Master Syllabus: CHM 105

1. **Course Information**
   - **College:** College of Science and Mathematics
   - **Department:** Chemistry
   - **Course Title:** Chemistry of Our World: Living Things
   - **Course Designation and Number:** CHM 105
   - **GE Area(s):** Area V – Natural Sciences

   **Writing Intensive:** X Yes   No

   **For WI Courses:** ____ All sections   X Selected Sections are WI.

   **Method(s) of Instruction:**
   - X Lecture
   - X Discussion
   - ____ Web-enhanced
   - ____ Web-only
   - X Other: Small group activities. Working together is encouraged, except on quizzes and the final.

   **Includes Lab:** ____ No   X Yes
   - Three hours lecture, two hours lab.

   **Prerequisites:** NONE

2. **Objectives**

   **GE Program Objectives:**
   - Sharpen critical thinking, problem solving and communication skills.
   - Learn about the aesthetic, ethical, moral, social, and cultural dimensions of human experience needed for participation in the human community.
   - Increase knowledge and understanding of the past, of the world in which we live, and of how both past and present have an impact on the future.

   **GE Area Five Objectives:**
   - Area Five courses emphasize scientific inquiry as a way to discover the natural world, and they explore fundamental issues of science and technology in human society.

   **Course Objectives and GE Learning Outcomes:**
   - Chemical principles applied to: examination of the principles of covalent bonding, structures, and reactions of molecules important to living things, with attention to the technological, regulatory, and social complexities of related problems. Topics include food, drugs, and poisons.
   - Understand the experimental basis of scientific inquiry
   - Understand the importance of model building for understanding the natural world
   - Understand the theoretical, practical, creative and cultural dimensions of scientific inquiry
   - Discuss some of the fundamental theories underlying modern science
   - Understand the dynamic interaction between society and the scientific enterprise
   - Recognize appropriate ethical uses of knowledge in the natural sciences
For WI Courses: WAC Objectives

To improve students’ writing proficiency – their ability to develop ideas and transmit information for an appropriate audience in an organized, coherent fashion while writing with appropriate style and correct grammar, usage, punctuation and spelling.

To encourage students to use writing as a learning tool to explore and structure ideas, to articulate thoughts and questions, and to discover what they know and do not know, thereby empowering students to use writing as a tool of discovery, self-discipline, and thought.

To demonstrate for students the ways in which writing is integral to all disciplines, essential to the learning and conveying of knowledge in all fields.

Written laboratory discussion that answers the following questions should be included with each laboratory report.

1. What did you observe in this laboratory?
2. How do you interpret your observations? (What do they mean? Did you learn something new?)
3. Is there something you did not understand about what you did in the lab?
4. What else might you have done in the lab to clarify what you did not understand?

3. Suggested Course Materials

Text:
(2) Grossie and Burns, Eds., Laboratory Guide for Chemistry (2001)

4. Suggested Methods of Evaluation

Lecture:
4 - 5 exams and 2 – 5 homework assignments
Comprehensive final exam

Laboratory:
8 lab reports

5. Grading Policy

All GE courses are graded A-F
WI component is graded Pass/Unsatisfactory.

6. Suggested Weekly Course Outline Including Typical Assignments

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2</td>
<td>Organic Chemistry (Ch. 9)</td>
<td>Laboratory Safety, Molecular Models: Organic Compounds</td>
</tr>
<tr>
<td>3 - 4</td>
<td>Biochemistry (Ch.15)</td>
<td>Analysis of Monofunctional Organic Compounds</td>
</tr>
<tr>
<td>5 - 6</td>
<td>Food (Ch. 16)</td>
<td>Nature’s Catalysis: Enzymes</td>
</tr>
<tr>
<td>7 - 8</td>
<td>Drugs (Ch. 19)</td>
<td>Amino Acids &amp; Proteins</td>
</tr>
<tr>
<td>9 - 10</td>
<td>Poisons (Ch. 20)</td>
<td>Chromatography of Kool-Aid</td>
</tr>
</tbody>
</table>

LABORATORY SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Laboratory Safety, Molecular Models: Organic Compounds</td>
</tr>
<tr>
<td>3</td>
<td>Analysis of Monofunctional Organic Compounds</td>
</tr>
<tr>
<td>4</td>
<td>Nature’s Catalysis: Enzymes</td>
</tr>
<tr>
<td>5</td>
<td>Amino Acids &amp; Proteins</td>
</tr>
<tr>
<td>6</td>
<td>Chromatography of Kool-Aid</td>
</tr>
<tr>
<td>7</td>
<td>Vitamin C Determination</td>
</tr>
<tr>
<td>8</td>
<td>Synthesis of Aspirin</td>
</tr>
<tr>
<td>9</td>
<td>Extraction of Caffeine from Beverages</td>
</tr>
<tr>
<td>10</td>
<td>Extraction of Caffeine from Beverages (Continued)</td>
</tr>
</tbody>
</table>
7. **Other**

Syllabus distributed to students should employ the format approved by UCAP and must include:
- Instructor name, office hours, and contact information
- Office of Disability Services information
- Information on how grades will be determined
- Attendance policy