FORS 4320

Fundamentals of Forensic Biology

Fall 2017

Instructor Information

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CLASS HOURS: On-line

CLASSROOM: On-line

OFFICE HOURS: On-line

Textbook

- Fundamentals of Forensic DNA Typing 1st Edition, by Dr. John Butler. Academic Press, ISBN-13: 978-0123749994.
- (ebook: https://www.vitalsource.com/products/fundamentals-of-forensic-dna-typing-butler-john-m-v9780123749994)

Course Description

This course will examine the science of current forensic DNA typing methods by focusing on the biology, technology, and genetic interpretation of short tandem repeat (STR) markers, which encompass the most common forensic DNA analysis methods used today. The materials in this course are intended primarily for students learning about forensic DNA analysis in an academic environment.

This course focuses on the role of forensic DNA typing in the criminal justice system. The course is intended to introduce non-science majors to the forensic DNA typing technologies. Course topics include: a review of the history and basics of DNA typing, the DNA typing process: from sample collection to PCR amplification, the science behind short tandem repeats (STRs) and finally, an overview of the forensic application of DNA databases and lineage markers. Credits: 3.

Course Objectives:

1. To develop an understanding of the basics of Genetics and DNA biology.
2. To explore the history of DNA typing as well as historical methods.
3. To offer an overview of the entire process of DNA genotyping, from the different sources of biological evidence to the PCR amplification of genetic material.
4. To foster an informed understanding of scientific principles, terminology, and technical advances crucial to the area of forensic STR typing.
5. To explore issues related to STR genotyping and data interpretation.
6. To provide foundation for informed consumption of news media, current events and scientific discourse as they relate to Forensic DNA typing, Law and Criminal Justice.
7. To encourage and provide opportunity to articulate learned material via exams, exercises and/or class discussion.

Attendance Policy

This is an online course; no class meeting times are scheduled. However, this is an intensive online course. If you even THINK you are a procrastinator, then this online course is NOT for you. A student's willingness or desire to learn is what makes the eLearning experience work.

In this course, you will be expected to be self-paced with a suggested study schedule and timing the taking of quizzes and exams. The schedule has been developed to help you complete the course requirements and meet the course objectives. This online course was developed with non-traditional students in mind, i.e., mature students and those unable or those who find it difficult to come to campus to take the course in a classroom setting. If you are a student who does not typically works ahead of schedule in anticipation of interruptions, then again, this course is NOT for you. This course allows you the flexibility to manage your time, resources and assessments within each 3-4-week unit.

Schedule of Lectures and Course Progress (*Suggested Study Schedule*)

It is a self-paced online course. Course materials will be released in unit blocks. These will be accessible the night before the start of a new unit. Students are responsible for accessing course documents, and taking quizzes and exams in the Blackboard system. However, to help students complete the course requirements and meet the course objectives, the study schedule is suggested in the below table. Please note that this schedule is tentative and may change at the discretion of the instructor.

Wk	Opening Day	Unit	Topic	Book Chapter	Assessment	
					Quiz	Exam
1	August 23		Introduction and Orientation	-	Syllabus Quiz	-
2	August 30	1. History & Basics of DNA Typing	Overview and History of DNA Typing	1	1	Exam 1
3	Sept 6		Basics of DNA Biology and Genetics	2	2	
4	Sept 13		Historical Methods	3	3	
5	Sept 20	2. DNA Typing Process: From Sample Collection to PCR Amplification	Sample Collection, Storage, and Characterization	4	4	Exam 2
6	Sept 27		DNA Extraction	5	5	
7	Oct 4		DNA Quantitation	6	6	
8	Oct 11		DNA Amplification (The Polymerase Chain Reaction)	7	7	
9	Oct 18	3. Short Tandem Repeats (STRs)	Short Tandem Repeat Markers	8	8	Exam 3
10	Oct 25		Fundamentals of DNA Separation and Detection	9	9	
11	Nov 1		Genotyping and Data Interpretation, I	10	-	
12	Nov 8		Genotyping and Data Interpretation, II	10	10	
13	Nov 15	4. DNA Databases & Lineage Markers	DNA Databases	12	11	Exam 4
14	Nov 22		Y Chromosome	16	-	
15	Nov 29		mtDNA Testing	16	12	
16	**Dec 4**	**Final Exam**				

Grading Policy

There will be 13 on-line quizzes (15%), 4 Exams (60%), and a Final Exam (25%) in this course.

Assessment	Content Examined	Due Date (midnight)	Points	Percentage
On-line Quizzes	Week 1 - Introduction	Syllabus Quiz: Aug 30	10	1%
	On assigned Chapters	Quiz 1-3: Sept 20	30	14%
		Quiz 4-7: Oct 18	40	
		Quiz 8-10: Nov 15	30	
		Quiz 11-12: Dec 3	20	
Exam 1	Chapter 1, 2, 3 (Unit 1)	Sept 20	100	15%
Exam 2	Chapter 4, 5, 6, 7 (Unit 2)	Oct 18	100	15%
Exam 3	Chapter 8, 9 10 (Unit 3)	Nov 15	100	15%
Exam 4	Chapter 12, 16 (Unit 4)	Dec 3	100	15%
Final Exam	Comprehensive	Dec 6	100	25%
			Total	100%

NB. All quizzes within a unit will be made available when each unit begins. All quizzes MUST be completed by the due date listed above (i.e. at the completion of each unit).

Grade scale:

90 – 100% A

80 – 89% B

70 – 79% C

60 – 69% D

Below 60% F

Make-up Exams

Quizzes and Exams are timed and can only be taken ONCE. NO MAKE-UP EXAMS.

Blackboard

The course Home Page for FORS 4320 can be reached via: http://distance.shsu.edu/. Login to Blackboard system with your university username and password. Since announcements and handouts will be posted on the course home page, it is your responsibility to check the course home page regularly to keep up with the course. You are also responsible to take quizzes and exams on time from the Blackboard system.

Academic Honesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. For a complete listing of the university policy, visit the website, http://www.shsu.edu/administrative/faculty/sectionb.html#dishonesty

Student Academic Polices

All academic polices concerning Attendance, Academic Honesty, Disabled Student and Services for Disabled Students, and Absences on Religious Holy days may be found at the website, http://www.shsu.edu/dept/academic-affairs/aps/aps-curriculum.html

Telephones and Text Messagers in Academic Classrooms and Facilities

For more information about the use of telephones and text messagers in academic classrooms and facilities, visit the website, http://www.shsu.edu/dept/academic-affairs/aps/aps-curriculum.html.