advisor</b>
Seminars Units	<b>3 Units</b> 2 - FOR290 Seminars 1 – FOR290C or XXX290 Seminar session (a seminar session in another group/department)	<b>3 Units</b> 2- FOR290 Seminars 1 – FOR290C or XXX290 Seminar session (a seminar session in another group/department)
Research Units	<b>18 Units</b> FOR299 Research in Forensic Science	<b>6 Units</b> FOR299 Research in Forensic Science

**Note 1:** If a student has prior equivalent laboratory experience in the area, the program may waive this requirement.

**Note 2:** FOR289 **should not** be taken by students in the Criminalistics track as it will result in some duplication of subject matter.

a) **DNA track additional courses:**

DNA track students must meet the FBI Quality Assurance Standards (QAS) DNA analyst minimum educational requirements including successful completion of 12 -18 units of biochemistry, genetics, statistics and/or population genetics and molecular biology during their undergraduate and/or graduate degree education. Additionally, the UC Davis DNA track requirements are designed so that graduates will meet the FBI QAS standards for crime lab DNA Technical Lead.

**Summary:** Twenty-four units (15 core general and 9 core track) of required lecture courses along with the appropriate lab, seminar and research units are required of all students. DNA and Criminalistics track students are also required to take 6 or 7 units of electives, respectively. A total of 54 course and research units are required for degree completion. The minimum course load is 4 units each academic quarter unless the student is on Filing Fee or PELP.

**4) Special Requirements:**

All candidates are expected to present their theses or capstone results to faculty and students during a thesis presentation event.

**5) Forensic Science Graduate Group Committees:**

- a) **Admissions Committee Recruitment and Fellowships:** The Admissions Committee consists of the chair, six members from the graduate group faculty and at least one student. The student member(s) must be in good academic standing. The Committee shall process all applications for admission to graduate study in Forensic Science, inviting review of applications by members of the Group usually from those persons designated as graduate advisers. Once the completed application, all supporting material, and the application fee have been received, the application will be submitted to the Admissions Committee. Based on a review of the entire application, a recommendation is made to accept or decline an applicant's request for admission. That recommendation is forwarded to the Dean of the Office of Graduate Studies for final approval of admission. Notification of admissions decisions will be sent by Graduate Studies. Applications are accepted using the Office of Graduate Studies online application with fee paid in full by the stated admission deadline of February 1 for priority enrollment with a maximum wait-list deadline of June 1 for the new cohort entering the fall of that year.
- b) **Committee on Education Policy:** The Committee on Education Policy consists of the chairperson and at least two (2) more voting members appointed by the chairperson of the committee. In addition, one representative of the graduate students in Forensic Science serves on the Committee. The student committee member must be in good academic standing. The functions of the Committee shall include consideration of graduate course offerings in Forensic Science and recommendations regarding academic quality of the graduate program in Forensic Science.
- c) **Thesis Committee or Comprehensive Examination Committee:**  
Thesis Committee: The thesis committee is comprised of a student's major professor and two additional committee members. The student, in consultation with his/her major professor and graduate advisor, nominates the two additional faculty to serve on the thesis committee. These nominations are submitted to the Office of Graduate Studies for formal appointment in accordance with Graduate Council policy.

Comprehensive Examination Committee: The Comprehensive Examination Committee will be structured the same as a thesis committee and will follow the same qualification rules as established by the Office of Graduate Studies for thesis committees.

