Date Submitted: 01/20/21 3:10 pm

Viewing: SC-MS-CHEM : Chemistry, MS

Last approved: 02/11/19 4:11 pm

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Changes proposed by: jbazaz

Catalog Pages Using this Program

Chemistry, MS

In Workflow

1. **CHEM Assoc Chair**
2. CHEM Chair
3. SC Curriculum Committee
4. SC Associate Dean
5. SC CAT Editor
6. Assoc Provost-Graduate
7. Registrar-Programs: Duration
8. Registrar-Programs

History

1. Oct 23, 2017 by clmig-jwehrheim
2. Feb 14, 2018 by Rebekah Zacharias (rzachari)
3. Feb 11, 2019 by Tory Sarro (vsarro)

Are you completing this form on someone else's behalf?

Yes

Requestor:

Name	Extension	Email
Benoit Van Aken	1091	bvanaken@gmu.edu

Effective Catalog: 2021-2022

Program Level: Graduate

Program Type: Master's

Degree Type: Master of Science

Title: Chemistry, MS

Banner Title: **Chemistry, MS**

Registrar/OAPI Use Only – SCHEV Status Approved

Registrar's Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV Letter

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
1	Biochemistry	BC

Registrar/IRR Use Only – Concentration CIP Code

College/School: College of Science

Department / Academic Unit: Chemistry & Biochemistry

Jointly Owned Program? No

Justification

Clarifying that applicants without a bachelor's in chemistry may be asked to complete coursework that may not apply to their master's program.

Total Credits Required: Total credits: 30

Registrar's Office Use Only - Program Code:

SC-MS-CHEM

Registrar/IRR Use Only – Program CIP Code

Admission Requirements:

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies section of this catalog.
To apply for this program, please complete the George Mason University Admissions Application.

To be considered for admission to degree status, students must have a bachelor's degree in chemistry, biochemistry, or a related field **and must meet general admission requirements for graduate study as specified in Graduate Admission Policies. Applicants with** ~~from~~ a **bachelor's degree** ~~regionally accredited institution and must meet general admission requirements for graduate study as specified~~ in **other fields of study who have at least three years of chemistry or biochemistry coursework may be accepted into the program.** ~~Graduate Admission Policies.~~ **In some cases, students may be accepted provisionally and will be required to successfully complete the selected remedial courses, some of which may not be applicable toward the master's requirements.**

Admission is based **upon** ~~on~~ a departmental evaluation of the applicant's background as evidenced by transcripts, résumés, and letters of **recommendation.**

~~recommendation.~~

GRE scores are not required for admission into this program.

Program-Specific Policies:

Policies

CHEM 500 Selected Topics in Modern Chemistry may not be applied toward the MS degree.

CHEM courses numbered 502 through 510 may be applied toward the degree only with prior written approval of the department.

For policies governing all graduate programs, see AP.6 Graduate Policies.

Degree Requirements:

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Core Courses

Select three of the following core courses. Courses must be selected from three different core areas shown below: 9

1

Analytical:	
CHEM 624	Principles of Chemical Separation
Biochemistry:	
CHEM 660	Protein Biochemistry
CHEM 662	Modern Methods of Drug Discovery
Environmental:	
CHEM 651	Environmental Chemistry of Organic Substances
Inorganic:	
CHEM 641	Solid State Chemistry
CHEM 646	Bioinorganic Chemistry
Organic:	
CHEM 613	Modern Polymer Chemistry
CHEM 614	Physical Organic Chemistry

Total Credits	9

1These listed courses may also be taken as electives beyond the stated credit requirement for each option.

MS without Concentration

General chemistry students who do not wish to pursue a concentration complete the core courses above, the following requirements, and choose either the Thesis Option or the Non Thesis Option:

Additional Core Course		3
CHEM 633	Chemical Thermodynamics and Kinetics	
Chemistry Electives		9
Select 3 credits of CHEM designated courses		
Select 6 credits of courses in chemistry or related fields, approved by the graduate committee prior to registration		
Seminar		3
CHEM 790	Graduate Seminar	
Thesis or Non Thesis		6
Select the Thesis Option or the Non Thesis Option		
Total Credits		21

Thesis Option

The Thesis Option is designed for students planning to pursue a doctoral degree or a career involving research in the chemical, biochemical, environmental, or pharmaceutical industries.

Students must choose a research laboratory advisor during their first semester in the program and begin working on their thesis project no later than the second semester. The thesis is based on research that must be preapproved by the thesis or advisory committee, which is appointed prior to the first semester of registration in CHEM 799 Master's Thesis. Students must complete CHEM 799 Master's Thesis and present a seminar, followed by an oral defense.

