CHS 4533C Forensic Biochemistry(CRN 82738)

Fall 2017

Florida Gulf Coast University

College of Arts and Sciences

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Credits: 3 credit hours

Office hrs: Tue-Thursday 1:00-3:00pm

PREREQUISITES FOR THE COURSE

CHM 2210C, CHM 2210/L with a grade of C or higher.

TEXTBOOKS

Advanced Topics in Forensic DNA Typing (John M Butler) Academic Press

GENERAL COURSE INFORMATION

Purpose: Forensic chemistry concentrates on the study of chemistry of DNA typing. The historical perspective of DNA typing will be discussed. Papers related to these topics will be discussed. The course will also include demonstrations and projects based on the topics

Florida Gulf Coast University, in accordance with the Americans with Disabilities Act and the University's guiding principles, will provide classroom and academic accommodations to students with documented disabilities. If you need to request an accommodation in this class due to a disability, or you suspect that your academic performance is affected by a disability, please see me or contact the Office of Adaptive Services. The Office of Adaptive Services is located in Howard Hall, room 137. The phone number is 590-7956 or TTY 590-7930

Student Observance of Religious Holidays. For further information please read the General Counsel Policies at*http://www.fgcu.edu/generalcounsel/policies-view.asp*

Center for Academic Achievement Syllabus Statement:

The Center for Academic Achievement (CAA) offers various academic success programs to assist you in reaching your academic goals in a student-centered learning environment. CAA services are for all FGCU students and include Academic Coaching, Tutoring, Supplemental Instruction (SI), and Success Workshops.

We invite you to visit www.fgcu.edu/caa to make a tutoring and or coaching appointment, and get schedules for supplemental instruction and workshops. You also can stop by our office in Library 103 to pick up a schedule in person and make coaching appointments. We also have walk-in coaching sessions on Friday! Follow us @fgcu_CAA.

Learning Outcomes and Course Objectives

The development of critical thinking and problem solving skills is emphasized in this course. The following outlines what the student should know and be able to do upon completion of the course.

DNA typing:

1. State the Historical aspects of DNA typing.
2. Provide details about Sample collection, storage and characterization of DNA.
3. Know the methods to extract DNA and methods in quantitation. Be able to extract DNA from various substrates
4. Know how to amplify DNA using multiplex PCR and to analyze the data.
5. Know the challenges of DNA detection including inhibition, degradation and low copy number.
6. Know the latest techniques in DNA typing as well as other loci and Y and mitochondrial DNA

REQUIREMENTS FOR THE STUDENTS

Students are expected to:

- allot sufficient time to study course material
- read chapters and labs prior to a class lecture
- complete all homework and participate in class problem-solving sessions
- take quizzes and exams
- No electronic devices (computers, cell phones etc) are allowed in class, please turn off all cell phones before you come to class. If they ring, you will be asked to leave.

ATTENDANCE POLICY

Attendance is mandatory in lecture.

GRADING POLICY

Exams 1-2	60 % total
Quizzes	10 %
Lab grade	10%
Mini Project and presentation	20%

There will be no make-up quizzes or exams. The lowest quiz grade will be dropped. Documentation of hardship must be provided to make-up an exam (ex. papers from hospital). Make-up exams must be scheduled within a day of the actual exam and the exam grade will be lowered by 10% per late day.

Final grade correspond to the following percentage ranges:

90-100	**A**
80-89	**B**
70-79	**C**
60-69	**D**

<60	**F**

Appealing exam Grades

If you believe an error has been made in the grading of an exam:

1. Please check the exam key before asking for a re-grade.
2. Misunderstanding question instructions is not acceptable grounds for appealing (ask for clarification during the exam).
3. Illegible or poorly organized answers will not be reconsidered. Answers must be neatly and logically written in the space provided on an exam. The answer will be marked wrong if both correct and incorrect information is written.
4. The exam must be submitted for re-grading by the next class period.
5. If a test is turned in for re-grading the entire test will be looked at, not just the question under discussion. This is done in order to ensure that errors in favor of the student were not overlooked. (**Note!** a re-graded test may result in fewer points being awarded after more careful scrutiny).

Honor Code: Any incident of cheating on a test/quiz or plagiarizing laboratory reports will result in a “0” grade for that assignment and possibly an “F” grade for the entire course. In addition, you can be referred to the Judicial Department of the Dean of Students' Office for violation of the Student Code of Conduct.

CLASS SCHEDULE: T-TH (3:30-5:45) WH244

Schedule is tentative and may be adjusted, as needed.

Date	Topics	Chapter
8/22	Syllabus, Introduction to forensic biochemistry	1

8/24	Sample Collection, Storage and Characterization	1
8/29	Sample Collection, Storage and Characterization **(Learning how to use a Pipette (pre lab)**	1
8/31	DNA extraction methods **(Blood groups lab)**	2
9/5	DNA quantitation **Presumptive tests lab**	3
9/7	DNA quantitation	3
9/12	Hurricane Irma	
9/14	Hurricane Irma	
9/19	Hurricane Irma	
9/21	**PCR amplification**	**4**
9/26	**PCR amplification**	4

	Lab on extraction of DNA from various substrates	
9/28	Quiz 1, STR Loci and kits	5
10/3	STR loci and kits **Self swab lab and extraction of DNA**	5
10/10	**Quiz 2, Capillary electrophoresis**	6
10/12	**Capillary electrophoresis** **Lab on DNA quantitation**	6
10/17	Exam I	Ch 1-6
10/19	**Missing Persons, Disaster Victim Identification** Mini project	9
10/24	**Missing Persons, Disaster Victim Identification** Mini project Paper discussions	9
10/26 10/31	**Quiz 3, Missing Persons, Disaster Victim Identification** **Degraded DNA and LCN**	10, 11
11-2	Degraded DNA and LCN Mini Project lab	

11-3	LAST DAY TO WITHDRAW	
11-14	SNPs Mini Project lab	13, 14
11-16 11-21 11-28 11-30	Y and Mito DNA testing FDLE guest speaker X chromosome and Non human DNA, Project New Technologies, Project lab	13, 14, 15, 16 17
12-5 12-7	Project Presentations **Project Presentations, review**	
12/12	FINAL EXAM	9-17