## 6) Advising Structure and Mentoring:

- a) **Graduate Group Advisers:** Each graduate advisor shall evaluate the transcripts of incoming students, establish a program of study which satisfies the requirements of the Group, and advise graduate students within his/her jurisdiction in accordance with the regulations of the Office of Graduate Studies and the Group. Graduate advisors, are appointed by Graduate Studies, and have signature authority from Graduate Studies, are a resource for information on academic requirements, policies and procedures, and registration information. Only the graduate advisors who hold appropriate University titles and the graduate group chair will make decisions on courses, curriculum, and individual students' programs relative to core courses, background courses, and remedial courses. Students are required to meet with their advisor at a minimum of once per annum to ensure that adequate progress is made towards completion of degree requirements.
- b) **Major Professor:** The major professor is the faculty member who provides guidance in selecting and developing thesis or capstone research projects and supervises the student's research progress. The major professor may serve as the chair of the thesis Committee.
- c) **Major Professor Assignments:**
  - i. **Each full-time student** will select a major professor by the end of the third quarter. A student who does not have a major professor by that time will be required to meet with their graduate advisor and/or program staff to help identify a major professor.
  - ii. **Each part-time student** will have selected a major professor before completing **85%** of their course work. A student who does not have a major professor by that time will be required to meet with their graduate advisor and/or program staff to help identify a major professor.
  - iii. **Graduate Program Staff:** The forensic science program staff assists students with identifying a major professor, identifying appointments, fiscal issues, Graduate Studies policies and deadlines and general university policies. The Mentoring Guidelines can be obtained from the program's web site at <https://grad.ucdavis.edu/sites/default/files/upload/files/grad-council/mentoring.pdf>

## 7) Advancement to Candidacy:

Every student must file an official application for Candidacy for the Degree of Master of Forensic Science after completing one-half of the course requirements and at least one quarter before completing all degree requirements; this is typically the 4<sup>th</sup> quarter. The Candidacy for the Degree of Master form can be found online at: <http://www.gradstudies.ucdavis.edu/forms/>. A completed form includes a list of courses the student will take to complete degree requirements. If changes must be made to the student's course plan after s/he has advanced to candidacy, the graduate adviser must recommend these changes to Graduate Studies. Students must have their graduate adviser and thesis committee chair sign the candidacy form before it can be submitted to Graduate Studies. If the candidacy is approved, the Office of Graduate Studies will send a

copy to the appropriate graduate staff person and the student; the thesis committee chair will also receive a copy, if applicable. If the Office of Graduate Studies determines that a student is not eligible for advancement, the department and the student will be told the reasons for the application's deferral. Some reasons for deferring an application include: grade point average below 3.0, outstanding "I" grades in required courses, or insufficient units.

## **8) Comprehensive Examination and/or Thesis Requirements:**

### **a) Thesis Requirements (Plan I):**

Thesis committee meetings: The candidate and major professor should meet at least once a year with the other members of the thesis committee to discuss progress and any changes in research objectives.

Thesis: Research for the Master's thesis is to be carried out under the supervision of a faculty member of the program and must represent an original contribution to knowledge in the field. The thesis research must be conducted while the student is enrolled in the program. The thesis is submitted to the thesis committee at least one month before the student plans to make requested revisions. All committee members must approve the thesis and sign the title page before the thesis is submitted to Graduate Studies for final approval. Should the committee determine that the thesis is unacceptable, even with substantial revisions; the program may recommend the student for disqualification from the program to the Dean of Graduate Studies.

The thesis must be filed in a quarter in which the student is registered or on filing fee. Instructions on preparation of the thesis and a schedule of dates for filing the thesis in final form are available from Graduate Studies; the dates are also printed in the UC Davis General Catalog and in the Class Schedule and Registration Guide issued each quarter. A student must have a GPA of at least 3.0 for the M.S. degree to be awarded.

Thesis Format: It is highly recommended that the thesis be completed in the format suitable for submission to the journal recommended by the chair of the thesis committee.

### **b) Comprehensive Examination (Plan II):**

Fulfillment of the Comprehensive Examination is the last requirement of the M.S. Plan II. Students may take the comprehensive oral examination once they have advanced to candidacy. However, it is important that the capstone requirement be completed at or near the end of the coursework for the Master's degree; for most students, the exam is taken at the end of the 6<sup>th</sup> quarter.

