PROGRAM ASSESSMENT PLAN ~ 2013-14 through 2018-19

This document only needs to be updated when changes are made.

UNIT	**COLLEGE OF ARTS AND SCIENCES**
Department (if applicable)	**CHEMISTRY**
Degree/Program	**Bachelor of Arts & Science/Chemistry, Biochemistry, Forensic Chemical Science, Teacher Licensure**
Date Prepared	**May 2017**
Date Revised	**5/24/17**

PROGRAM MISSION

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Consistent with the mission of the University and the College of Arts and Sciences, the Department of Chemistry is dedicated to providing a broad spectrum of undergraduate students with the necessary understanding of chemical principles to become successful, contributing members of their social, professional and/or occupational communities.

Students entering chemistry come from diverse backgrounds and will apply their acquired chemical skills in equally diverse occupations. The Department of Chemistry addresses this diversity by focusing on individual student needs and goals through personal advising, small class sizes, individual instruction, hands-on experience with scientific instrumentation, and guided undergraduate research in analytical, biochemical, inorganic, organic, physical, and interdisciplinary areas. The Chemistry Department faculty is itself diverse and exemplifies commitment to learning and contributing by engaging in scientific research, presenting and publishing as well as volunteering to improve the quality of living in the larger Topeka community.

Beginning courses are designed to give the student an awareness and understanding of scientific chemical principles and problems. Advanced courses are planned to meet the specialized needs of students interested in graduate work, employment in private or public laboratories, teaching, medicine and health related professional fields. In total, the program provides graduates with the appropriate knowledge and skill foundation in preparation for graduate study, professional schools, careers in education, and/or chemical laboratories.

PROGRAM STUDENT LEARNING OUTCOMES (PSLO)

If the program has more than 6 PSLO, hit "Tab" in the last cell to add another row. Cells will expand to accommodate text.

Upon completion of the program students will be able to:	
PSLO 1	Demonstrate a mastery of a broad set of chemical knowledge concerning the fundamentals in the basic areas of the discipline (analytical, biological, inorganic, organic, and physical chemistry) as appropriate for the individual major.
PSLO 2	Demonstrate an operating knowledge of a variety of modern scientific instrumentation and computational methods to analyze chemicals and chemical processes.
PSLO 3	Demonstrate safe chemical practices, including waste handling and safety equipment.
PSLO 4	Demonstrate an ability to define scientific problems, develop testable hypotheses, design and execute experiments, analyze data using appropriate statistical methods, and draw appropriate conclusions both individually and in collaboration with others.
PSLO 5	Demonstrate the use of modern library search tools to locate and retrieve scientific information and the ability to communicate scientific knowledge both verbally and in writing to peers and the scientific community.

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PSLO 6	Discuss the application of the standards of professional ethics and how these affect the scientific endeavor.

CURRICULUM MAP (Alignment)

List <u>all</u> courses required for <u>program majors</u> and indicate, where applicable, (using the following key) the PSLO with which they are associated.

T = Taught
X = Taught and Assessed
A = Assessed

If the program has more than 6 PSLO, "Copy and Paste" rows from this table below the existing table, beginning with the row numbering the PSLO.

Required Courses	PSLO 1	PSLO 2	PSLO 3	PSLO 4	PSLO 5	PSLO 6
All Bachelors Degrees						
CH151 w/lab	X	T	X	X		T
CH152 w/lab	X	X	T	T		
CH340	X					
CH341	X					
CH342		X	T	T		
CH343		X	T	T	T	
CH391	T				X	X
Instrument Portfolio		A				
Additional for BA in Biochemistry						
CH350	T					
CH351			T	T		
CH352	X					
CH353		X	T	T	T	
CH390			X	X	X	X
Additional for BA in Chemistry						
Two of these						
CH320	X					
CH350	T					
CH352	X					
CH386	X				T	
CH380 (or CH381)	T					
Two of these						
CH321			T	T		
CH345		X	T	T	T	
CH346		X	T	T		
CH347			T	T		
CH351			T	T		

CH353		X	T	T	T	
Required						
CH390			X	X	X	X
Additional for BA in Chemistry (Teacher Licensure)						
CH320	X					
CH321			T	T		
CH350	T					
CH351			T	T		
CH390			X	X	X	X
Additional for BS in Biochemistry						
CH320	X					
CH321			T	T		
CH350	T					
CH351			T	T		
CH352	X					
CH353		X	T	T	T	
CH381	T					
CH390			X	X	X	X
Additional for BS in Chemistry (ACS Certified)						
CH320	X					
CH321			T	T		
CH345		X	T	T	T	
CH346		X	T	T		
CH350	T					
CH362	T					
CH381	T					
CH382	X					
CH385		X	T	T		
CH386	X				T	
CH390			X	X	X	X
Additional for BS in Chemistry (non-ACS Certified)						
CH320	X					
CH321			T	T		
Two of these						
CH345		X	T	T	T	
CH346		X	T	T		
CH347			T	T		
CH351			T	T		
CH390			X	X	X	X

Two of these						
CH350	T					
CH352	X					
CH382	X					
CH386	X				T	
One of these						
CH380	T					
CH381	T					
Required						
CH390			X	X	X	X
Additional for BS in Forensic Chemical Science						
CH103	T					T
CH202					T	T
CH203		T	T	T		
CH320	X					
CH321			T	T		
CH346		X	T	T		
CH350	T					
CH351			T	T		
CH393			X	X	X	X

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ASSESSMENT MEASURES (Method)

Indicate (*mark with an X*) the type of assessment used to evaluate each PSLO.
Check as many boxes as apply.
Programs should use at least 2 direct measures for each PSLO.

