



MEMORANDUM

To: Julio Frenk
University President

From: Linda L. Neider
Chair, Faculty Senate

A handwritten signature in blue ink, appearing to read 'L. Neider', is placed over the 'From:' field.

Date: April 27, 2020

Subject: Faculty Senate Legislation #2019-78(B) – Curriculum Change to Bachelor of Science (B.S.) in Chemistry Program – College of Arts and Sciences

The Faculty Senate, at its April 22, 2020 meeting, had no objections to the approval of the College of Arts and Sciences proposed changes to the B.S. in Chemistry curriculum. These changes will allow students the flexibility to have a strong Chemistry major with appropriate credit levels set by the American Chemical Society.

The proposal is enclosed for your reference.

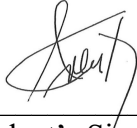
This legislation is now forwarded to you for your action.

LLN/ss/rh

cc: Jeffrey Duerk, Executive Vice President and Provost
Leonidas Bachas, Dean, College of Arts and Sciences
Marc Knecht, Professor, College of Arts and Sciences

CAPSULE: Faculty Senate Legislation #2019-78(B) – Curriculum Change to Bachelor of Science (B.S.) in Chemistry Program – College of Arts and Sciences

PRESIDENT'S RESPONSE

APPROVED:  _____ DATE: 5/20/20
(President's Signature)

OFFICE OR INDIVIDUAL TO IMPLEMENT: Dean Leonidas Bachas, College of Arts & Sciences

EFFECTIVE DATE OF LEGISLATION: IMMEDIATELY
(Pending any further Board of Trustees approval.)

NOT APPROVED AND REFERRED TO: _____

REMARKS (IF NOT APPROVED): _____

Program Change Request

Date Submitted: 02/27/20 2:45 pm

Viewing: **CHEM_BS,CHEMB_AS_A : B.S. in Chemistry**

Last edit: 03/27/20 11:47 am

Changes proposed by: Marc Knecht (knecht)

Catalog Pages Using
this Program
[B.S. in Chemistry](#)

In Workflow

1. **PG Assessment and Accreditation**
2. **PG CHM Chair**
3. **PG University Curriculum Committee**
4. **PG FS Office for GWC**
5. PG FS GWC
6. PG Faculty Senate
7. PG FS Office for President
8. PG Registrar

Proposer(s) Name

Change Type All Other Changes

Provide a brief summary of the change

Career Undergraduate

Academic Structure

Plan Type Major and/or Degree

Who can take this program?

Degree Type Bachelor's

Degree Name

B.S. in Chemistry

Proposed Plan Code

Plan Name

B.S. in Chemistry

Approval Path

1. 03/18/20 5:16 pm
Patty Murphy (pxm491): Approved for PG Assessment and Accreditation
2. 03/19/20 1:31 pm
Roger Leblanc (rml): Approved for PG CHM Chair
3. 03/27/20 11:46 am
David Chin (dchin1): Approved for PG University Curriculum Committee
4. 03/27/20 11:48 am
Patty Murphy (pxm491): Rollback to PG University

Will there be any subcomponents within the program such as concentrations, specializations, thesis/non-thesis options, or tracks?

Curriculum
 Committee for PG
 AS Dean

5. 03/27/20 11:52 am
 David Chin (dchin1):
 Approved for PG
 University
 Curriculum
 Committee

Please list the authors of this proposal including name, rank/title, program/department, and school.

Marc R. Knecht, Professor, CHM, CAS

We are changing one required course in CHM to a CHM elective. Additionally, in FA19, we reduced our previous four semester sequence of general and organic chemistry two three courses, thus we are adding an additional elective. Finally, one more elective is being added so that the number of credits in both the regular and certified BS in CHM are equivalent. This allow students the flexibility to have a strong CHM major with appropriate credit levels set by the American Chemical Society.

School/ College	Department
College of Arts and Sciences	Chemistry

No

Effective Term Fall 2020

First Term Valid Fall 2020

Program Instruction Mode In Person

Where is the program offered?	Location	Please provide the % of instruction at each location.
	Coral Gables Campus	100

Program Length (Years) 4

Total Credits 120

Areas of Knowledge

STEM

To Be Published in the Academic Bulletin

Program Overview

The **B.S.** degree requires **47** ~~41~~ credit hours of chemistry. This major meets the minimum entrance requirements of many graduate programs in chemistry. Variations within the program may be recommended by the Department. Transfer students must complete a minimum of half of the required major credit hours in residence in the Department. Students should make certain that math and physics prerequisites are fulfilled in a timely manner.

Program Mission Statement

Mission

Program Goals

Goals

Student Learning Outcomes

Student Learning Outcomes

Graduates will be able to demonstrate a broad understanding of fundamental chemical principles in all areas of the field.

Graduates will be adept in a broad variety of chemical instrumentation and analytical techniques.

Graduates will display effective and strong written communication skills pertaining to chemical research.