The comprehensive examination requirement includes both the submission of a technical report to the Comprehensive Examination committee (see section 5) and passing a one-hour oral exam administered by that same committee. The technical report is to be written under the direction of a faculty mentor, who must be a member of the Comprehensive Examination committee. The technical report can be an extensive review of the literature in a focused subject area, a report on a validation of new instrumentation, research performed as part of the program or any other technical report deemed suitable by the committee.



The scope of the oral exam is the candidate's coursework as well as the technical report.

The Exam Committee's unanimous vote is required to pass a student on the exam. If a student does not pass the exam, the committee may recommend that the student be reexamined one more time, but only if the graduate adviser concurs with the committee. The second exam must take place within one quarter of the first exam. The format of the second exam is the same as that of the first exam and may include the submission of an amended version of the technical report. The examination may not be repeated more than once. A student who does not pass on the second attempt is subject to disqualification from the program.

Once passed, the Master's Report Form is signed by the group's graduate adviser and then forwarded to the Office of Graduate Studies. The deadlines for completing this requirement are listed each quarter in the campus General Catalog (available online at the website of the Office of the Registrar or from the Bookstore). A candidate must be a registered student or in Filing Fee status at the time the program submits the form, with the exception of the summer period between the end of the Spring Quarter and the beginning of Fall Quarter. The program must file the report with Graduate Studies within one week of the end of the quarter in which the student's degree will be conferred.

**9) Normative Time to Degree:**

Normative time for a full-time student to complete all M.S.F.S. degree requirements, assuming they are making adequate progress, is 2 years. Students who complete an average of 9 units per quarter over the academic year while meeting career and other responsibilities can complete their degree in under 3 years. For part-time students the normative time to a degree is 5 years. After this deadline has passed, the student must obtain the recommendations of the major professor and the graduate advisor to continue in the program.

**10) Typical Time Line and Sequence of Events:**

The following are sample course plans and degree progress for both tracks. Actual plans will vary by student, year, and course offerings.

Year One	Fall	Winter	Spring	Units
Common Courses	FOR201A-F.S. Fundamentals (3) FOR290-Seminar (1)	FOR201B F.S. Fundamentals (3) FOR218 Technical Writing F.S. (3) FOR290 Seminar (1)	FOR201C F.S. Fundamentals (3) FOR290C or XXX290 Seminar (1)	15
DNA Track courses	FOR240-Crime Scene (3) FOR280 Forensic DNA Analysis (3)	FOR276 Population Genetics (3)	FOR281 DNA Typing Lab (3)	12  Total: 27
Criminalist Track Courses	FOR220- Analysis of Toxicants (3) FOR207 Forensic Spectroscopy (3)	FOR268 Forensic Statistics (3)	FOR221L Instrumental Analysis (2) FOR240 Crime Scene (3)	14  Total: 29
<b>Year Two</b>	<b>Fall</b>	<b>Winter</b> (advancement to MS candidacy)	<b>Spring</b>	

DNA Track Courses	FOR200 series Elective (3) FOR299 Research (6)	FOR278 Molecular Techniques (3) FOR299 Research (6)	FOR200 series or XXX100/200 series elective (3) FOR299 Research (6)	27  Total: 54
Criminalistics Track Courses	FOR200 series Elective (3) FOR299 Research (6)	FOR200 series Elective (2) FOR299 Research (6)	FOR200 series or XXX100/200 series elective (2) FOR299 Research (6)	25  Total: 54

**11) Sources of Funding:**

The Forensic Science program is self-supporting and receives no fiscal support from UC Davis or from the State of California. All students are expected to pay the prescribed self-supporting unit-based tuition. Financial aid (in the form of loans) is available at the UC Davis Financial Aid office. Successful completion at a pace of at least 6 units per quarter may be required for federal financial aid and/or educational loans (see the campus Financial Aid and Scholarships link on [Satisfactory Academic Progress](#)).

