

BIOL 4355: Methods in Forensic Biology (Lecture and Laboratory)
Fall 2014

Instructor(s): Xavier G. Aranda

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Office Hours: T: 10:00 am – 12:00 pm, 2:00 pm – 4:00 pm
W: 10:00 am – 12:00 pm
R: 10:00 am – 12:00 pm

Section Information: BIOL 4355 Section 001 and 002

Time and Place of Class Meetings: Life Science Building Room LS 334 Wednesdays 1:00–4:50 pm
All lecture and laboratory exercises will take place in room LS 334.

Description of Course Content: Laboratory concepts pertaining to Chain of Custody, Serology, Sample Collection, DNA Extractions, DNA Quantification, PCR Amplification, Electrophoresis, Human Identification (DNA Analysis), and Report Writing. Visiting experts in related Forensic fields may attend lectures and/or laboratory for guidance.

Student Learning Outcomes:

The student will be able to describe the fundamental concept in forensic science.
The student will be able to analyze serological specimens.
The student will be able to explain the mechanism(s) by which serological tests are based upon.
The student will be able to demonstrate their knowledge in a mock crime scene or evidence.
The student will be able to identify potential biological sources for serological and DNA analyses.
The student will be able to discuss the major components of a journal article.
The student will be involved in laboratory safety, cleaning, and organization.
The student will be able to describe the major series of steps from evidence collection through DNA analysis.

Required Textbooks and Other Course Materials: Fundamentals of Forensic DNA Typing, Publication Date: **September 3, 2009** | ISBN-10: **0123749999** | ISBN-13: **978-0123749994** | Edition: **1**, John Butler (Suggested but not required).

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, attendance is strongly suggested for daily quizzes, laboratory exercises, and laboratory notebook assignments. Notification via e-mail will be required for each absence.

Other Requirements: Prerequisites: BIOL 3315, 3339, 3352, and a course in statistics (Recommended BIOL 2300) or permission.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

Descriptions of major assignments and examinations:

08/27/14	Introduction to Course and Basic Laboratory Safety
09/03/14	Laboratory Safety (Pathogens), Pipetting, Dilutions, and Molarities
09/10/14	Pipetting (Practice) and Reagent Preparation
09/17/14	Evidence Collection, Chain of Custody, and Sample Collection
09/24/14	Serology (Blood and Semen)
10/01/14	Serology (Blood and Semen)
10/08/14	Exam 1 / DNA Extractions / Journal Assignment
10/15/14	<i>DNA Extractions Continued / Journal Article Assignment Due</i>
10/22/14	Quantification / PCR Amplification
10/29/14	<i>PCR Amplification Continued / Electrophoresis</i>
11/05/14	Exam 2 / Autosomal STR and/or Y STR Amplification
11/12/14	Capillary Electrophoresis – 3130xl
11/19/14	Exam 3 (Take Home Exam) / Mock Case (Start)
11/26/14	Thanksgiving Holiday / No Class
12/03/14	Mock Case (Finish), Report Writing, and Mock Reports due – “ <i>in class assignment</i> ”
12/10/14	Finals Week – Optional Final Exam (8:15 pm–10:45 pm) and <i>Make-up exam if necessary</i>
12/12/14	Grades Due to Registrar

“As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. – Xavier G. Aranda.” Should you find such adjustments prudent, please do your best to advise students in a timely manner. (The definition of “timely” is left to the discretion of each instructor.)

Grading: Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels; see “Student Support Services,” below.

- Daily Quizzes (10 total) – 100 points total (10 questions/quiz)
- Journal Assignment – 25 points total
- Exam 1 – 50 points total
- Exam 2 – 25 points total
- Exam 3 – 25 points total
- Mock Report – 25 points total
- Final Exam – 30 points total (optional)

The grades will be calculated as follows:

[Total Number of Accumulated Points / Total Number of Possible Points] x 100 = Your % Grade.

For Example: [200 correct answers/250 total questions asked] x 100 = 80%

Make-up Exams: Make-up exams will be allowed if a scheduled class period for the exam has been cancelled or for unusual circumstances occurred with notification from student via e-mail or advanced notice in class. Make-up Exam(s) in general are scheduled for December 10, 2014.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate / graduate catalog. For undergraduate courses, see <http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through

a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Lab Safety Training:

Students registered for this course must complete all required lab safety training prior to entering the lab and undertaking any activities. Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e., through the following August) and must be completed anew in subsequent years. There are no exceptions to this University policy. Failure to complete the required training will preclude participation in any lab activities, including those for which a grade is assigned.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS

database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities. <https://www.uta.edu/policy/procedure/7-6>

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Writing Center: The Writing Center, 411 Central Library, offers individual 40 minute sessions to review assignments, *Quick Hits* (5-10 minute quick answers to questions), and workshops on grammar and specific writing projects. Visit <https://uta.mywconline.com/> to register and make appointments. For hours, information about the writing workshops we offer, scheduling a classroom visit, and descriptions of the services we offer undergraduates, graduate students, and faculty members, please visit our website at www.uta.edu/owl/.

<p>Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911.</p>