If the program has more than 6 PSLO, "Copy and Paste" rows from this table below the existing table, beginning with the row numbering the PSLO.

	PSLO 1	PSLO 2	PSLO 3	PSLO 4	PSLO 5	PSLO 6
DIRECT						
Portfolio		X				
Performance Assessment (Art, Music, Theatre, etc.)						
Performance Assessment (Off campus experience – Clinical, Internship, Practicum, etc.)				X	X	X
Professional Credentialing Exam						
Major Field Test or National Exam	X					
Course Embedded Assignment			X		X	X
Project Evaluation (e.g. research)						
Course Grades	X	X				
Other ~ Capstone Course/Seminar					X	X
Other ~ Lab Experiments/Reports		X		X		
INDIRECT						
Surveys						
Exit Interviews/Focus Groups						
Other ~ Accident Reports			X			

THRESHOLD OF STUDENT SUCCESS

For each PSLO, list each measure separately and indicate the threshold of student achievement considered acceptable.
***(example: 75% of students will receive B or better)* - see Assessment Plan Guide for additional instructions.**

Hit :Tab" in the last cell to add another row. Cells will expand to accommodate text.

PSLO	MEASURE	THRESHOLD
1	Major Field Test	Class average at the 50th national percentile
	Course Grades	Course average GPA 2.5
2	Portfolio	All students graduating in the major will have submitted an instrument portfolio favorably evaluated by at least two faculty
	Course Grades	Course average GPA 2.5
	Lab Experiments/Reports	Average grade of 75% for lab report for those labs using data acquisition and analysis

3	Course Embedded Assignment	Average grade of 75% for "Safety Quiz" in CH 151 and on the final report for CH 390 or CH 393
	Chemistry Laboratory Accident Reports	No more than 1% of laboratory students reporting a minor accident and/or injury. No major accidents or injuries.
4	Performance Assessment	Course average GPA 3.0
	Lab Experiments/Reports	Average grade of 75% for Final project in CH 151
5	Performance Assessment	Course average GPA 3.0 in CH 390 or CH 393
	Course Embedded Assignment	Average grade of 75% for Literature Assignment in CH 391
	Chemistry Seminar	Course average GPA 3.0
6	Performance Assessment	Course average GPA 3.0 in CH 390 or CH 393
	Course Embedded Assignment	Average grade of 75% for Ethics Assignment in CH 391
	Chemistry Seminar	Course average GPA 3.0

DATA COLLECTION *CALENDAR*

Indicate how often assessment data are collected for each PSLO.
S=every semester
Y=every year
2=every other year
3=every 3 years, (etc.)
O-Other (please explain)
If the program has more than 6 PSLO, hit "Tab" in the last cell to add another row.

	Frequency of Data Collection
PSLO 1	**S**
PSLO 2	**S**
PSLO 3	**S**
PSLO 4	**S**
PSLO 5	**S**
PSLO 6	**S**

ANALYSIS AND REPORTING CALENDAR

Indicate (*mark with an X*) the years in which each PSLO was/will be analyzed and reported. Cycle will repeat after Year 6.
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	PSLO 1	**PSLO 2**	**PSLO 3**	**PSLO 4**	**PSLO 5**	**PSLO 6**
Year 1/2013-14	**X**					
Year 2/2014-15		**X**		**X**		
Year 3/2015-16			**X**		**X**	**X**
Year 4/2016-17	**X**					
Year 5/2017-18		**X**		**X**		
Year 6/2018-19			**X**		**X**	**X**

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If field experiences are a significant part of the program, explicitly address how validity and reliability of the evaluation instrument is ensured. *Cell will expand to accommodate text.*

STAKEHOLDER INVOLVEMENT

Describe how stakeholders (faculty, students, alumni, advisory boards, community, etc.) are involved in the development, implementation, periodic review and continuous improvement of the Assessment Plan. *Cell will expand to accommodate text.*
Faculty are asked to review current WU department PSLOs and those from other institutions and provide input. Faculty are also asked to review and provide input on assessment for each PSLO.

PROGRAM ASSESSMENT PLAN REVIEW CYCLE

Indicate (*mark with an X in column 2*) the year(s) in which this Program Assessment Plan will be reviewed and indicate in column 3 (when applicable) when changes are made and addressed in the appropriate year's annual report.

Cycle repeats after Year 6.

	Program Assessment Plan Review	**Were changes made and addressed in the Annual Report? Yes or No (update when applicable)**
Year 1/2013-14	X	N
Year 2/2014-15		
Year 3/2015-16		
Year 4/2016-17	X (NEXT REVIEW IN 2022-23)	YES
Year 5/2017-18		
Year 6/2018-19		