Forensic Science's status as a self-supporting degree program, can also affect student eligibility for employment in certain graduate research and teaching appointments (see [Academic Personnel Manual Appendix II.B](#)). Depending on available grants, some students may be selected to work on funded research projects where they will receive fee remission and a stipend as a Graduate Student Researcher (GSR).

**12) PELP, In Absentia and Filing Fee Status:**

Information about PELP (Planned Educational Leave), In Absentia (reduced fees when researching out of state), and Filing Fee status can be found in the Graduate Student Guide: <http://www.gradstudies.ucdavis.edu/publications/>. Be aware that the filing fee status is currently limited to one quarter and is used for students to complete their thesis draft. Failure to submit the thesis in time will require the student to seek re-enrollment in the program.

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MS DEGREE REQUIREMENTS**

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Graduate Council Approval: April 16, 2019 (Effective June 2020)

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Core Required Courses all students	<p align="center"><b>15 Units</b></p> FOR201A, B, C Forensic Science Fundamentals (9) FOR218 Technical Writing in Forensic Science (3) FOR240 Homicide Crime Scene Investigation (3)	<p align="center"><b>15 Units</b></p> FOR201A, B, C Forensic Science Fundamentals (9) FOR218 Technical Writing in Forensic Science (3) FOR240 Homicide Crime Scene Investigation (3)
Core Track Required Courses	<p align="center"><b>9 Units</b></p> <p><b>DNA Track (9 units)</b>  FOR276 Population Genetics (3) or any 200 population genetics/bioinformatics course (3)  FOR278 Molecular Techniques (3) or any 200 molecular biology course (3)  FOR280 Forensic DNA Analysis (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track (9 units)</b>  FOR220 Analysis of Toxicants (3)  FOR207 Advanced Spectroscopy (3) or equivalent  FOR263 Forensic Statistics (3)</p>	<p align="center"><b>9 Units</b></p> <p><b>DNA Track (9 units)</b>  FOR276 Population Genetics (3) or any 200 population genetics/bioinformatics course (3)  FOR278 Molecular Techniques (3) or any 200 molecular biology course (3)  FOR280 Forensic DNA Analysis (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track (9 units)</b>  FOR220 Analysis of Toxicants (3)  FOR207 Advanced Spectroscopy (3) or equivalent  FOR263 Forensic Statistics (3)</p>
Required Laboratory Courses <sup>1</sup>	<p><b>DNA Track:</b> FOR281 Principles &amp; Practices of Forensic DNA Typing<sup>1</sup> (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track:</b> FOR221L Forensic Science Instrumental Lab<sup>1</sup> (2)</p>	<p><b>DNA Track:</b> FOR281 Principles &amp; Practices of Forensic DNA Typing<sup>1</sup> (3)</p> <p align="center"><b>OR</b></p> <p><b>Criminalistics Track:</b> FOR221L Forensic Science Instrumental Lab<sup>1</sup> (2)</p>
Elective Courses	<p><b>Electives Courses to fulfill 33 course units requirement (from any of the following)</b>  FOR205 Microscopy Microanalytical methods (3)  FOR207 Forensic Spectroscopy (3)  FOR208 Forensic Toxicology (3)  FOR209 Forensic Alcohol (3)  FOR210 Personal Identification (3)  FOR212 Scientific Evidence (3)  FOR215 Forensic Arson and Fire Investigation (3)  FOR220 Analysis of Toxicants (3)  FOR221L Instrumental Laboratory (2)  FOR263 Forensic Computer Investigation (3)  FOR268 Forensic Statistics (3)  FOR276 Population Genetics (3)  FOR281 Principles and Practices of Forensic DNA Typing (3)  FOR283 Forensic Biology (3)  FOR289 Survey of Forensic Sciences<sup>2</sup> (3)  FOR293 Research Methods in Forensic Science (2)  FOR298 Food Forensics (3)  <b>Other Campus Elective Options</b>  ANG111 Molecular Biology Laboratory Techniques (4)</p>	<p><b>Electives Courses to fulfill 45 course unit requirement (from any of the following):</b>  FOR205 Microscopy Microanalytical methods (3)  FOR207 Forensic Spectroscopy (3)  FOR208 Forensic Toxicology (3)  FOR209 Forensic Alcohol (3)  FOR210 Personal Identification (3)  FOR212 Scientific Evidence (3)  FOR215 Forensic Arson and Fire Investigation (3)  FOR220 Analysis of Toxicants (3)  FOR221L Instrumental Laboratory (2)  FOR263 Forensic Computer Investigation (3)  FOR268 Forensic Statistics (3)  FOR276 Population Genetics (3)  FOR281 Principles and Practices of Forensic DNA Typing (3)  FOR283 Forensic Biology (3)  FOR289 Survey of Forensic Sciences<sup>2</sup> (3)  FOR293 Research Methods in Forensic Science (2)  FOR298 Food Forensics (3)  <b>Other Campus Elective Options</b>  ANG111 Molecular Biology Laboratory Techniques (4)</p>

