

BIOL 4352 SECTION 001

FORENSIC BIOLOGY

SPRING 2008

ALIECE WATTS, MS – INSTRUCTOR

OFFICE LS 465

PHONE 817-614-9474

Lecture TuTh 11:00 – 12:20 Life Science Building Room 124

OFFICE HOURS: Monday 10:00 to 12:00

Tuesday, Thursday 10:00 to 11:00

Other times by appointment

e-mail: awatts01@uta.edu

Text: Forensic DNA Typing, SECOND EDITION, John M. Butler

Disclaimer: This syllabus is provided for student convenience and is based on the most recent information available. There is no guarantee that the information is 100% accurate. If you have special concerns about course information, you are advised to contact the instructor.

Course Description: A comprehensive review of biological principles, applied to forensic science, including sample recovery and handling, analytical techniques, profile matching/exclusion, reporting, and testimony. **Prerequisite:** BIOL 3315, 3339, and 3352, and a course in statistics (BIOL 2300 recommended) or permission of the instructor.

STUDENT LEARNING OUTCOMES: To provide a comprehensive review of biological principles as applied to forensic science and forensic DNA testing.

At the end of this class the student will be able to:

- Describe the structure and function of DNA
- Understand the three main DNA extraction methods
- Relate the significance of DNA quantitation
- Know the steps of the PCR process and what happens to the DNA at each step
- Grasp the theory of capillary electrophoresis and the components of the ABI 3130XL Genetic Analyzer
- Analyze data generated by the ABI 3130XL
- Prepare reports that relate accurate conclusions from the data

ATTENDANCE: Attendance is highly recommended at each lecture.

EXAMS: There will be four exams **and a comprehensive final**. Each exam will count for 15% of the final grade with the final counting for 25%. Exams will begin promptly. No additional time to finish an exam will be allowed for those tardy to exams. Tentative exam dates are listed in the Lecture Sequence but are subject to change. I will give sufficient notice of changes to the Lecture Sequence and Exam schedules. Exams will be multiple choice, short answer and essay. **An ESSAY SCANTRON is necessary for each exam (886-E).**

MAKE-UP EXAMS: There will be NO make-up exams. You may substitute your final exam grade for one exam only for **excused absences**. Excused absences are normally those caused by the following: death in the immediate family, illness or accident requiring medical attention, automobile accident on the way to class, court appearance. Documentation of the cause of the absence must be

presented in writing within one week in order for it to be considered excused. If events do not warrant a make-up exam, a grade of 0 will be recorded for that exam. **ONLY ONE EXAM MAY BE MADE UP.**

GRADING PROCEDURE: There will be four exams; each will count for 15% of the final grade. The final exam **WILL** be comprehensive and will count 25% of the final grade. A research paper is required and will count for 15% of the final grade.

RESEARCH PAPER: Select a topic from the text (for example, any “Blue” heading). Expand and update the idea. 4+ References required. 5 pages text, double spaced, 12 point font. Separate page for references.

- **EXAMPLES**
 - The Human Genome Project
 - DNA Nomenclature rules
 - DNA Extraction from FTA Paper
 - Amplification Inhibitors
 - Methods of quantitation
 - Development of PCR Primers
 - Low Copy Number DNA testing

OTHER INFORMATION: It is highly recommended that you read the chapters prior to attending the lecture. Do not hesitate to ask questions during class or during office hours. I will work with you if you have any problems, but you must ask for help. Be on time for each lecture and exam. Be courteous and do not converse with others during lecture. Silence all pagers and cell phones. **Your test grades cannot be e-mailed to you due to privacy concerns. I will post the grades on WEB CT.**

Dropping a Course: If you decide to drop this course (or any other, for that matter) you must obtain a drop slip from the departmental undergraduate advisors office (for Biology, the advisor is Ms. Jane Pugh, Room 346 Life Science or you may go to the main office in the Biology Department 337 Life Science). Please fill it out, have the instructor of the course you wish to drop sign the slip and return it to the advisor's office or the Biology Office.

Important University Policies:

Americans With Disabilities Act:

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

Academic Integrity:

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Series 50101, Section 2.2)

Student Support Services Available:

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

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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 syllabi. 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. Classes are held as scheduled during this week and lectures and presentations may be given.

Drop for non-payment of tuition: Payment must be received by the term due date of January 9, 2008 or your registration will be cancelled. If your registration is cancelled for non-payment, you may reregister for classes but only if seats are available.

Bomb Threats: If anyone is tempted to call in a bomb threat, be aware that UTA will attempt to trace the phone call and prosecute all responsible parties. Every effort will be made to avoid cancellation of presentations/tests caused by bomb threats. Unannounced alternate sites will be available for these classes. Your instructor will make you aware of alternate class sites in the event that your classroom is not available.

The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT-Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email.

After Hours Safety Escort

The Sam Mav Escort service provides a service to assist students, faculty, staff and campus visitors to reach their destinations after regular business hours. The hours of service are 7:00 p.m. to 1:00 a.m., Sunday through Saturday. 817-272-3381

MavMail:

All students are assigned an email account and information about activating and using it is available at www.uta.edu/email. New students (first semester at UTA) are able to activate their email account 24 hours after registering for courses. There is no additional charge to students for using this account, and it remains active as long as a student is enrolled at UT-Arlington. Students are responsible for checking their email regularly.

BIOL 4352 FORENSIC BIOLOGY SPRING 2008

January 15	INTRODUCTION
January 17	Chapter 1 OVERVIEW & HISTORY
January 22	Chapter 2 BIOLOGY OF DNA
January 24	GROUP DISCUSSION
January 29	Chapter 3 COLLECTION/EXTRACTION/QUANT
January 31	Chapter 4 PCR
February 5	TEST 1
February 7	Chapter 5 COMMON STRs & KITS
February 12	Chapter 6 BIOLOGY OF STRs
February 14	Chapter 7 FORENSIC ISSUES
February 19	Chapter 8 SNPs
February 21	TEST 2
February 26	Chapter 9 Y CHROMOSOME
February 28	Chapter 10 MITOCHONDRIAL
March 4	Chapter 12 SEPARATION METHODS
March 6	Chapter 13 DETECTION METHODS
March 11	ETHICS
March 13	TEST 3
March 18 - 21	SPRING BREAK
March 25	Chapter 14 INSTRUMENTATION
March 27	Chapter 15 GENOTYPING ISSUES Chapter 16 VALIDATION
April 1	Chapter 17 NEW TECHNOLOGY
April 3	Chapter 18 CODIS
April 8	TEST 4
April 10	Chapter 20 DATABASE
April 15	Chapter 21, 22 PROFILE FREQUENCY, MIXTURES
April 17	PROBLEMS
April 22	Appendix IV DAB GUIDELINES
April 24	MOCK TRIAL
April 29	MOCK TRIAL
May 1	REVIEW
May 6	11:00 – 1:30 FINAL

1. Quizzes: NONE
2. Examinations: 4 (Multiple Choice / Short answer / essay)
3. Final Examination: Final Exam (Comprehensive)
4. Other Graded Assignments: Research Paper
5. Missed Exams and Makeup Work: Contact instructor with documented excuse immediately
6. Grading Format Weighting/ Point Value of Assignments & Examinations:

Exams 15% each, Final Exam 25%, Research Paper 15%