Outcome Assessment Timeline

Academic Programs

**Department of Chemistry**

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| **APR 4-Year Cycle** **SLO 3-Year Cycle** | **2017-2021** |
| **Course ID** | **Course-Level Student Learning Outcome (CSLO)** | **Measure/Collect Data** | **Discuss & Plan** |
| CHEM100 - INTRODUCTION TO GENERAL CHEMISTRY | Clearly explain qualitative chemical concepts and trends. Describe, explain, and model chemical and physical processes at the molecular level in order to explain macroscopic properties. (CHEM100; ISLO2) | Fall 2021 | Fall 2022 |
| Perform laboratory techniques correctly using appropriate safety procedures. Analyze the results of laboratory experiments, evaluate sources of error, synthesize this information, and express it clearly in written laboratory reports. (CHEM100; ISLO5) | Fall 2021 | Fall 2022 |
| Solve quantitative chemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem solving process. Check results to make sure they are physically reasonable. (CHEM100; ISLO6) | Fall 2021 | Fall 2022 |
| CHEM110 - ELEMENTARY ORGANIC AND BIOLOGICAL CHEMISTRY | Perform laboratory experiments and analyze the results. (CHEM110; ISLO6) | Spring 2022 | Opening Day Fall 2022 |
| Perform hypothetical-deductive reasoning; that is, given a particular situation, analyze relevant knowledge of principles and constraints to synthesize plausible solution(s). (CHEM 110; ISLO5) | Spring 2022 | Opening Day Fall 2022 |
| CHEM151 - INTRODUCTION TO FERMENTATION SCIENCE | Upon completion of this course the student will be able to integrate information from various sources to generate a cohesive thesis. (CHEM 151:ISLO11) | Spring 2022 | Opening Day Fall 2022 |
| Upon completion of this course the student will be able to research a topic and clearly communicate it to others. (CHEM 151; ISLO2) |
| CHEM151L - INTRODUCTION TO FERMENTATION SCIENCE, BREWING LAB | Students will cooperatively work in groups to brew beer. (CHEM 151L; ISLO9) | Spring 2022 | Fall 2022 |
| Students will research recipes with the objective of identifying a brew style to be brewed in the class. The student will present to the class in an oral presentation. Out of these presentations the class will select the recipe to be brewed. (CHEM 151L; ISLO7) | Spring 2022 | Fall 2022 |
| CHEM160 - INTRODUCTORY BIOCHEMISTRY | Clearly explain qualitative biochemical concepts and trends. Describe, explain, and model biochemical, chemical and physical processes at the molecular level. (CHEM160; ISLO2) | Spring 2022 | Opening Day Fall 2022 |
| Learn about biochemical laboratory techniques and analyze the results of biochemical experiments. (CHEM160; ISLO5) | Spring 2022 | Opening Day Fall 2022 |
| Solve quantitative biochemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem-solving process. Check results to make sure they are physically reasonable. (CHEM160; ISLO6) | Spring 2022 | Opening Day Fall 2022 |
| CHEM170 - PREPARATION FOR GENERAL CHEMISTRY | Clearly explain qualitative chemical concepts and trends. Describe, explain, and model chemical and physical processes at the molecular level in order to explain macroscopic properties. (CHEM170;ISLO2) | Spring 2022 | Opening Day Fall 2022 |
| Perform laboratory techniques correctly using appropriate safety procedures. Analyze the results of laboratory experiments, evaluate sources of error, synthesize this information, and express it clearly in written laboratory reports. (CHEM170;ISLO5) | Spring 2022 | Opening Day Fall 2022 |
| Solve quantitative chemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem solving process. Check results to make sure they are physically reasonable. (CHEM170; ISLO6) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| CHEM200 - GENERAL CHEMISTRY I | Clearly explain qualitative chemical concepts and trends. Describe, explain, and model chemical and physical processes at the molecular level in order to explain macroscopic properties. (CHEM200: ISLO 2) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| Perform laboratory techniques correctly using appropriate safety procedures. Analyze the results of laboratory experiments, evaluate sources of error, synthesize this information, and express it clearly in written laboratory reports. (CHEM 200; ISLO5) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| Solve quantitative chemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem solving process. Check results to make sure they are physically