	ANG212. Sequence Analysis in Molecular Genetics (2) ANT156A Human Osteology (4) CHE115 Instrumental Analysis (4) CHE205 Symmetry, Spectroscopy, and Structure (3) CHEM217 X-Ray Structure Determination (3) CHE219 Organic Spectra (4) CHE240 Adv. Analytical Chemistry (3) CHE241C Mass Spectrometry (3) EME298 Impact Biomechanics and Design of Crash Protection Systems (4) EMS182 Failure Analysis (4) EMS230 Electron Microscopy ETX102B Quantitative Analysis of Environmental Toxicants (5) ENT158 Forensic Entomology (3) FPS161 Structure and Properties of Fibers (3) FPS161L Textile Chemical Analysis Lab (1) GGG201D Quantitative and Population Genetics (5) GGG211 Concepts in Human Genetics and Genomics (3) GGG250 Functional Genomics (3) MAE161 Combustion and the Environment (4) MAE217 Combustion (4) MCB120L Biochemistry Lab (6) MCB121Advanced Molecular Biology (3) MCB162 Human Genetics (3) MIC215 Recombinant DNA (3)  <b>Other courses as approved by the Graduate Advisor</b>	ANG212. Sequence Analysis in Molecular Genetics (2) ANT156A Human Osteology (4) CHE115 Instrumental Analysis (4) CHE205 Symmetry, Spectroscopy, and Structure (3) CHEM217 X-Ray Structure Determination (3) CHE219 Organic Spectra (4) CHE240 Adv. Analytical Chemistry (3) CHE241C Mass Spectrometry (3) EME298 Impact Biomechanics and Design of Crash Protection Systems (4) EMS182 Failure Analysis (4) EMS230 Electron Microscopy ETX102B Quantitative Analysis of Environmental Toxicants (5) ENT158 Forensic Entomology (3) FPS161 Structure and Properties of Fibers (3) FPS161L Textile Chemical Analysis Lab (1) GGG201D Quantitative and Population Genetics (5) GGG211 Concepts in Human Genetics and Genomics (3) GGG250 Functional Genomics (3) MAE161 Combustion and the Environment (4) MAE217 Combustion (4) MCB120L Biochemistry Lab (6) MCB121Advanced Molecular Biology (3) MCB162 Human Genetics (3) MIC215 Recombinant DNA (3)  <b>Other courses as approved by the Graduate Advisor</b>
Seminars Units	<b>3 Units</b> 2 - FOR290 Seminars 1 – FOR290C or XXX290 Seminar session (a seminar session in another group/department)	<b>3 Units</b> 2- FOR290 Seminars 1 – FOR290C or XXX290 Seminar session (a seminar session in another group/department)
Research Units	<b>18 Units</b> FOR299 Research in Forensic Science	<b>6 Units</b> FOR299 Research in Forensic Science

**Note 1:** If a student has prior equivalent laboratory experience in the area, the program may waive this requirement.

**Note 2:** FOR289 **should not** be taken by students in the Criminalistics track as it will result in some duplication of subject matter.

a) **DNA track additional courses:**

DNA track students must meet the FBI Quality Assurance Standards (QAS) DNA analyst minimum educational requirements including successful completion of 12 -18 units of biochemistry, genetics, statistics and/or population genetics and molecular biology during their undergraduate and/or graduate degree education. Additionally, the UC Davis DNA track requirements are designed so that graduates will meet the FBI QAS standards for crime lab DNA Technical Lead.