Thesis Option		6
CHEM 799	Master's Thesis	
Total Credits		6

Non Thesis Option

The Non Thesis Option is designed for those seeking to go on to professional school, teach chemistry in secondary schools, or pursue other careers in which advanced work in chemistry is necessary or advantageous.

Students selecting this option are not required to complete a laboratory-based thesis. Instead, they must complete a research project or gain teaching experience in undergraduate chemistry labs, as described below.

Any combination of CHEM 670 Teaching Practicum and CHEM 796 Directed Reading and Research may be used to fulfill this requirement. However, CHEM 796 Directed Reading and Research may only be used to fulfill this requirement with prior written approval of the department and must be used to complete a laboratory or library-based research project, or must otherwise enhance the student's teaching skills.

Non Thesis Option		
Select 3 credits of the following:		3
CHEM 670	Teaching Practicum	

CHEM 796	Directed Reading and Research	
Additional Chemistry Electives		3
Select 3 credits of CHEM designated courses		
Total Credits		6

MS with Concentration in Biochemistry (BC)

Students who wish to pursue an optional concentration in biochemistry complete the core courses above, the following requirements, and choose either Thesis Option or the Non Thesis Option:

Additional Core Course		3
CHEM 633	Chemical Thermodynamics and Kinetics	
Chemistry Electives		3
Select 3 credits of CHEM designated courses		
Seminar		3
CHEM 790	Graduate Seminar	
Thesis or Non Thesis		12
Select the Thesis Option or the Non Thesis Option		
Total Credits		21

Thesis Option

The Thesis Option is designed for students planning to pursue a doctoral degree or a career involving research in the chemical, biochemical, environmental, or pharmaceutical industries.

Students must choose a research laboratory advisor during their first semester in the program and begin working on their thesis project no later than the second semester. The thesis is based on research that must be preapproved by the thesis or advisory committee, which is appointed prior to the first semester of registration in CHEM 799 Master's Thesis. Students must complete CHEM 799 Master's Thesis and present a seminar, followed by an oral defense.

Biochemistry Electives		6
Select 6 credits of electives in biochemistry or related fields with approval from the department		
Thesis		6
CHEM 799	Master's Thesis	
Total Credits		12

Non Thesis Option

The Non Thesis Option is designed for those seeking to go on to professional school, teach chemistry in secondary schools, or pursue other careers in which advanced work in chemistry is necessary or advantageous.

Students selecting this option are not required to complete a laboratory-based thesis. Instead, they must complete a research project or gain teaching experience in undergraduate chemistry labs, as described below.

Any combination of CHEM 670 Teaching Practicum and CHEM 796 Directed Reading and Research may be used to fulfill this requirement. However, CHEM 796 Directed Reading and Research may only be used to fulfill this requirement with prior written approval of the department and must be used to complete a laboratory or library-based research project, or must otherwise enhance the student's teaching skills.

Non Thesis Option

Select 3 credits of the following:		3
CHEM 670	Teaching Practicum	
CHEM 796	Directed Reading and Research 1	
Biochemistry Electives		9
Electives in biochemistry or related fields with approval from department		
Total Credits		12

Retroactive Requirements Updates:

Plan of Study:

Program Outcomes

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

Courses offered via distance (if applicable):

What is the primary delivery format for the program? Face-to-Face Only

Does any portion of this program occur off-campus?

No

Are you working with a vendor / other collaborators to offer your program?

No

Related Departments

Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?

No

Are you adding or removing a licensure component?

No

Additional SCHEV & SACSCOC Information

Are you changing the total number of credits required for this program?

No

Are you changing the delivery format in any way (e.g adding an online option)?

No

Are you adding/removing a licensure option which was approved by SCHEV?

No

Will any portion of this program be offered at an off-campus location?

No

Will this program change affect any specialized accreditation?

No

Is the content of the new program closely related to that of an existing approved program?

No

Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)?

No

Is this new program considered to be "lowering the degree level of a currently approved program" (i.e. existing content is at higher degree level, new content is at the lower degree level)?

No

Does this change represent a repackaging of content in an existing approved degree/certificate program?

No

Percentage of total credits containing new course content, excluding gen ed courses for undergraduate programs ("New content" means content that is not currently included in an existing approved degree/certificate program.) Please choose a percentage (i.e. 0%-100%)

less than 25%

Are the total credits for the program increasing or decreasing by more than 3 credits?

No

Will any additional equipment/facilites be needed?

No

Will any additional faculty be required?

No

Will any additional financial resources be needed?

No

Will any additional library/learning resources needed?

No

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? No

Does this program cover material which crosses into another department?

No

Additional Attachments

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

Is this course required of all students in this degree program?

%wi_required.eschtml%

Key: 37