Program Change Request

Date Submitted: 11/03/21 1:26 pm

Viewing: SC-MS-FRSC : Forensic Science, MS

Last approved: 02/23/21 4:53 pm

Last edit: 11/12/21 2:05 pm

Changes proposed by: jbazaz

Catalog Pages Using this Program

Forensic Science, MS

2022-2023

Rationale for

Are you completing this form on someone else's behalf?

Yes

Requestor:

In Workflow

1. **FRSC Chair**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. SC CAT Editor
5. Assoc Provost-Graduate
6. Registrar-Programs

Approval Path

1. 11/12/21 12:41 pm Mary O'Toole (motoole2): Approved for FRSC Chair

History

1. Nov 8, 2017 by clmig-jwehrheim
2. Jan 29, 2018 by rzachari
3. Jan 30, 2018 by rzachari
4. Mar 6, 2018 by rzachari
5. Mar 7, 2018 by pchampan
6. Dec 7, 2018 by Jennifer Bazaz Gettys (jbazaz)
7. Dec 5, 2019 by Jennifer Bazaz Gettys (jbazaz)

8. Feb 23, 2021 by Johanna Riemen (jriemen)

Name	Extension	Email
Emily Rancourt	5234	erancour@gmu.edu

Effective Catalog: 2022-2023

Program Level: Graduate

Program Type: Master's

Degree Type: Master of Science

Title: Forensic Science, MS

Banner Title: Forensic Science, MS

Is this a retitling of an existing program? Existing Program

Registrar/OAPI Use Only – SCHEV Status Approved

Registrar's Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV Letter

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
1	Crime Scene Investigation	CSIN
2	Forensic Biology Analysis	FRSB
3	Forensic Chemistry Analysis	FRCA
4	Forensic/Biometric Identity Analysis	FRBI

INTO Major(s):

Registrar/IRR Use Only – Concentration CIP Code	
College/School:	College of Science
Department / Academic Unit:	Forensic Science Program
Jointly Owned Program?	No

Participating

Participating

Justification

What: The Master of Science in Forensic Science degree needed to make the following modifications: added a new research project option core course (FRSC 601) to all four concentrations; FRSC 601 was approved in Spring 2021. The following courses will also be added to our program as an elective course to all four of our concentrations: FRSC 670 Forensic Genomics Credits: 4, FRSC 525 Molecular Biology Credits: 3, FRSC 526 Molecular Biology Lab Credits: 1. AIT 678 was removed as a core course and added as an elective course for the Biometrics Concentration.

Why: Our goal with these changes is to increase the number of common Core Courses across our four concentrations, in order to be in accordance with accreditation requirements. The decision to create FRSC 601 Quantitative Methods for Forensic Science was due to the Forensic Science faculty seeing a need for our students to have a greater understanding of how to properly analyze the data they gather for their research projects. AIT 678 was removed as a core course and added as an elective course for the Biometrics Concentration due to inconsistent offerings of this course by an outside program.

Additionally, employment within Forensic Biology positions require specific coursework. Several current job positions listed on the American Academy of Forensic Science (AAFS) and the International Association of Identification (IAI) websites outline these particular coursework eligibility requirements. 1

Forensic DNA Analyst positions within the United States must meet the following minimum education requirements as outlined by the Federal Bureau of Investigations (FBI) Quality Assurance Standards (QAS) Standard 5.4.1 which indicates that “employees shall have successfully completed coursework covering the following subject areas: biochemistry, genetics, and molecular biology, statistics and/or population genetics”2. Therefore, we created a Molecular Biology lecture and Lab in order to be in line with these requirements since this type of course is not

1 American Academy of Forensic Science Job Postings:
https://webdata.aafs.org/public/jobs/postings.aspx
International Association of Identification Job Postings: https://www.theiai.org/job_listings.php
2 “Quality Assurance Standards for Forensic DNA Testing Laboratories” Approved by the
Director of the Federal Bureau of Investigation to take effect July 1 2020

Catalog Published Information

Total Credits Required: Total credits: 36

Registrar's Office Use Only - Program Code:
SC-MS-FRSC

Registrar/IRR Use Only – Program CIP Code

Admission Requirements:

Admissions

Application Requirements

University-wide admissions policies can be found in Graduate Admissions Policies.
To apply for this program, please complete the George Mason University Admissions Application.
In addition to fulfilling Mason's admission requirements for graduate study, applicants must provide:

- Three letters of recommendation from academic references or references in the industry or government who are familiar with the applicant's academic and/or professional accomplishments.
- Resume
- Detailed goal statement to include why you are interested in coming into Mason's Forensic Science Master's program, career goals, and professional aspirations, and proposed area of interest for your final research project.
- Two copies of official transcripts from each institution of higher education attended.
- A Virginia Domicile Classification Form.