**Summary:** Twenty-four units (15 core general and 9 core track) of required lecture courses along with the appropriate lab, seminar and research units are required of all students. DNA and Criminalistics track students are also required to take 6 or 7 units of electives, respectively. A total of 54 course and research units are required for degree completion. The minimum course load is 4 units each academic quarter unless the student is on Filing Fee or PELP.

**4) Special Requirements:**

All candidates are expected to present their theses or capstone results to faculty and students during a thesis presentation event.

**5) Forensic Science Graduate Group Committees:**

- a) **Admissions Committee Recruitment and Fellowships:** The Admissions Committee consists of the chair, six members from the graduate group faculty and at least one student. The student member(s) must be in good academic standing. The Committee shall process all applications for admission to graduate study in Forensic Science, inviting review of applications by members of the Group usually from those persons designated as graduate advisers. Once the completed application, all supporting material, and the application fee have been received, the application will be submitted to the Admissions Committee. Based on a review of the entire application, a recommendation is made to accept or decline an applicant's request for admission. That recommendation is forwarded to the Dean of the Office of Graduate Studies for final approval of admission. Notification of admissions decisions will be sent by Graduate Studies. Applications are accepted using the Office of Graduate Studies online application with fee paid in full by the stated admission deadline of February 1 for priority enrollment with a maximum wait-list deadline of June 1 for the new cohort entering the fall of that year.
- b) **Committee on Education Policy:** The Committee on Education Policy consists of the chairperson and at least two (2) more voting members appointed by the chairperson of the committee. In addition, one representative of the graduate students in Forensic Science serves on the Committee. The student committee member must be in good academic standing. The functions of the Committee shall include consideration of graduate course offerings in Forensic Science and recommendations regarding academic quality of the graduate program in Forensic Science.
- c) **Thesis Committee or Comprehensive Examination Committee:**  
Thesis Committee: The thesis committee is comprised of a student's major professor and two additional committee members. The student, in consultation with his/her major professor and graduate advisor, nominates the two additional faculty to serve on the thesis committee. These nominations are submitted to the Office of Graduate Studies for formal appointment in accordance with Graduate Council policy.

Comprehensive Examination Committee: The Comprehensive Examination Committee will be structured the same as a thesis committee and will follow the same qualification rules as established by the Office of Graduate Studies for thesis committees.

## 6) Advising Structure and Mentoring:

- a) **Graduate Group Advisers:** Each graduate advisor shall evaluate the transcripts of incoming students, establish a program of study which satisfies the requirements of the Group, and advise graduate students within his/her jurisdiction in accordance with the regulations of the Office of Graduate Studies and the Group. Graduate advisors, are appointed by Graduate Studies, and have signature authority from Graduate Studies, are a resource for information on academic requirements, policies and procedures, and registration information. Only the graduate advisors who hold appropriate University titles and the graduate group chair will make decisions on courses, curriculum, and individual students' programs relative to core courses, background courses, and remedial courses. Students are required to meet with their advisor at a minimum of once per annum to ensure that adequate progress is made towards completion of degree requirements.
- b) **Major Professor:** The major professor is the faculty member who provides guidance in selecting and developing thesis or capstone research projects and supervises the student's research progress. The major professor may serve as the chair of the thesis Committee.
- c) **Major Professor Assignments:**
  - i. **Each full-time student** will select a major professor by the end of the third quarter. A student who does not have a major professor by that time will be required to meet with their graduate advisor and/or program staff to help identify a major professor.
  - ii. **Each part-time student** will have selected a major professor before completing **85%** of their course work. A student who does not have a major professor by that time will be required to meet with their graduate advisor and/or program staff to help identify a major professor.
  - iii. **Graduate Program Staff:** The forensic science program staff assists students with identifying a major professor, identifying appointments, fiscal issues, Graduate Studies policies and deadlines and general university policies. The Mentoring Guidelines can be obtained from the program's web site at <https://grad.ucdavis.edu/sites/default/files/upload/files/grad-council/mentoring.pdf>

