MEDIA FORENSICS (MSMF)

MSMF 5000 - Experiential Lab (1 Credit)
Students will understand laboratory procedures and the application of A/V technology in the field and in analysis through professional conferences and site visits to crime labs and government agencies. Students will respond to experiences regarding presentation, demonstration, and discussion components. Restriction: Restricted to MFOR-MS students. Repeatable. Max hours: 5 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 5.
Restriction: Restricted to MFOR-MS students.

MSMF 5050 - Topics in Media Forensics (1-3 Credits)
Students learn theory and application through topical subjects designed to enhance theoretical and practical training in the analysis of forensic media. Emphasis will be placed on emerging technologies, methodological developments, and strengthening fundamental skills. These courses are repeatable for credit. Repeatable. Max hours: 5 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 5.

MSMF 5100 - Forensic Science and Litigation (3 Credits)
Critical analysis of legal precedent and court proceedings reveal to students the correlation between science and law in the litigation of forensic evidence. Assigned reading and research papers regarding evidence admissibility and scientific methodology will prepare students for evidence examination. Restriction: Restricted to MFOR-MS students. Max hours: 3 Credits.
Grading Basis: Letter Grade
Restriction: Restricted to MFOR-MS students.
Typically Offered: Fall.

MSMF 5150 - Research Practices in Media Forensics (3 Credits)
An introduction to practical research techniques and forensic science periodicals provides students with a foundation for projects and reports in subsequent classes and for the research thesis. Library resources, research design, writing styles, and information technology will be discussed. Restriction: Restricted to MFOR-MS students. Max hours: 3 Credits.
Grading Basis: Letter Grade
Restriction: Restricted to MFOR-MS students.
Typically Offered: Fall.

MSMF 5200 - Foundations in Media Forensics (3 Credits)
Students learn the foundational processes integral to forensic audio, video, and image analysis demonstrating knowledge through reading responses and documentation of procedures and methodology used in assigned projects. Topics include: media recording technology, analog/digital theory, multimedia compression, and equipment characterization. Prereq: MSMF 5100 and 5150 with a B- or higher. Restriction: Restricted to MFOR-MS students. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: MSMF 5100 and 5150 with a B- or higher. Restriction: Restricted to MFOR-MS students.
Typically Offered: Spring.

MSMF 5250 - MATLAB Foundations (2 Credits)
An introduction to MATLAB workflow and its use in Media Forensics will be explored. Students will learn how to build program commands in scripts for signal analysis and to display graphical representations of data and statistics. Prereq: MSMF 5100 and 5150 with a B- or higher. Restriction: Restricted to MFOR-MS students. Max hours: 2 Credits.
Grading Basis: Letter Grade
Prereq: MSMF 5100 and 5150 with a B- or higher. Restriction: Restricted to MFOR-MS students.
Typically Offered: Spring.

MSMF 5300 - Computer Forensics (3 Credits)
Students explore computer forensics through guided projects and group discussion. An overview of computer hardware/software and characterization of storage media and file types will be covered through mock evidence examination documenting the search, seizure, and acquisition of forensic media. Prereq: MSMF 5200 and MSMF 5250 with a B- or higher. Restriction: Restricted to MFOR-MS students. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: MSMF 5200 and MSMF 5250 with a B- or higher. Restriction: Restricted to MFOR-MS students.

MSMF 5350 - Mobile Phone Forensics (1 Credit)
Students learn concepts regarding the proper handling of mobile phones to ensure evidence integrity and approaches to address the ever-changing field. Students are prepared for the acquisition and analysis of forensic media on personal devices through exercises and group projects. Prereq: MSMF 5200 and MSMF 5250 with a B- or higher. Restriction: Restricted to MFOR-MS students. Max hours: 1 Credit.
Grading Basis: Letter Grade
Prereq: MSMF 5200 and MSMF 5250 with a B- or higher. Restriction: Restricted to MFOR-MS students.

MSMF 5400 - Forensic Audio Analysis (3 Credits)
Students learn concepts through the application of techniques related to audio enhancement, digital media authentication, acoustic analysis, and automatic speaker recognition. The acquisition and analysis of digital evidence applying reliable methods prepares students for forensic audio analysis in the laboratory. Prereq: MSMF 5300 and 5350 with a B- or higher. Coreq: MSMF 5450. Restriction: Restricted to MFOR-MS students. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: MSMF 5300 and 5350 with a B- or higher. Coreq: MSMF 5450.
Restriction: Restricted to MFOR-MS students.
Typically Offered: Fall.

MSMF 5450 - MATLAB for Forensic Audio Analysis (1 Credit)
Advanced application of MATLAB for the forensic analysis of audio will be presented including file access, FFT and waveform plotting, and signal detection. Through the exploration of correlation and using mean quadratic difference students will be prepared for media authentication. Prereq: MSMF 5300 and 5350 with a B- or higher. Coreq: MSMF 5400. Restriction: Restricted to MFOR-MS students. Max hours: 1 Credit.
Grading Basis: Letter Grade
Prereq: MSMF 5300 and 5350 with a B- or higher. Coreq: MSMF 5400.
Restriction: Restricted to MFOR-MS students.
Typically Offered: Fall.

MSMF 5500 - Forensic Video and Image Analysis (3 Credits)
Students learn concepts through the application of techniques related to forensic video collection and image enhancement, authentication, photogrammetry, and comparison. The acquisition and analysis of digital evidence applying reliable methods prepares students for working on forensic imagery in the laboratory. Prereq: MSMF 5400 and 5450 with a B- or higher. Coreq: MSMF 5550. Restriction: Restricted to MFOR-MS. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: MSMF 5400 and 5450 with a B- or higher. Coreq: MSMF 5550.
Restriction: Restricted to MFOR-MS.
Typically Offered: Spring.

MSMF 5550 - MATLAB for Forensic Video and Image Analysis (1 Credit)
Advanced application of MATLAB for the forensic analysis of images will be presented covering image processing and analysis techniques. Through exploring analyses such as Photo Response Non-Uniformity and the BI-Dimensional DFT, students are prepared for image authenticity examinations. Prereq: MSMF 5400 and 5450 with a B- or higher. Coreq: MSMF 5500. Restriction: Restricted to MFOR-MS. Max hours: 1 Credit.
Grading Basis: Letter Grade
Prereq: MSMF 5400 and 5450 with a B- or higher. Coreq: MSMF 5500.
Restriction: Restricted to MFOR-MS.
Typically Offered: Spring.

MSMF 5600 - Report Writing and Court Testimony (3 Credits)
Students are prepared for expert witness testimony through the analysis of mock evidence, complimentary report preparation, and subsequent mock trial. This capstone experience will demonstrate a student's technical writing and presentation skills and exercise the creation of demonstrative materials. Prereq: MSMF 5500 and 5550 with a B- or higher. Restriction: Restricted to MFOR-MS students. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: MSMF 5500 and 5550 with a B- or higher. Restriction: Restricted to MFOR-MS students.

MSMF 6900 - Research Thesis in Media Forensics (4 Credits)
Students work closely with their thesis advisor in selecting a topic for original research and scientific publication. This capstone project creates an area of specialty for degree candidates. Approved materials are evaluated through report submission and thesis defense. Prereq: MSMF 5600 with a B- or higher. Restriction: Restricted to MFOR-MS students. Max hours: 4 Credits.
Grading Basis: Letter Grade with IP
Prereq: MSMF 5600 with a B- or higher. Restriction: Restricted to MFOR-MS students.