**YC Chemistry**

1. Please type or paste your program’s/major’s mission statement into the space below.

The mission of the undergraduate Chemistry program is to prepare students for entry into graduate and professional programs and to become active and engaged members of the chemical community, by providing the students with traditional chemical education integrated with modern research.

1. Please list below each of your program’s/major’s goals and corresponding student learning objectives (SLOs).

|  |  |
| --- | --- |
| **Program/Major Goals** | **SLOs** |
| 1. Students will be able to understand chemical principles in order to explain the phenomena of the natural world | a. be able to identify the 3-D structures of molecules and relate this to their function |
| b. apply the principles of thermodynamics and kinetics to understand chemical reactions |
| c. apply the principles of spectroscopy for qualitative and quantitative analysis |
| d. apply chemical principles to solve complex problems |
| 2. Students will be able to apply experimental techniques and chemical principles to investigate and solve problems | a. be able to synthesize and characterize molecules |
| b. choose appropriate analytical and/or instrumental methods for quantitative analysis |
| c. learn laboratory safety skills, including the proper handling and disposal of chemicals in compliance with safety regulations |
| 3. Students will be able to effectively communicate technical and scientific information both orally and in writing | a. present information in a clear and organized manner |
| b. write concise and well organized reports in a scientifically appropriate style |
| c. Use appropriate technology in written and oral presentations |
| 4. Students will be able to generate research ideas and design theoretical and experimental methods to test these ideas with faculty guidance | a. Formulate testable hypothesis |
| b. analyze and interpret results objectively |
| c. make scientifically sound choices among alternate explanations |

1. Please complete the **Curriculum Map Table** below by listing each SLO and each required course/learning experience (e.g., practicum, seminar, lab, fieldwork) for students in your program/major, and then by placing an “X” in each cell for each course that targets a particular programmatic SLO.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Required Chemistry courses   |  | | --- | |  |  |  | | --- | |  | | SLOs | | | | | | | | | | | | |
| **1a** | **1b** | **1c** | **1d** | **2a** | **2b** | **2c** | **3a** | **3b** | **3c** | **4a** | **4b** | **4c** |
| General Chemistry I | X |  |  | X |  |  |  |  |  |  |  |  |  |
| General Chemistry I | X | X |  | X |  |  |  |  |  |  |  |  |  |
| General Chemistry Lab |  |  | X |  |  | X | X | X | X |  |  | X |  |
| Honors General Chemistry I | X |  |  | X |  |  |  |  |  |  |  |  |  |
| Honors General Chemistry I | X | X |  | X |  |  |  |  |  |  |  |  |  |
| Intro to Chemical Research |  |  |  |  |  |  |  | X | X |  |  |  |  |
| Organic Chemistry I | X | X |  | X | X |  |  |  |  |  |  |  |  |
| Organic Chemistry I | X |  |  | X | X |  |  |  |  |  |  |  |  |
| Organic Chemistry Lab |  |  | X |  | X |  | X | X | X |  |  | X |  |
| Chemical Analysis |  | X | X |  |  | X | X | X | X |  |  | X |  |
| Advanced Chemistry Lab |  |  | X | X | X | X | X | X | X |  |  | X | X |
| Physical Chemistry I |  | X |  | X |  |  |  |  |  |  |  | X | X |
| Physical Chemistry II |  |  | X | X |  |  |  |  |  |  |  | X | X |
| Seminar in Chemistry |  |  |  |  |  |  |  |  |  | X |  |  |  |
| Forensic Chemistry |  |  |  |  |  |  |  |  |  | X |  |  |  |
| Biochemistry | X | X | X |  |  |  |  |  |  |  |  |  |  |
| Chemistry of Metals in Biology | X | X |  |  | X |  | X |  |  | X |  |  |  |
| Organometallics Chemistry | X | X |  |  | X |  |  |  |  | X |  |  |  |
| Inorganic and structural Chemistry | X |  | X |  |  |  |  |  |  | X |  |  |  |
| Molecular structure and dynamics | X |  |  |  |  |  |  |  |  | X |  |  |  |
| Research in Chemistry |  |  |  | X |  | X | X | X | X | X | X | X | X |