Curriculum Requirements

Curriculum Requirements

		Course List	
Code	Title		Credit Hours
Core Courses			
<u>CHM 121</u>	Principles of Chemistry		4

Code	Title	Credit Hours
CHM 113	Chemistry Laboratory I	1
CHM 221	Organic Chemistry I	4
CHM 205	Organic Chemistry Laboratory I	1
CHM 222	Organic Chemistry II	4
CHM 206	Organic Chemistry Laboratory II	2
CHM 214	Quantitative Analytical Chemistry	3
Choose One of the Following:		8
MTH 161	Calculus I	
& MTH 162	and Calculus II	
MTH 171	Calculus I	
& MTH 172	and Calculus II	
Choose One of the Following:		10-11
PHY 101	College Physics I	
& PHY 102	and College Physics II	
& PHY 106	and College Physics Laboratory I	
& PHY 108	and College Physics Laboratory II	
PHY 201	University Physics I for the Sciences	
& PHY 202	and University Physics II for the Sciences	
& PHY 106	and College Physics Laboratory I	
& PHY 108	and College Physics Laboratory II	
PHY 221	University Physics I	
& PHY 222	and University Physics II	
& PHY 223	and University Physics III	
& PHY 224	and University Physics II Lab	
& PHY 225	and University Physics III Lab	
PHY 221	University Physics I	
& PHY 230	and Honors University Physics II-III	
& PHY 224	and University Physics II Lab	
& PHY 225	and University Physics III Lab	
Advanced Courses		
CHM 316	Instrumental Analytical Chemistry	3
CHM 320	Instrumental Methods in Chemistry and Biochemistry	2
CHM 360	Physical Chemistry I (Lecture)	3
CHM 364	Physical Chemistry (Laboratory I)	1
CHM 365	Physical Chemistry II (Lecture)	3
CHM 441	Inorganic Chemistry (Lecture)	3
BMB 401	Biochemistry for the Biomedical Sciences	4
Electives		12
CHM 317	The Chemistry of Food and Taste.	

Code	Title	Credit Hours
<u>CHM 401</u>	Environmental Chemistry	
	Any 500-level CHM course	
Additional Required Courses		
<u>ENG 105</u>	English Composition I	3
<u>ENG 106</u>	English Composition II	3
	Arts and Humanities Cognate	9
	People and Society Cognate	9
	Language Courses	3-9
	Minor	15
	Electives	13-7
	Total Credit Hours	120-121

Plan of Study

Suggested Plan of Study

This is a guide and is not meant to take the place of the advice of your major advisor; you should consult with them before making any changes.

Plan of Study Grid

Year One

Fall	Credit Hours
<u>CHM 121</u> Principles of Chemistry	4
<u>CHM 113</u> Chemistry Laboratory I	1
<u>MTH 161</u> Calculus I	4
<u>ENG 105</u> English Composition I	3
Arts and Humanities Cognate	3
Credit Hours	15

Spring

<u>CHM 221</u> Organic Chemistry I	4
<u>CHM 205</u> Organic Chemistry Laboratory I	1
<u>MTH 162</u> Calculus II	4
<u>ENG 106</u> English Composition II	3
Arts and Humanities Cognate	3
Credit Hours	15

Year Two

Fall	Credit Hours
<u>CHM 222</u> Organic Chemistry II	4
<u>CHM 206</u> Organic Chemistry Laboratory II	2

PHY 101 College Physics I	4
PHY 201 University Physics I for the Sciences	4
<u>PHY 106</u> College Physics Laboratory I	1
Language Course	3
Arts and Humanities Cognate	3
Credit Hours	14
Spring	
PHY 102 College Physics II	4
CHM 214 Quantitative Analytical Chemistry	3
BMB 401 Biochemistry for the Biomedical Sciences	4
PHY 202 University Physics II for the Sciences	4
<u>PHY 108</u> College Physics Laboratory II	1
Language Course	3
People and Society Cognate	3
Elective	3
Credit Hours	15
Year Three	
Fall	
CHM 214 Quantitative Analytical Chemistry	3
<u>CHM 360</u> Physical Chemistry I (Lecture)	3
<u>CHM 364</u> Physical Chemistry (Laboratory I)	1
CHM Elective	3
Language Course	3
People and Society Cognate	3
Arts and Humanities Cognate	3
Credit Hours	16
Spring	
CHM 316 Instrumental Analytical Chemistry	3
CHM 320 Instrumental Methods in Chemistry and Biochemistry	2
<u>CHM 365</u> Physical Chemistry II (Lecture)	3
CHM Elective	3
People and Society Cognate	3
Minor	3
Minor	3
Credit Hours	15
Year Four	
Fall	
BMB 401 Biochemistry for the Biomedical Sciences	4
CHM 441 Inorganic Chemistry (Lecture)	3
CHM Elective	3

Minor	3
Minor	3
Elective	3
Credit Hours	15
Spring	
CHM 441 Inorganic Chemistry (Lecture)	3
CHM 320 Instrumental Methods in Chemistry and Biochemistry	2
CHM Elective	3
Elective	4
Minor	3
People and Society Cognate	3
Credit Hours	15
Total Credit Hours	120

Rationale

Rationale

We are changing one required course in CHM to a CHM elective. Additionally, in FA19, we reduced our previous four semester sequence of general and organic chemistry two three courses, thus we are adding an additional elective. Finally, one more elective is being added so that the number of credits in both the regular and certified BS in CHM are equivalent. This allow students the flexibility to have a strong CHM major with appropriate credit levels set by the American Chemical Society.

Market Demand

Relationship to Other Programs

Library Resources Available and Needed to Support the Program

Laboratory Facilities, Equipment, and Space Available and Needed to Support the Program

Other Resources Available or Needed to Support the Program

Curriculum

Program Curriculum

Upload Syllabi for Any New Courses

Proposed Schedule of Course Offerings for the First Three Years

CIP Code

Proposed CIP Code

Faculty

Program Directors

Upload CV(s)

Program Faculty

Students

Applicant Pool

Enrollment Projections

Administration

Program Administration

Comparison

Peer Comparisons

Documents

Attach Supporting Documentation

Reviewer

Comments

Patty Murphy (pxm491) (03/18/20 5:16 pm): This change does not require notification to or approval from SACSOC.

David Chin (dchin1) (03/27/20 11:51 am): On 3/25/20 the University Curriculum Committee voted to support this proposal as submitted.