

**University of Hawai'i-West O'ahu**  
**Course Syllabus**

Chem 100/100L: Chemistry in Society  
Fall 2012

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**Office Hours:** before and after class and by appointment.

### **Course Description**

*This course and its laboratory will introduce basic principles of chemistry and their impact on modern society and environment. It is designed for non-science majors and therefore presented from a simplified chemical viewpoint. Emphasis will be on everyday phenomena and local Hawaiian issues. However, examples from other places and other sciences (environment science and forensics, etc.) will add depth of the understanding of scientific issues at global context.*

***Pre-requisites:** Placement in Eng 100 or concurrent enrollment in Eng 22.*

### **Learning objectives:**

*At the end of this course, students will be able to:*

- *Explain to others the chemical basis for environmental phenomena such as pure water, clean air, and healthy styles.*
- *Discuss the scientific merits of a particular point of view on environmental and forensic issues.*
- *Follow the rules and regulations of safety in laboratory.*
- *Utilize the scientific inquiry and produce a sound lab report.*

### **General Plan for the Course.**

A reading homework will be given every day on a particular section of the textbook. This will usually relate to a case study that illustrates the role of chemistry in forensic or environmental sciences. The next day, the homework will be discussed in groups of two. Each student will read what he/she has written. The other student in the group will give the feedback on his/her paper in relation to the relevance, clarity and depth. A quiz may be given at the end of the discussion. The matter will be then analyzed by the whole class to draw conclusions.

Also students will be asked from time to time to bring samples from their environment for analyses in lab. This activity will contribute to the understanding of their community and ecosystem.

## Requirements.

1. Students must complete the following:

Semester Exams

Final exam

Quizzes

Lab reports

Daily homework

2. Class participation in this class is essential. Students will be required to participate in discussion groups and go to the blackboard for answering questions.
3. Students are expected to attend class regularly and punctually. No unexcused absences are allowed.
4. No food, drinks, or gum chewing is allowed. Cell phones, pagers, and beepers must be turned off.
5. Students must wear goggles all of the times during laboratory work.

**Grading Policy.** The grading will be based on a total point basis. Students will get the same grade for lecture and laboratory as both parts are intertwined. There is no curve. The performance of other students has no direct impact on your individual grade. Lab grade will be given only if a student has attended at least 10 lab experiments.

The daily homework and attendance: 100 points.

The quizzes: 100 points.

The laboratory work and lab reports: 200 points

Semester exams: 300 points

The final examination: 300 points.

Total 1000 points

The final grade will be calculated from the following breakdown:

grade	A	B	C	D	F
score	1000-801	800-651	650-501	500- 401	400 and less

**Textbook:** *Investigating Chemistry*. Matthew E. Johll. 2<sup>nd</sup> edition, Freeman and Company. ISBN: 0-7167-6433-4

**Lab manual:** handouts.

### Tentative Schedule.

Week #	Chapter	Exam	Lab
1	Introduction to forensic chemistry		No lab
2	Evidence collection and preservation		Safety
3	Evidence collection and preservation	Exam I	Acids and bases
4	Atomic clues		Water, the source of life
5	Chemical evidence		Cold light
6	Properties of solutions I	Exam II	Chemical pollution
7	Properties of solutions II		Chlorine chemistry
8	Drug chemistry		Iodine chemistry
9	Chemistry of addiction	Exam III	Crystals and solutions
10	Chemistry of explosions		Detective realm in the elements.
11	Estimating time of death		Chromatography-racing colors
12	Air pollution		
13	Ozone hole		Electricity from a test tube
14	Review		Clock reactions

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Review

Final Exam

Fuel cell car

16.

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