## 7) Advancement to Candidacy:

Every student must file an official application for Candidacy for the Degree of Master of Forensic Science after completing one-half of the course requirements and at least one quarter before completing all degree requirements; this is typically the 4<sup>th</sup> quarter. The Candidacy for the Degree of Master form can be found online at: <http://www.gradstudies.ucdavis.edu/forms/>. A completed form includes a list of courses the student will take to complete degree requirements. If changes must be made to the student's course plan after s/he has advanced to candidacy, the graduate adviser must recommend these changes to Graduate Studies. Students must have their graduate adviser and thesis committee chair sign the candidacy form before it can be submitted to Graduate Studies. If the candidacy is approved, the Office of Graduate Studies will send a



copy to the appropriate graduate staff person and the student; the thesis committee chair will also receive a copy, if applicable. If the Office of Graduate Studies determines that a student is not eligible for advancement, the department and the student will be told the reasons for the application's deferral. Some reasons for deferring an application include: grade point average below 3.0, outstanding "I" grades in required courses, or insufficient units.

## **8) Comprehensive Examination and/or Thesis Requirements:**

### **a) Thesis Requirements (Plan I):**

Thesis committee meetings: The candidate and major professor should meet at least once a year with the other members of the thesis committee to discuss progress and any changes in research objectives.

Thesis: Research for the Master's thesis is to be carried out under the supervision of a faculty member of the program and must represent an original contribution to knowledge in the field. The thesis research must be conducted while the student is enrolled in the program. The thesis is submitted to the thesis committee at least one month before the student plans to make requested revisions. All committee members must approve the thesis and sign the title page before the thesis is submitted to Graduate Studies for final approval. Should the committee determine that the thesis is unacceptable, even with substantial revisions; the program may recommend the student for disqualification from the program to the Dean of Graduate Studies.

The thesis must be filed in a quarter in which the student is registered or on filing fee. Instructions on preparation of the thesis and a schedule of dates for filing the thesis in final form are available from Graduate Studies; the dates are also printed in the UC Davis General Catalog and in the Class Schedule and Registration Guide issued each quarter. A student must have a GPA of at least 3.0 for the M.S. degree to be awarded.

Thesis Format: It is highly recommended that the thesis be completed in the format suitable for submission to the journal recommended by the chair of the thesis committee.

### **b) Comprehensive Examination (Plan II):**

Fulfillment of the Comprehensive Examination is the last requirement of the M.S. Plan II. Students may take the comprehensive oral examination once they have advanced to candidacy. However, it is important that the capstone requirement be completed at or near the end of the coursework for the Master's degree; for most students, the exam is taken at the end of the 6<sup>th</sup> quarter.

The comprehensive examination requirement includes both the submission of a technical report to the Comprehensive Examination committee (see section 5) and passing a one-hour oral exam administered by that same committee. The technical report is to be written under the direction of a faculty mentor, who must be a member of the Comprehensive Examination committee. The technical report can be an extensive review of the literature in a focused subject area, a report on a validation of new instrumentation, research performed as part of the program or any other technical report deemed suitable by the committee.

The scope of the oral exam is the candidate's coursework as well as the technical report.

The Exam Committee's unanimous vote is required to pass a student on the exam. If a student does not pass the exam, the committee may recommend that the student be reexamined one more time, but only if the graduate adviser concurs with the committee. The second exam must take place within one quarter of the first exam. The format of the second exam is the same as that of the first exam and may include the submission of an amended version of the technical report. The examination may not be repeated more than once. A student who does not pass on the second attempt is subject to disqualification from the program.

