



FORENSIC SCIENCE

MARSHALL UNIVERSITY
Forensic Science Program

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FSC 629 Advanced DNA Technologies
Fall 2018

Instructor
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Required Texts
None
Recommended Texts
Course Description
This course will provide advanced instruction in DNA technologies to assist in the preparation for a career in a forensic DNA laboratory. (2 hours) <u>LOCATION:</u>
Prerequisites
Formal admission to the Forensic Science Program based on academic achievement, Hepatitis B immunization or waiver, supportive letters of recommendation, and passing a background check. Also FSC 603 and 604.
Goals
<ul style="list-style-type: none">Assist forensic science students in understanding more complex DNA mixtures, statistical analyses, reporting, and defending through testimony.
Objectives
<ul style="list-style-type: none">Discuss, interpret and locate the individual standards outlined in the FBI Quality Assurance Audit DocumentAssess DNA electropherogram results, troubleshoot possible explanations for the data obtained and identify methods to resolve the issuesAnalyze mixed DNA profiles from criminal evidence with reference DNA profiles, draw conclusions and calculate relevant statistics to describe the conclusions reachedCompose multiple DNA laboratory reportsExhibit and defend opinions rendered regarding DNA results and conclusions in a mock testimony experience
Evaluation/Assessment of Learner Objectives
<u>400 Total Class Points</u> Assignments – take home audit, troubleshooting, 4-6 (class dependent) DNA laboratory reports (200 points total) Exams – 2 (midterm and final), each exam 100* points, multiple choice and T/F (200 points total) <i>*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.</i>
Grading Policy

Grading Scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
59% and below	F

Attendance Policy

Attendance is Mandatory: Students enrolled in the Forensic Science Program are expected to attend all classes, laboratories, seminars, internship sessions, and presentations offered by guest speakers. If you are sick or are not able to make it to class, a phone call or e-mail is required BEFORE class time. If you are unable to take an exam on the selected day, arrangements must be made BEFORE the scheduled date to take the exam. Failure to do so will result in a failing grade. <http://www.marshall.edu/wpmu/student-affairs/files/2011/08/Medical-Withdrawal-Policy.pdf>

Student Absence Form: www.marshall.edu/forensics <Student Only> <Forms>; <http://www.marshall.edu/forensics/student-resources>; <http://www.marshall.edu/forensics/faculty-resources-and-forms>
Completion of an Instructor-signed Student Absence Form is facilitated by the Student and sent on to the Program Coordinator for all absences. This may occur BEFORE the absence (recommended) or on the first day of class upon return. Whether the absence is EXCUSED or UNEXCUSED will dictate whether the student will be granted make-ups and whether they will receive point or grade reductions. Completed Absence Forms will be placed in the student's formal file. A Completed Absence Form is one bearing signatures of the student, instructor(s), and program coordinator. If the student is not able to attend class for any reason, a phone call or e-mail to the Instructor is required BEFORE class time as this is a standard employer practice.

Excused Absences: The Program Coordinator and Instructor must be notified of absences. Formal documentation is required for Excused Absences which may involve physician statements excusing the student from class, obituaries, or professional travel documentation. With an Excused Absence, the student may be asked to take an exam BEFORE the scheduled date. No exams, labs, or other formal exercises will be made up without an Excused Absence.

Examples of Excused Absences include:

- Personal Medical Emergency – Formal documentation is required from a licensed physician or appropriate healthcare provider
- Death in the Immediate Family – Documentation required
- Forensic Professional Travel – Documentation required. Marshall University Forensic Science Program, Marshall University, the West Virginia Policy Board for Higher Education is not liable for accidents or injuries incurred during trips within or out of the state.

Unexcused Absences: Any unexcused absence in which a student misses a lab or exam or other graded activity will result in the deduction of one letter grade from the student's final grade or a reduction of points as specified in the Course Syllabus. Any quizzes missed during an unexcused absence will result in a zero.

Medical Withdrawal: <http://www.marshall.edu/wpmu/student-affairs/files/2011/08/Medical-Withdrawal-Policy.pdf>

Final Grade Appeal: Any student who believes the final course grade is wrong may appeal the grade. See (<http://www.marshall.edu/graduate/graduate-student-appeals/>). The appeal is limited to three areas: a) The final grade assigned for a course is based on an obvious error (e.g. a clear error such as error in computing a grade or

failure to grade one of the answers on an exam). b) Standards different from those established in written department, or Graduate College policies, if specific policies exist, were used in assigning the grade. c) The instructor departed from his or her previously articulated, written standards, without notifying graduate students, in determining the grade. There are several steps in the appeal process. These are designed to allow the student, faculty, and program director to correct the error or come to a mutual compromise before it goes to the Graduate College/College of Science Dean's Office for final review.

Make-up Policy

The program coordinator and instructor must be notified of absences. Doctor's excuse may be required if more than one absence occurs.

Academic Dishonesty

Academic dishonesty in any form will not be tolerated. Plagiarism is defined as "submitting as one's own work or creation any material or an idea wholly or in part created by another. This includes oral, written, and graphical material, and both published and unpublished work. It is the student's responsibility to clearly distinguish his/her own work from that created by others. This includes the proper use of quotation marks, paraphrase, and the citation of the original source" (2008-2009, Graduate Catalog, p. 61). Refer to Marshall University Board of Governors Policy No. AA-12 Academic Dishonesty - <http://www.marshall.edu/president/Board/Policies/MUBOG%20AA-12%20Academic%20Dishonesty.pdf> – for complete details.

Policy for Student's with Disabilities

Marshall University is committed to equal opportunity education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117 (304.696.2271) to provide documentation of their disability. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing, and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, access the website for the Office of Disabled Student Services: <http://www.marshall.edu/disabled/>

Affirmative Action Policy

It is the policy of Marshall University to provide equal opportunities to all prospective and current members of the student body, faculty, and staff on the basis of individual qualifications and merit without regard to race, color, sex, religion, age, disability, national origin, or sexual orientation. To obtain information on the implementation of the policy regarding nondiscrimination, contact the Director of Equity Programs, Old Main, Marshall University, Huntington, WV 24755 (304.696.2592)

Acceptable Use Policy

Access to Marshall University's resources is a privilege and is provided with an expectation of responsible and acceptable use. To read the principles and guidelines as well as federal, state, and local regulations, please go to <http://www.marshall.edu/ucs/cs/accptuse.asp>.

Inclement Weather Policy

In the case of inclement weather, please follow Marshall's procedures if any cancellations/delays occur. <http://www.marshall.edu/ucomm/weather.html>.

Date(s)	Topics and Activities
Week 1	Introduction, DNA Accreditation Standards
Week 2	DNA Accreditation Standards, Standards Assignment
Week 3	Basic DNA Troubleshooting, Troubleshooting Assignment
Week 4	Report Writing, Report Assignment #1
Week 5	Mixture Interpretation, Report Assignment #2
Week 6	Mixture Interpretation
Week 7	Midterm
Week 8	Mixture Deconvolution, Deconvolution Assignment
Week 9	Class presentations of deconvolution assignment
Week 10	Conclusions and Statistics, Report Assignment #3
Week 11	Conclusions and Statistics, Report Assignment #4
Week 12	Mitochondrial DNA
Week 13	Testimony
Week 14	Thanksgiving Break – No Class
Week 15	Mock Trials
Week 16	Final Exam

Course schedule and activities subject to change. Students will be made aware of any changes.

Any Extra credit exercises will not count against the student score.