TOEFL scores are required of all international applicants who do not hold at least a bachelor's degree from an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent. The TOEFL score has to at least be a total of 88, with a minimum of 20 in each section. The GRE is not required for admission into this program. Additional requirements for each specific concentration are listed below.

Concentration-Specific Requirements

Forensic Biology Analysis and Forensic Chemistry Analysis Concentrations

A bachelor's degree in a forensic or natural science.

Forensic/Biometric Identity Analysis Concentration

A bachelor of science or bachelor of arts degree in a forensic or natural science, computer science, computer electronic or electrical engineering, information systems or information technology (or its equivalent coursework in a relevant field).

Crime Scene Investigation Concentration

A bachelor of science or bachelor of arts degree in a related field.

Program-Specific Policies:

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies.

Premium Tuition

Students enrolled in this professional MS program are charged at a differential (premium) tuition rate. Therefore, any courses or secondary programs that they may enroll in are subject to the differential tuition rate. The Forensics Graduate Certificate has the same premium tuition rate, making it the ideal program for concurrent enrollment (if desired).

Concentration Declaration

Students must declare their intended concentration upon application. In the event that a student wishes to change their concentration, students may request to change their concentration by submitting a letter to the Forensic Science Program Director detailing the request and providing justification. These requests and possible substitutions/waivers will be considered on a case-by-case basis and only when the appropriate admissions requirements are met.

Criminal Background Check

The successful passing of a Virginia Department of Forensic Sciences background check is required prior to gaining access to FRSC 540 Advanced Forensic Chemistry, FRSC 541 Forensic Chemistry Laboratory, FRSC 560 Advanced Forensic DNA Sciences, and FRSC 561 Forensic DNA Laboratory.

Course Notes

FRSC 560 Advanced Forensic DNA Sciences and **FRSC 561 Forensic DNA Laboratory**

Students shall have completed undergraduate coursework in molecular and/or cell biology, as well as genetics, or students must obtain permission of the instructor prior to taking FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory.

FRSC 540 Advanced Forensic Chemistry and FRSC 541 Forensic Chemistry Laboratory

Students shall have completed undergraduate coursework in general chemistry including polarity and acid/base chemistry. Students shall also have completed Organic Chemistry and be able to identify functional groups and other chemistry structures that make up a molecule. Exposure to instrumental techniques such as gas chromatography, mass spectrometry and infrared spectroscopy is recommended or permission of instructor.

Degree Requirements:

Students should refer to the Admissions & Policies tab for specific policies related to this program.
Select one concentration from the following:

Concentration in Crime Scene Investigation (CSIN)

This concentration educates students for a career as a crime scene investigator.

Core Courses		15
FRSC 500	Introduction to Forensic Science	
FRSC 510	Basic Crime Analysis	
FRSC 511	Advanced Crime Scene Analysis	
FRSC 530	Law and Forensic Science	
FRSC 570	Trace and Physical Evidence Concepts	
Research Project or Non-Research Project		8-9

Research Project Option

The Research Project Option is designed for students planning to pursue a doctoral degree or a career involving research in the field of forensic science or other related disciplines. The research project is based on laboratory research that must be preapproved by the advisory committee, which is appointed during the first semester of registration in FRSC 610 (1 credit) Forensic Research Project. Students are responsible for selecting research advisors who can commit as an advisor during the semesters that the student indicates that they will be conducting their research and enrolled in FRSC 610. Students must then complete their written research project and present their research during an oral defense during the semester of registration in FRSC 610 (4 credit) Forensic Research Project.