Once passed, the Master's Report Form is signed by the group's graduate adviser and then forwarded to the Office of Graduate Studies. The deadlines for completing this requirement are listed each quarter in the campus General Catalog (available online at the website of the Office of the Registrar or from the Bookstore). A candidate must be a registered student or in Filing Fee status at the time the program submits the form, with the exception of the summer period between the end of the Spring Quarter and the beginning of Fall Quarter. The program must file the report with Graduate Studies within one week of the end of the quarter in which the student's degree will be conferred.

**9) Normative Time to Degree:**

Normative time for a full-time student to complete all M.S.F.S. degree requirements, assuming they are making adequate progress, is 2 years. Students who complete an average of 9 units per quarter over the academic year while meeting career and other responsibilities can complete their degree in under 3 years. For part-time students the normative time to a degree is 5 years. After this deadline has passed, the student must obtain the recommendations of the major professor and the graduate advisor to continue in the program.

**10) Typical Time Line and Sequence of Events:**

The following are sample course plans and degree progress for both tracks. Actual plans will vary by student, year, and course offerings.

Year One	Fall	Winter	Spring	Units
Common Courses	FOR201A-F.S. Fundamentals (3) FOR290-Seminar (1)	FOR201B F.S. Fundamentals (3) FOR218 Technical Writing F.S. (3) FOR290 Seminar (1)	FOR201C F.S. Fundamentals (3) FOR290C or XXX290 Seminar (1)	15
DNA Track courses	FOR240-Crime Scene (3) FOR280 Forensic DNA Analysis (3)	FOR276 Population Genetics (3)	FOR281 DNA Typing Lab (3)	12  Total: 27
Criminalist Track Courses	FOR220- Analysis of Toxicants (3) FOR207 Forensic Spectroscopy (3)	FOR268 Forensic Statistics (3)	FOR221L Instrumental Analysis (2) FOR240 Crime Scene (3)	14  Total: 29
<b>Year Two</b>	<b>Fall</b>	<b>Winter</b> (advancement to MS candidacy)	<b>Spring</b>	

DNA Track Courses	FOR200 series Elective (3) FOR299 Research (6)	FOR278 Molecular Techniques (3) FOR299 Research (6)	FOR200 series or XXX100/200 series elective (3) FOR299 Research (6)	27  Total: 54
Criminalistics Track Courses	FOR200 series Elective (3) FOR299 Research (6)	FOR200 series Elective (2) FOR299 Research (6)	FOR200 series or XXX100/200 series elective (2) FOR299 Research (6)	25  Total: 54

**11) Sources of Funding:**

The Forensic Science program is self-supporting and receives no fiscal support from UC Davis or from the State of California. All students are expected to pay the prescribed self-supporting unit-based tuition. Financial aid (in the form of loans) is available at the UC Davis Financial Aid office. Successful completion at a pace of at least 6 units per quarter may be required for federal financial aid and/or educational loans (see the campus Financial Aid and Scholarships link on [Satisfactory Academic Progress](#)).

Forensic Science's status as a self-supporting degree program, can also affect student eligibility for employment in certain graduate research and teaching appointments (see [Academic Personnel Manual Appendix II.B](#)). Depending on available grants, some students may be selected to work on funded research projects where they will receive fee remission and a stipend as a Graduate Student Researcher (GSR).

**12) PELP, In Absentia and Filing Fee Status:**

Information about PELP (Planned Educational Leave), In Absentia (reduced fees when researching out of state), and Filing Fee status can be found in the Graduate Student Guide: <http://www.gradstudies.ucdavis.edu/publications/>. Be aware that the filing fee status is currently limited to one quarter and is used for students to complete their thesis draft. Failure to submit the thesis in time will require the student to seek re-enrollment in the program.