Chemical Research CHEM 4950
The Summer Institute Course Syllabus 2022

Instructors: Dr. Maged Henary & Dr. Jianmei Cui
E-mail: mhenary1@gsu.edu or jcui@gsu.edu
Time: 9:00 am – 11:20 am M - F (July 7th - July 29th)
Office Hours: Email for appointment

Grading:
*Final Exam: 100 points
*Oral Presentation: 50 points
Quizzes, homework, notebook, attendance: 50 points
Total 200 points

A+: 96%; A: 92%; A-: 89%; B+: 86%; B: 82%; B-: 78%; C+: 76%; C: 72%; C-: 68%; D: 64%

Course Objective:
This course is designed to introduce international students to various chemistry projects including stereoisomerism, natural product extraction, simple distillation, recrystallization, and techniques and tools that are fundamental in chemistry labs. Students will learn how to identify chemical structure characteristics by using IR, melting point apparatuses and literature search. Students will learn chemistry lab techniques and gain hands-on lab experience, as well as learn to comply with lab safety protocols. Students will also gain the experience of oral presentation on lab techniques learned through the course and how to conduct a chemical structure literature search.

Course Attendance:
Attendance is essential for success. The Office of International Initiatives will be notified of any absences. Please talk with the instructor if you are not able to attend class.

Academic Honesty & Plagiarism:
You must submit your own work and conduct yourself in an honest manner. One aspect of academic honesty is plagiarism. Plagiarism can include one or more of the following situations:
   a. Copying information from another student’s work or from other materials and submitting that work as your own.
   b. Using other people’s ideas, words, or data without properly documenting or acknowledging the source.
   c. Overusing sources without incorporating your own ideas.
### Tentative schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture &amp;Lab #</th>
<th>Tentative Schedule of Lecture/Lab</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/7/22</td>
<td>1/Thurs</td>
<td>Orientation and Project Overview</td>
<td>Drs. Henary/Cui</td>
</tr>
<tr>
<td>7/8/21</td>
<td>2/Fri</td>
<td>Introduction to Carbonyl Chemistry/IR</td>
<td>Dr. Henary</td>
</tr>
<tr>
<td>7/11/21</td>
<td>3/Mon</td>
<td>Recrystallization of Acid</td>
<td>Dr. Henary</td>
</tr>
<tr>
<td>7/12/21</td>
<td>4/Tues</td>
<td>Stereoisomerism/Identification of Acid</td>
<td>Dr. Henary</td>
</tr>
<tr>
<td>7/13/21</td>
<td>5/ Wed</td>
<td>Synthesis of Dibromide from Chalcone</td>
<td>Dr. Henary</td>
</tr>
<tr>
<td>7/14/21</td>
<td>6/ Thurs</td>
<td>Identification of the Chalcone Dibromide</td>
<td>Dr. Henary</td>
</tr>
<tr>
<td>7/15/21</td>
<td>7/Fri</td>
<td>Extraction Coffeine from Tea Powder</td>
<td>Dr. Cui</td>
</tr>
<tr>
<td>7/18/21</td>
<td>8/Mon</td>
<td>Mini Break</td>
<td></td>
</tr>
<tr>
<td>7/19/21</td>
<td>9/Tues</td>
<td>Purification of Coffeine - Sublimation</td>
<td>Dr. Cui</td>
</tr>
<tr>
<td>7/20/21</td>
<td>10/Wed</td>
<td>Identification of Coffeine - IR, MP, Reference</td>
<td>Dr. Cui</td>
</tr>
<tr>
<td>7/21/21</td>
<td>11/Thurs</td>
<td>Simple Distillation of Liquid Chemical</td>
<td>Dr. Cui</td>
</tr>
<tr>
<td>7/22/21</td>
<td>12/Fri</td>
<td>PPT - Kelsey Jordan (Science Librarian)</td>
<td>Dr. Henary</td>
</tr>
<tr>
<td>7/25/21</td>
<td>13/Mon</td>
<td>Field Trip</td>
<td>Dr. Henary</td>
</tr>
<tr>
<td>7/26/21</td>
<td>14/Tues</td>
<td>Identification of liquid Chemical</td>
<td>Dr. Cui</td>
</tr>
<tr>
<td>7/27/21</td>
<td>15/Wed</td>
<td>Miscellaneous topics (Final Topic/Presentation Discussion)</td>
<td>Dr. Cui</td>
</tr>
<tr>
<td>7/28/21</td>
<td>16/Thurs</td>
<td>Students Presentation (30 min/student)</td>
<td>Drs. Henary/Cui</td>
</tr>
<tr>
<td>7/29/21</td>
<td>17/Fri</td>
<td>FINAL EXAM (9:00 am -10:30 am)</td>
<td>Dr. Cui</td>
</tr>
</tbody>
</table>