FRSC 600	Forensics Seminar	
FRSC 601	**Quantitative Methods for Forensic Scientists**	
FRSC 610	Forensic Research Project	

Non-Research Project Option

Students selecting this option are not required to complete a laboratory-based research project. Instead, they must successfully pass FRSC 699 (0 credits) Forensic Comprehensive Examination to demonstrate thorough comprehension of the curriculum and must select 8-9 credits of additional elective coursework.

FRSC 699	Comprehensive Examination	

Select 8-9 credits of additional FRSC elective courses

Electives		12-13
~~Select 16 credits from the following courses:~~		~~16~~

Select 12-13 credits from the following courses to reach a total of 36 credits:

FRSC 512	Physical Evidence Laboratory	

FRSC 513	Forensic Photography
FRSC 514	Survey of Forensic Chemistry, Biology, and DNA Analysis
FRSC 515	Selected Topics in Forensic Science
FRSC 516	Forensic Drone Photography
FRSC 517	Questioned Document Examination
FRSC 518	Analytical Thinking Violent Crime Profiling
FRSC 520	Toxicology
FRSC 525	**Molecular Biology**
FRSC 526	**Molecular Biology Laboratory**
FRSC 550	Issues in Forensic Anthropology
FRSC 580	Facial Reconstruction
FRSC 590	Medicolegal Death Investigation and Pathology
FRSC 600	Forensics Seminar
FRSC 620	Face and Biometric Pattern Analysis
FRSC 630	Fingerprint Identification
FRSC 640	Legal, Privacy and Ethical Issues in Identity Analysis
FRSC 650	Identity Analysis Applications
FRSC 670	**Forensic Genomics**
FRSC 690	Capstone - Moot Court Expert Testimony
FRSC 790	Internship in Forensic Science (Credits: 1-6)
Total Credits	**36**

Concentration in Forensic Biology Analysis (FRSB)

This concentration educates students for a career as a forensic biology laboratory analyst.

The successful passing of a Virginia Department of Forensic Sciences background check is required prior to gaining access to FRSC 560 Advanced Forensic DNA Sciences and FRSC 561 Forensic DNA Laboratory. In order to obtain a career as a DNA Analyst, the student should have undergraduate coursework in Statistics, Molecular Biology, Genetics, and Biochemistry.

Core Courses		30
FRSC 500	Introduction to Forensic Science	
FRSC 510	Basic Crime Analysis	
FRSC 512	Physical Evidence Laboratory	
or FRSC 630	Fingerprint Identification	
FRSC 514	Survey of Forensic Chemistry, Biology, and DNA Analysis	
FRSC 530	Law and Forensic Science	
FRSC 560	Advanced Forensic DNA Sciences	
& FRSC 561	and Forensic DNA Laboratory	
FRSC 570	Trace and Physical Evidence Concepts	
FRSC 600	Forensics Seminar	
FRSC 601	**Quantitative Methods for Forensic Scientists**	

FRSC 610	Forensic Research Project	
Electives		6
~~Select 9 credits from the following courses:~~		~~9~~
Select 6 credits from the following courses:		
FRSC 511	Advanced Crime Scene Analysis	
FRSC 512	Physical Evidence Laboratory	
FRSC 513	Forensic Photography	
FRSC 515	Selected Topics in Forensic Science	
FRSC 516	Forensic Drone Photography	
FRSC 517	Questioned Document Examination	
FRSC 518	Analytical Thinking Violent Crime Profiling	
FRSC 520	Toxicology	
FRSC 525	**Molecular Biology**	
FRSC 526	**Molecular Biology Laboratory**	
FRSC 550	Issues in Forensic Anthropology	
FRSC 580	Facial Reconstruction	
FRSC 590	Medicolegal Death Investigation and Pathology	
FRSC 600	Forensics Seminar	
FRSC 620	Face and Biometric Pattern Analysis	
FRSC 630	Fingerprint Identification	
FRSC 640	Legal, Privacy and Ethical Issues in Identity Analysis	
FRSC 650	Identity Analysis Applications	
FRSC 670	**Forensic Genomics**	
FRSC 690	Capstone - Moot Court Expert Testimony	
FRSC 790	Internship in Forensic Science (Credits: 1-6)	
Total Credits		**36**

Concentration in Forensic Chemistry Analysis (FRCA)

This concentration educates students for a career as a forensic chemistry laboratory analyst.

