Chaminade University
OF HONOLULU

FS 680A/AL – FORENSIC CHEMISTRY
SPRING 2012

Instructor: Dr. Shari Forbes
Contact: shari.forbes@chaminade.edu
Office: HENR 2
Office Hours: Open Door Policy

Lecture: MWF; 10:30-11:20am Lec
M; 14:30-17:20 Lab

Room: H 221 (Lec) HL-7 (Lab)

COURSE OBJECTIVE:

Forensic chemistry introduces the application of analytical chemistry to forensic science. It is distinguished from other types of analytical chemistry by the legal context in which the work is conducted, the types of samples and matrices, and the extensive use of instrumentation. The course will review fundamental material and address chemical concepts from a forensic perspective, including statistics, sample preparation, quantitative standards, calibration, and quality control. The course also focuses on microscopic, spectroscopic and separation techniques and their applications to forensic science, including: drug chemistry and drug analysis, ink and paper analysis, paint characterization, fire and explosives investigation, detection of firearms discharge residue, and the forensic analysis of fibres and polymers.

COURSE LEARNING OUTCOMES:

At the end of this course, the student will be able to demonstrate:

1. an understanding of the importance of sample preparation and quantitative standards in forensic chemistry;
2. an understanding of the need for quality assurance and quality control in forensic chemistry laboratories;
3. an understanding of the different **microscopic, spectroscopic, and separation** techniques involved in the analysis of forensic evidence;
4. an understanding of the documentation required for the submission of forensic chemistry reports for trial purposes.

TEXT:

Bell, S. (2006) Forensic Chemistry. New Jersey: Pearson Prentice Hall ISBN: 0-13-147835-4

ATTENDANCE:

Attendance is mandatory and repeated absences will be reported to counseling and will result in possible removal from the course, as per the CUH Student Handbook. Absences may be excused if documentation is provided, or if approved prior to the class period. Repeated tardiness and/or absences will be reflected in the "participation" portion of your grade.

MUSIC DEVICES AND CELL PHONES:

Cell phones will either be off or on silent while in the classroom. If I see your phone out during the lecture period, you will receive a zero for the participation portion of your grade. If there is a legitimate reason for you to have your phone on, please see me prior to class. Unless specifically permitted by your instructor, use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade, as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class.

COMPUTERS:

The use of computers in this class is encouraged, provided they are used for the class. Using computers for other purposes such as other class work or surfing the Internet is not acceptable, and will consequently be reflected in the "participation" portion of your grade.

ADA ACCOMODATIONS:

Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from CUH Counseling Center by the end of the third week of classes. Failure to provide written documentation will prevent your instructor from making necessary accommodations. Please refer any questions to the Dean of Students and review procedures at www.chaminade.edu/student_life/sss/counseling_services.php

GRADES:

Attendance	15%
Mid-term Exam	20%
Scientific Journal Article	25%
Presentation	10%
Final Exam	30%

The grading scale is as follows:

90% +	=	A
80-89%	=	B
70-79%	=	C
< 69%	=	F

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SCHEDULE:

Week Beginning	Mon LECTURE	Wed LECTURE	Fri LECTURE
January 16th	No Class	Intro to Course	Statistics, Sampling and Data Quality
January 23	Sample Preparation & TLC	Sample Preparation & TLC	Microscopes and Chemical Microscopy
January 30th	Light Theory and Forensic Light Sources	Spectroscopy & Mass Spectrometry	Spectroscopy & Mass Spectrometry
February 6th	Intro to Chromatography	Intro to Chromatography	Gas Chromatography
February 13th	Liquid Chromatography	Liquid Chromatography	Capillary Electrophoresis
February 20th	No class – AAFS Meeting	No class – AAFS Meeting	No class – AAFS Meeting
February 27th	Review	Midterm Exam	Writing skills and Referencing Lecture
March 5th	Overview of Drug Chemistry	Forensic Drug Analysis I	Forensic Drug Analysis I
March 12th	Forensic Drug Analysis II	Forensic Drug Analysis II	Chemistry of Combustion
March 19th	Forensic Analysis of Combustion Evidence	Forensic Analysis of Combustion Evidence	Fire Chemistry Research
March 26th	Spring Break	Spring Break	Spring Break
April 2nd	Chemistry of Colorants	Forensic Analysis of Inks and Paints	Good Friday – No Class
April 9th	Document Examination	Chemistry of Polymers	Forensic Analysis of Papers, Fibers and Polymers
April 16th	Forensic Analysis of Glass Evidence	Forensic Analysis of Soil Evidence	Decomposition Chemistry
April 23rd	Decomposition Chemistry	Quality Assurance in Forensic Chemistry	Legal Aspects of Forensic Chemistry
April 30th	Legal Aspects of Forensic Chemistry	Presentations	Presentations
May 7th	Review	No class	No class