reasonable. (CHEM200: ISLO 6) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| CHEM210 - GENERAL CHEMISTRY II | Clearly explain qualitative chemical concepts and trends. Describe, explain, and model chemical and physical processes at the molecular level in order to explain macroscopic properties. (CHEM210; ISLO2) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| Perform laboratory techniques correctly using appropriate safety procedures. Analyze the results of laboratory experiments, evaluate sources of error, synthesize this information, and express it clearly in written laboratory reports. (CHEM210; ISLO5) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| Solve quantitative chemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem solving process. Check results to make sure they are physically reasonable. (CHEM210; ISLO6) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| CHEM240 - ORGANIC CHEMISTRY IThis course taught Fall only. | Interpret laboratory results. Given data, students will quantify product yields and purity, which will then be used to plan future experiments. (CHEM 240; ISLO 6) | Spring 2022 | Opening Day2022  |
| Perform hypothetical-deductive reasoning; that is, given a particular situation, analyze relevant knowledge of principles and constraints to synthesize plausible solution(s). (CHEM 240; ISLO5) | Opening Day 2022 |
| CHEM242 - ORGANIC CHEMISTRY IIThis course taught Spring only. | Interpret laboratory results. Given data, students will quantify product yields and purity, which will then be used to plan future experiments. (CHEM 242; ISLO 6) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| Perform hypothetical-deductive reasoning; that is, given a particular situation, analyze relevant knowledge of principles and constraints to synthesize plausible solution(s). (CHEM 242; ISLO 5) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| CHEM250 - ANALYTICAL CHEMISTRY | Interpret laboratory results. Given data, students will quantify product yields and purity, which will then be used to plan future experiments. (CHEM250; ISLO6) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| Perform hypothetical-deductive reasoning; that is, given a particular situation, analyze relevant knowledge of principles and constraints to synthesize plausible solution(s). (CHEM250; ISLO5) | Spring 2022 | Opening Day Opening Day Fall 2022 |
| Perform laboratory techniques correctly using appropriate safety procedures. Analyze the results of laboratory experiments, evaluate sources of error, synthesize this information, and express it clearly in written laboratory reports. (CHEM 250) | Spring 2022 | Opening Day Fall 2022 |
| CHEM299 - INDEPENDENT STUDY | No SLOs defined. | N/A | N/A |
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| **Program** | **Program-Level Student Learning Outcome (PSLO)** | **Measure/Collect Data** | **Discuss & Plan** |
| Chemistry 01530 Associate in Science | Use quantitative reasoning to identify, analyze and solve quantitative problems. | --Spring 2022 | Fall 2022 |

**Directions & Helpful Hints**

In the spaces provided on the timeline, please list course-level and program-level student learning outcomes and when each will be assessed.

 **APR/SLO 3-Year Cycle**: The APR/SLO cycle begins with a compressive program review and ends just before the next comprehensive is due.

 **Course ID:** Insert course designator (e.g., ENGL 114, MATH 60, COMM 103)

 **Course-Level Student Learning Outcome (CSLO):** Write in each CSLO listed on the course outline of record. This can be accessed in CurricUNET.

 **Measure:** Insert the semester(s) each CSLO will be measured, and entered into eLumen.

 **Discuss & Plan:** State the semester the faculty will meet to discuss assessment results and create action plans as needed.

 **Program:** State the program being assessed.

 **Program-Level Student Learning Outcome (PSLO):** State the PSLO(s) for each program listed.

Considerations for Completing the SLO Assessment Timeline:

As per the SCEA contract, “The timeline shall ensure that all SLOs in all sections for each course are to be assessed at least once during the 3-year cycle, with a maximum number of course SLOs per section collected by a Unit member at any one time being three (3)”.

According to the ACCJC Standard II.A.3, “The institution identifies and regularly assesses learning outcomes for courses, programs, certificates. And degrees using established institutional procedures.”