



Marshall University Syllabus
College of Science
Forensic Science

Course

FSC 650 Special Topics: TAP FBI QAS Forensic Validation

Course Description

Present course material on special areas of research or topics which are not routinely covered in existing courses.

The goal of the Technical Assistance Program (TAP) is to prepare select students for placement in host forensic laboratories for validation studies essential to the operation of accredited systems. This is a competitive process, students enrolled in this course are not guaranteed a TAP placement. The general instruction scheme is to introduce students to extraction, quantitation, amplification, capillary electrophoresis, and analysis applications at an accelerated pace. All lecture topics will be covered in significant detail in FSC 604 in the spring semester.

More specific information presented will depend on the TAP projects identified in the fall. This course will be flexible to address the current/incoming projects.

Credits

2 graduate credits

Prerequisites

Formal admission to the Graduate Forensic Science Program. Sincere interest in a DNA internship.

Term/Year

Fall 2024

Class Meeting Days/Times

Wednesday/12:30pm-2:30pm

Location

West Wing, W01

Academic Calendar

For beginning, ending, and add/drop dates, see the [Marshall University Academic Calendar](https://www.marshall.edu/academic-calendar/) (URL: <https://www.marshall.edu/academic-calendar/>).

Instructor

Kelly Beatty, MS

Contact Information

- Office: W200B, phone 304-691-8953
- Office Hours: M-Th 9am-11am or by appointment.
- Marshall Email: kbeatty@marshall.edu

COV

ID-19 Related Information

Marshall's official COVID-19 protocols are online at <https://www.marshall.edu/coronavirus> (URL: <https://www.marshall.edu/coronavirus/>). Policies and protocols may change over time as we respond to changing conditions. The website will always contain the most recent information – check it frequently for the most current information.

Key policies and practices at the start of the Fall 2022 semester include the following:

Required and/or Recommended Texts and Materials

Required Texts and Materials

None are required

Recommended/Optional Texts and Materials

Fundamentals of Forensic DNA Typing, 2nd Edition

Advanced Topics in Forensic DNA Typing: Interpretation, Butler

Course Student Learning Outcomes

The table below shows the following relationships: How each student learning outcome will be practiced and assessed in the course.

Course student learning outcomes	How students will practice each outcome in this course	How student achievement of each outcome will be assessed in this course
Accelerate understanding and familiarity of forensic DNA technologies (extraction, quantification, amplification, capillary electrophoresis, and data analysis)	Each step of lecture will be paired with demonstration in the lab in order to develop a DNA profile for all participating students.	Class quizzes and assessments of published validations
Gain practical skills through laboratory demonstration		
Discuss validation strategies and accreditation requirements		

Course Requirements/Due Dates

Assignment due dates will be a week after first assigned. Participation and in-person instruction are required.

In class quiz at the end of each lecture class.

Final Oral Exam – December 6th 2023

Grading Policy

Grading Scale:

90-100% - A

80-89% - B

70-79% - C

60-69% - D

59% and below – F

*Exam questions in which less than 35% of the class receives full credit will be considered for omission from the final score at the instructor's discretion. If removed, the points per exam and total points will be adjusted appropriately.

Attendance/Participation Policy

- Attendance is Mandatory: Students enrolled in the Forensic Science Program are expected to attend all classes in-person when possible. If you are sick or not able to make it to class, a phone call or email is required ***BEFORE*** class time. Class will be live in Teams to allow for remote attendance and class recordings will be available if attendance (in-person or virtual) is not possible.
- If you are unable to take an exam on the selected day, arrangements must be made ***BEFORE*** the scheduled exam date. Failure to do so will result in a failing grade.
- Completion of an Instructor signed Student Absence form is facilitated by the Student and sent to the Program Director. This may occur before the absence (recommended) or on the first day of class upon return. Completed Student Absence forms (form bearing signatures of the Student, Instructor(s), and Program Director) will be placed in the Student's formal file. The Student Absence form can be found in the Student section of the MU Forensics website [Secure Section - \(marshall.edu\)](https://marshall.edu).
 - Excused Absence: The Program Director and the Instructor must be notified of absences. Formal documentation is required which may involve physician statements excusing the Student from class, obituaries, or professional travel documentation. No exams or other formal exercises will be made up without an Excused Absence.
 - Unexcused Absence: Any unexcused absence in which a student misses a graded activity will result in the deduction of one letter grade from the student's final grade.
- Punctuality: On time arrival is expected of all students. A point deduction of 25 points will be made if a lack of punctuality (in-person or virtually) is persistent (>3 times for the semester).
- Any student who believes the final course grade is incorrect may appeal the grade. [Appeals - Graduate Studies \(marshall.edu\)](https://marshall.edu)

University Policies

By enrolling in this course, you agree to the University Policies. Please read the full text of each policy (listed below) by going to [MU Academic Affairs: University Policies](https://www.marshall.edu/academic-affairs/policies/). (URL: <https://www.marshall.edu/academic-affairs/policies/>)

- Academic Dishonesty Policy
- Academic Dismissal Policy
- Academic Forgiveness Policy
- Academic Probation and Suspension Policy
- Affirmative Action Policy
- Dead Week Policy

- D/F Repeat Rule
- Excused Absence Policy for Undergraduates
- Inclement Weather Policy
- Sexual Harassment Policy
- Students with Disabilities (Policies and Procedures)
- University Computing Services Acceptable Use Policy

Generative AI is fully prohibited in the course.

- Students are prohibited from using generative AI in any way on any assignment in this course. The use of generative AI in this course will be considered a violation of both Marshall's [Academic Dishonesty Policy](https://www.marshall.edu/academic-affairs/policies/#academicdishonesty) (URL: <https://www.marshall.edu/academic-affairs/policies/#academicdishonesty>) and the [Student Code of Conduct](https://www.marshall.edu/student-conduct/files/Studnet-Code-of-Conduct-2022.pdf) (URL: <https://www.marshall.edu/student-conduct/files/Studnet-Code-of-Conduct-2022.pdf>).

Course Schedule *Dates/Topics are subject to change.

Week	Activity/Assignment
Week 1	No class meeting – TAP solicitations
Week 2	No class meeting – TAP solicitations
Week 3	No class meeting – customization of content to current TAP projects
Week 4	Introduction to DNA
Week 5	Accelerated Extraction lecture and validation strategies
Week 6	Extraction lab
Week 7	Accelerated Quantification lecture and validation strategies
Week 8	Quantification lab

Week	Activity/Assignment
Week 9	Accelerated Amplification lecture and validation strategies
Week 10	Amplification lab
Week 11	Accelerated Capillary Electrophoresis lecture and validation strategies
Week 12	Capillary Electrophoresis lab
Week 13	Accelerated Data Analysis lecture and validation strategies
Week 14	TBD
Week 15	NO CLASS – Thanksgiving Break
Week 16	Dead Week – Questions/finals prep
Week 17	Final Oral Exam, December 11 th