



DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:

12/15/2020

Institution

Missouri Western State University

Site Information

Implementation Date:

1/19/2021 12:00:00 AM

Added Site(s):

Selected Site(s):

Missouri Western State University, 4525 Downs Drive, St. Joseph, MO, 64507

CIP Information

CIP Code:

400501

CIP Description:

A general program that focuses on the scientific study of the composition and behavior of matter, including its micro- and macro-structure, the processes of chemical change, and the theoretical description and laboratory simulation of these phenomena.

CIP Program Title:

Chemistry, General

Institution Program Title:

Chemistry

Degree Level/Type

Degree Level:

Bachelor's Degree

Degree Type:

Bachelor of Science

Options Added:

Collaborative Program:

N

Mode of Delivery

Current Mode of Delivery

Classroom

Student Preparation

Special Admissions Procedure or Student Qualifications required:

No special preparation is required.



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Specific Population Characteristics to be served:

n/a

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:

Ph.D. or Masters degree in Chemistry or a closely related field.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:

100%

Expectations for professional activities, special student contact, teaching/learning innovation:

Faculty are expected to engage in scholarly work including research and pedagogical innovation that leads to peer-reviewed presentation and publication of the work. Faculty research is expected to engage undergraduate students in this program wherever possible.

Student Enrollment Projections Year One-Five

Year 1	Full Time: 5	Part Time: 0	
Year 2	Full Time: 11	Part Time: 0	
Year 3	Full Time: 23	Part Time: 0	Number of Graduates: 7
Year 4	Full Time: 33	Part Time: 0	
Year 5	Full Time: 40	Part Time: 0	Number of Graduates: 10

Percentage Statement:

100.00

Program Accreditation

Institutional Plans for Accreditation:

The current BS Chemistry degree is certified by the American Chemical Society. The curricular revision proposed herein would continue to maintain that certification.

Program Structure

Total Credits:

120

Residency Requirements:

n/a

General Education Total Credits:

42

Major Requirements Total Credits:

66

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
CHEM 326	4	Instrumental Analysis

Free Elective Credits:

12



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Internship or other Capstone Experience:

None

Assurances

I certify that the program is clearly within the institution's CBHE-approved mission. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the public institution, as set forth in the public institution's approved plan or plan update.

I certify that the program will be offered within the proposing institution's main campus, CBHE-approved service region or CBHE-approved off-site location.

I certify that the program will not unnecessarily duplicate an existing program within the geographically applicable area.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the program can be launched with minimal expense and falls within the institution's current operating budget.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

First and Last Name: YEN

TO

Email: yto@missouriwestern.edu

Phone: 816-271-4548

2021-2022 PROPOSED CURRICULUM

The curriculum listed below has been reviewed and approved by faculty and University administration.

Degree/Program:	B.S. – Chemistry
Major:	Chemistry

MAJOR REQUIREMENTS		(66 Credits)	
		Credit	Grade
CHE 111	General Chemistry I	5	
CHE 120	General Chemistry II w/Qualitative Analysis	5	
CHE 310	Organic Chemistry I	3	
CHE 311	Organic Chemistry Lab I	2	
CHE 312	Organic Chemistry II	3	
CHE 313	Organic Chemistry Lab II	2	
CHE 321	Quantitative Analysis	4	
CHE 326	Instrumental Analysis	4	
CHE 340	Foundations of Physical Chemistry	4	
CHE 370	Biochemistry I	4	
CHE 380	Environmental Chem & Chemical Mgt	3	
CHE 441	Advanced Inorganic Chemistry	3	
CHE 442	Inorganic Synthesis	1	
CHE 480	Advanced Physical Chemistry	4	
MAT167	Calculus w/Analytical Geometry I	5	
MAT 177	Calculus w/ Analytic Geometry II	OR	
MAT 287	Multivariable Calculus	3	
PHY 110	College Physics I	4	
PHY 111	College Physics II	4	
Advanced Courses in Chemistry: Choose 1 course			
CHE 470	Biochemistry II	3	
CHE475	Internship in Chemistry	3	
CHE490	Research in Chemistry*	3	
TOTAL		66	

CHEM 340 (4) replaces CHEM 383 (3) & 384 (2)

CHE480 (4) replaces CHE 381 (3) & CHE 382 (1)

Only 1 additional semester of calculus required. MAT177 and MAT287 each reduced to 3 hours

PHY110 (4) replaces PHY210 (5)

PHY111 (4) replaces PHY211 (5)

CHE495 removed as a degree requirement (2)

CHE 475 (3) and CHE 490 (3) replace CHE445 (3) as advanced course elective options.

CHE490 (3) moved from required to elective option.

Total Major hours reduced from 80-82 to 66.

This program is a redesign of an existing program, [BS-Chemistry], that we currently offer. The submitted redesign program, which exceeds the four course change guideline, is the product of faculty's effort to better streamline, reduce redundancy, and define course offerings. The redesigned program will improve alignment to market demands while providing students with stronger foundational content and more practical skills. The redesigned program will utilize current faculty and resources and will not require additional expenditures beyond what is already allocated for the existing program.

2020-2021 CURRENT CURRICULUM

Degree/Program:	B.S. – Chemistry
Major:	Chemistry

MAJOR REQUIREMENTS		(80-82 Credits)	
		Credit	Grade
CHE 111	General Chemistry I	5	
CHE 120	General Chemistry II w/Qualitative Analysis	5	
CHE 310	Organic Chemistry I	3	
CHE 311	Organic Chemistry Lab I	2	
CHE 312	Organic Chemistry II	3	
CHE 313	Organic Chemistry Lab II	2	
CHE 321	Quantitative Analysis	4	
CHE 326	Instrumental Analysis (4)	OR	
CHE 426	Instrumental Methods (5)	4-5	
CHE 370	Biochemistry I	4	
CHE 380	Environmental Chem & Chemical Mgt	3	
CHE 381	Phys Chem: Quantum Mechanics	3	
CHE 382	Phys-Chem Lab: Quantum Mechanics	1	
CHE 383	Phys Chem: Thermo & Kinetics	3	
CHE 384	Phys Chem Lab: Thermo & Kinetics	2	
CHE 441	Advanced Inorganic Chemistry	3	
CHE 442	Inorganic Synthesis	1	
CHE 490	Research in Chemistry**	2	
CHE 495	Seminar in Chemistry	2	
MAT 165	Calc w/ Analytic Geom I: Diff. (3)	AND	
MAT 166	Calc w/ Analytic Geom I: Integ. (3)	OR	
MAT 167	Calculus w/ Analytic Geometry I (5)	5-6	
MAT 177	Calculus w/ Analytic Geometry II	5	
MAT 287	Calculus w/ Analytic Geometry III	5	
PHY 210	University Physics I	5	
PHY 211	University Physics II	5	
Advanced Courses in Chemistry: Choose 1 course			
CHE 445	Advanced Topics in Chemistry	3	
CHE 470	Biochemistry II	3	
TOTAL		80-82	