The successful passing of a Virginia Department of Forensic Sciences background check is required prior to gaining access to FRSC 540 Advanced Forensic Chemistry and FRSC 541 Forensic Chemistry Laboratory.

Core Courses		33
FRSC 500	Introduction to Forensic Science	
FRSC 510	Basic Crime Analysis	
FRSC 512	Physical Evidence Laboratory	
or FRSC 630	Fingerprint Identification	
FRSC 514	Survey of Forensic Chemistry, Biology, and DNA Analysis	
FRSC 520	Toxicology	
FRSC 530	Law and Forensic Science	

FRSC 540	Advanced Forensic Chemistry	
& FRSC 541	and Forensic Chemistry Laboratory	
FRSC 570	Trace and Physical Evidence Concepts	
FRSC 600	Forensics Seminar	
FRSC 601	**Quantitative Methods for Forensic Scientists**	
FRSC 610	Forensic Research Project	
Electives		3
~~Select 6 credits from the following courses:~~		~~6~~
Select 3 credits from the following courses:		
FRSC 511	Advanced Crime Scene Analysis	
FRSC 512	Physical Evidence Laboratory	
FRSC 513	Forensic Photography	
FRSC 515	Selected Topics in Forensic Science	
FRSC 516	Forensic Drone Photography	
FRSC 517	Questioned Document Examination	
FRSC 518	Analytical Thinking Violent Crime Profiling	
FRSC 525	**Molecular Biology**	
FRSC 526	**Molecular Biology Laboratory**	
FRSC 550	Issues in Forensic Anthropology	
FRSC 580	Facial Reconstruction	
FRSC 590	Medicolegal Death Investigation and Pathology	
FRSC 600	Forensics Seminar	
FRSC 620	Face and Biometric Pattern Analysis	
FRSC 630	Fingerprint Identification	
FRSC 640	Legal, Privacy and Ethical Issues in Identity Analysis	
FRSC 650	Identity Analysis Applications	
FRSC 670	**Forensic Genomics**	
FRSC 690	Capstone - Moot Court Expert Testimony	
FRSC 790	Internship in Forensic Science (Credits: 1-6)	
Total Credits		**36**

Concentration in Forensic/Biometric Identity Analysis (FRBI)

This concentration educates students for a career as an identity intelligence analyst.

Core Courses		24
FRSC 500	Introduction to Forensic Science	
FRSC 510	Basic Crime Analysis	
FRSC 514	Survey of Forensic Chemistry, Biology, and DNA Analysis	
FRSC 530	Law and Forensic Science	
FRSC 620	Face and Biometric Pattern Analysis	
FRSC 630	Fingerprint Identification	

FRSC 640	Legal, Privacy and Ethical Issues in Identity Analysis	
FRSC 650	Identity Analysis Applications	
Research Project or Non-Research Project		8-9

Research Project Option

The Research Project Option is designed for students planning to pursue a doctoral degree or a career involving research in the field of forensic science or other related disciplines. The research project is based on laboratory research that must be preapproved by the advisory committee, which is appointed during the first semester of registration in FRSC 610 (1 credit) Forensic Research Project. Students are responsible for selecting research advisors who can commit as an advisor during the semesters that the student indicates that they will be conducting their research and enrolled in FRSC 610. Students must then complete their written research project and present their research during an oral defense during the semester of registration in FRSC 610 (4 credits) Forensic Research Project.

FRSC 600	Forensics Seminar	
FRSC 601	**Quantitative Methods for Forensic Scientists**	
FRSC 610	Forensic Research Project	

Non-Research Project Option

Students selecting this option are not required to complete a laboratory-based research project. Instead, they must successfully pass FRSC 699 (0 credits) Forensic Comprehensive Examination to demonstrate thorough comprehension of the curriculum and must select 8-9 credits of additional elective coursework.

