

### BA/BS programs

SLO1: Demonstrate basic knowledge in the following areas of chemistry: analytical, biochemistry, inorganic, organic, and physical.

**Assessment Tool:** ACS standardized exam questions in organic, inorganic, analytical, physical, and biochemistry

SLO2: Organize and communicate scientific information clearly and concisely, both verbally and in writing.

**Assessment Tool:** Oral presentation rubric; written report rubric: Independent project/classroom presentations in Chem 422L, 411, 433, 495, 499.

SLO3: Effectively utilize the scientific literature to research a chemistry topic or to conduct chemical research.

**Assessment Tool:** Written report rubric: Undergraduate research report, Chem 495, 499.

SLO4: Work effectively and safely in a laboratory environment, including the ability to: a) follow experimental chemical procedures; b) maintain a proper laboratory notebook; c) use modern chemical instrumentation; d) perform chemical syntheses; and e) perform qualitative and quantitative chemical analyses.

**Assessment Tool:** Experimental results in Chem 321L(a,c,e), 422L (a,c,e), 411 (a,d); lab notebook reviews in 101L, 321L, 333/334L, and 422L (b). Lab notebook rubric

#### Course Alignment Matrix

	SLO1	SLO2	SLO3	SLO4
Chem 101/L	I			I
Chem 102/L	I			I
Chem 321/L	I			D
Chem 422/L	D	D	D	D
Chem 333/L	I			D
Chem 333R		D		
Chem 334/L	D			D
Chem 334R	D	D		
Chem 351/L	D	D	D	D
Chem 352/L	D	D	D	D
Chem 401/L	D	D		D
Chem 411	M	D	D	M
Chem 461	D	D	D	
Chem 462	M	M	M	
Chem 464	D	M	M	
Chem 465	M	M	M	
Chem 495	M	M	M	M
Chem 499	M	M	M	

I=Introduced; D= Developed and Practiced with Feedback; M=Demonstrated at the Mastery Level Appropriate for Graduation

### MS Program in Chemistry/Biochemistry

SLO1m: Demonstrate basic knowledge in the following areas of chemistry: analytical, biochemistry inorganic, organic and physical.

**Assessment Tool:** *Performance on ACS standardized entrance examinations; comparison to national averages*

SLO2m: Organize and communicate scientific information clearly and concisely, both verbally and in writing.

**Assessment Tool:** *Oral presentation rubric; written report rubric: Literature and thesis seminar and literature and thesis abstract*

SLO3m: Effectively utilize the scientific literature, including the use of modern electronic search & retrieval methods, to research a chemistry topic or to conduct chemical research.

**Assessment Tool:** *Written report rubric: Annual written progress report*

SLO4m: Work effectively and safely in a laboratory environment, including the ability to maintain a proper laboratory notebook and use advanced chemical instrumentation.

**Assessment Tool:** *Lab notebook rubric: Research notebook review*

SLO5m: Demonstrate the ability to work independently in the lab by designing solutions to problems or devising experiments to test hypotheses.

**Assessment Tool:** *Written report rubric: Annual written progress report. Written thesis.*

#### Course Alignment Matrix

	SLO1m	SLO2m	SLO3m	SLO4m	SLO5m
Chem 691	<b>M</b>	<b>M</b>	<b>M</b>		
Chem 692	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>
Chem 696	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>
Chem 698	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>

**I=Introduced; D= Developed and Practiced with Feedback; M=Demonstrated at the Mastery Level Appropriate for Graduation**