

# Kean University

## Curriculum Map

### Course to Program/Discipline Level Student Learning Outcomes

#### Chemistry Program/Discipline

The Chemistry curriculum prepares students to achieve the expected student learning outcomes identified by the program or discipline. The following table demonstrates how learning activities in specific courses map to these learning outcomes.

Key: I-Introduced

R-Reinforced

M-Mastery

A-Assessment evidence collected

Required Courses	Program/Discipline Student Learning Outcomes							
	SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	SLO7	SLO8
CHEM 1083	I	I	R					
CHEM 1084	R	R	I					
CHEM 2283	I	I	R					
CHEM 2581	I	I	R					
CHEM 2582	R	R	R,					
CHEM 2583	I	R	R					
CHEM 2584	I	R	R					
CHEM 2491	R	R	M,A	I,A				

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CHEM 3284	I	R	R					
CHEM 3381	I	R I	R					
CHEM 3382	I	R	R	R				
CHEM 3383	I	R	A					
CHEM 3384	I	R I	R	R				
CHEM 3581	I	R	R					
CHEM 4481	M	M	M					
CHEM 4483	M	M	M					
CHEM 4908	A	A	A	A				

**Program Student Learning Outcomes (SLOs) – as aligned with KU SLOs derived from the Institutional Mission\* and GE SLOs.\*\* (Data from Direct and Indirect Measures collected each semester in the Capstone Course or a designated, end-of-program course.)**

*Students who graduate with a BA/BS in CHEMISTRY should be able to:*

**SLO1:** Demonstrate a firm understanding of basic chemical principles as demonstrated by the reviewing of the primary literature and dictated by the American Chemical Society. (KU 1, 4) (GE K1, S3, S4, S5, GEV5)

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**Direct Measure:**

- 1) Departmental and ACS scores to show mastery of concepts and consistency throughout the sections.
- 2) CHEM 4908: Research paper scored with rubric to demonstrate achievement of program goals.

**Indirect Measure:** Graduating Senior Survey

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**SLO2:** Analyze multiple sources of data to synthesize scientific conclusions. . (KU 1, 4) (GE K1, S3, S4, S5)

**Direct Measure:**

- 1) CHEM 2491 Term Paper with same basic (applied at a less rigorous level) rubrics as the CHEM 4908
- 2) CHEM 4908: Research paper scored with rubric to demonstrate achievement of program goals.

**Indirect Measure:** Graduating Senior Survey

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**SLO3:** Articulate the importance of chemical issues in the context of it's impact on society. (KU 1, 3, 4) (GE K1, S1,S2, S3, S4, S5)

**Direct Measure:**

- 1) CHEM 3383: The students will have to show real world application in the "Heat Capacity Ratio"
- 2) CHEM 4908: Research paper scored with rubric to demonstrate achievement of program goals.

**Indirect Measure:** Graduating Senior Survey

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**SLO4:** Report and present chemical issues with modern technology in correct scientific format. (KU 1, 4) (GE K3, S1, S2, S5)

**Direct Measure:**

- 1) CHEM 2491: Students will present their research paper to the class using the GE and departmental rubrics.
- 2) CHEM 4908: Presentation of Research thesis scored with rubric to demonstrate achievement of program goals.

**Indirect Measure:** Graduating Senior Survey

**\* KU Student Outcomes: *Kean University graduates should be able to:***

1. Think critically, creatively and globally;
2. Adapt to changing social, economic, and technological environments;
3. Serve as active and contributing members of their communities; and
4. Advance their knowledge in the traditional disciplines (GE) and enhance their skills in professional areas (Prof. pgms)

**General Education Student Learning Outcomes**

*Student Learning Outcomes – Knowledge: Students will demonstrate proficiency in knowledge and content by:*

- (K1) applying the scientific method to understand natural concepts and processes;  
(K2) evaluating major theories and concepts in social sciences;

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(K3) relating historical references to literature; and  
(K4) evaluating major theories and concepts in the fine arts.

*Student Learning Outcomes – Skills: Students will demonstrate the skills necessary to:*

(S1) write to communicate and clarify learning ;  
(S2) communicate effectively through speech;  
(S3) solve problems using quantitative reasoning;  
(S4) think critically about concepts in multiple disciplines; and  
(S5) show information literacy.

## *Student Learning Outcomes - Values*

Students will exhibit a set of values that demonstrates:

(GEV1)personal responsibility

(GEV2)ethical and social responsibility

(GEV3)social and civic engagement

(GEV4)respect for diverse cultures and perspectives

(GEV5) life-long learning