FRSC 699	Comprehensive Examination	

Select 8-9 credits of additional FRSC elective courses

Electives		3-4
~~Select 4 credits from the following courses:~~		~~4~~

Select 3-4 credits from the following courses to reach a total of 36 credits:

FRSC 511	Advanced Crime Scene Analysis
FRSC 512	Physical Evidence Laboratory
FRSC 513	Forensic Photography
FRSC 515	Selected Topics in Forensic Science
FRSC 516	Forensic Drone Photography
FRSC 517	Questioned Document Examination
FRSC 518	Analytical Thinking Violent Crime Profiling
FRSC 520	Toxicology
FRSC 525	**Molecular Biology**
FRSC 526	**Molecular Biology Laboratory**
FRSC 550	Issues in Forensic Anthropology
FRSC 570	Trace and Physical Evidence Concepts
FRSC 580	Facial Reconstruction
FRSC 590	Medicolegal Death Investigation and Pathology
FRSC 600	Forensics Seminar

FRSC 670	**Forensic Genomics**
FRSC 690	Capstone - Moot Court Expert Testimony
FRSC 790	Internship in Forensic Science (Credits: 1-6)
AIT 678	National Security Challenges
Total Credits	**36**

Retroactive Requirements Updates:

We are also requesting a Retroactive Requirement Update for catalog year 2020-2021 and 2021-2022 with changes denoted in green in the attached so that the University Catalog will correctly require only 36 credits for the CSI and Forensic Biometric Identity Analysis Concentrations when a student selects the Comprehensive Exam option.

We've also added elective courses to all concentrations that are being approved in the program modification above.

Plan of Study:

Honors Information:

Accelerated Description/Dual Degree Description:

INTO-Mason Requirements:

College Requirements & Policies:

Department / Academic Unit Requirements & Policies:

Program Outcomes

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

Courses offered via distance (if

applicable):

Indicate whether students are able

What is the primary delivery format for the program?

Face-to-Face Only

Does any portion of this program occur off-campus?

Yes

Off-campus details:

The following courses are taught off site:

1. FRSC 520, 3 credits
2. FRSC 540, 3 credits
3. FRSC 541, 1 credit
4. FRSC 560, 3 credits
5. FRSC 561, 1 credit
6. FRSC 590, 3 credits

Are you working with a vendor / other collaborators to offer your program?

Yes

Please explain:

The off site courses are taught at the Virginia Department of Forensic Science Laboratory.

Related Departments

Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?

No

Please explain:

Are you adding or removing a licensure component?

No

Please explain:

Additional SCHEV & SACSCOC Information

Are you changing the total number of credits required for this program?

No

Are you changing the delivery format in any way (e.g adding an online option)?

No

Are you adding/removing a licensure option which was approved by SCHEV?

No

Will any portion of this program be offered at an off-campus location?

No

What off-campus location(s)? List all

What percentage of credits toward this program are offered at the off-campus location(s)? Please list percentages by site (i.e. 15% at Site A, 35% at Site B etc.)

Will this program change affect any specialized accreditation?

No

Is the content of the new program closely related to that of an existing approved program?

No

Which existing approved program(s)?

Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)?

No

Which existing approved program(s)?

Is this new program considered to be "lowering the degree level of a currently approved program" (i.e. existing content is at higher degree level, new content is at the lower degree level)?

No

Which existing approved program(s)?

Does this change represent a repackaging of content in an existing approved degree/certificate program?

No

Which existing approved program(s)?

Percentage of total credits containing new course content, excluding gen ed courses for undergraduate programs ("New content" means content that is not currently included in an existing approved degree/certificate program.) Please choose a percentage (i.e. 0%-100%)

less than 25%

Are the total credits for the program increasing or decreasing by more than 3 credits?

No

Will any additional equipment/facilites be needed?

No

Description of institutional impact:

Will any additional faculty be required?

No

Description of institutional impact:

Will any additional financial resources be needed?

No

Description of institutional impact:

Will any additional library/learning resources needed?

No

Description of institutional impact:

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? No

Green Leaf Designation

Sustainability-focused academic programs require at least one green leaf course. Either that course is itself sustainability-focused or else the program requires a set of sustainability-related courses with aggregated

Relationship to Existing Courses

List sustainability-focused courses currently required in the degree

Sustainability-related academic programs either require at least one sustainability-related course or else offer any green leaf course as an option or elective. *

List sustainability-related courses currently required in the degree

Does this program cover material which crosses into another department?

No

Impacted Departments

Additional Attachments

~~MSForensics.pdf~~

Retroactive PAF- Master of Science Forensic Science 8-11-2021.pdf

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

Is this course required of all students in this degree program?

%wi_required.eschtml%

Attached Document

Key: 193