University of Hawai‘i-West O’ahu
Course Syllabus

Chem 100/100L: Chemistry in Society                 Joseph Bariyanga
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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:

<table>
<thead>
<tr>
<th>grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>score</td>
<td>1000-801</td>
<td>800-651</td>
<td>650-501</td>
<td>500-401</td>
<td>400 and less</td>
</tr>
</tbody>
</table>


Lab manual: handouts.
### Tentative Schedule

<table>
<thead>
<tr>
<th>Week #</th>
<th>Chapter</th>
<th>Exam</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to forensic chemistry</td>
<td></td>
<td>No lab</td>
</tr>
<tr>
<td>2</td>
<td>Evidence collection and preservation</td>
<td></td>
<td>Safety</td>
</tr>
<tr>
<td>3</td>
<td>Evidence collection and preservation</td>
<td>Exam I</td>
<td>Acids and bases</td>
</tr>
<tr>
<td>4</td>
<td>Atomic clues</td>
<td></td>
<td>Water, the source of life</td>
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<tr>
<td>5</td>
<td>Chemical evidence</td>
<td></td>
<td>Cold light</td>
</tr>
<tr>
<td>6</td>
<td>Properties of solutions I</td>
<td>Exam II</td>
<td>Chemical pollution</td>
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<tr>
<td>7</td>
<td>Properties of solutions II</td>
<td></td>
<td>Chlorine chemistry</td>
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<tr>
<td>8</td>
<td>Drug chemistry</td>
<td></td>
<td>Iodine chemistry</td>
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<tr>
<td>9</td>
<td>Chemistry of addiction</td>
<td>Exam III</td>
<td>Crystals and solutions</td>
</tr>
<tr>
<td>10</td>
<td>Chemistry of explosions</td>
<td></td>
<td>Detective realm in the elements.</td>
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<tr>
<td>11</td>
<td>Estimating time of death</td>
<td></td>
<td>Chromatography-racing colors</td>
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<tr>
<td>12</td>
<td>Air pollution</td>
<td></td>
<td>Electricity from a test tube</td>
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<tr>
<td>13</td>
<td>Ozone hole</td>
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<tr>
<td>14</td>
<td>Review</td>
<td></td>
<td>Clock reactions</td>
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<tr>
<td></td>
<td>Review</td>
<td>Fuel cell car</td>
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<tr>
<td>15</td>
<td>Final Exam</td>
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