



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 #2019-81(B) – Curriculum Change to the Bachelor of Science/ Master of Science (B.S./M.S.) in Chemistry Five-Year Dual Degree 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 curriculum change to the B.S./M.S. five-year dual degree program. The curriculum is being updated to reflect the changes in the B.S. in Chemistry degree program.

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
Guillermo Prado, Dean, Graduate School
Marc Knecht, Professor, College of Arts and Sciences

CAPSULE: Faculty Senate Legislation #2019-81(B) – Curriculum Change to the Bachelor of Science/ Masters of Science (B.S./M.S.) in Chemistry Five-Year Dual Degree 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: 03/02/20 3:03 pm

Viewing: **CHEM5_MS : B.S. / M.S. in Chemistry
Five Year**

Last edit: 03/02/20 3:03 pm

Changes proposed by: Marc Knecht (knecht)

Catalog Pages Using
this Program
[B.S. / M.S. in Chemistry Five-Year](#)

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

Approval Path

1. 03/18/20 5:21 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 11:43 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.

Proposer(s) Name

Marc Knecht, Professor, CHM, CAS

Change Type All Other Changes

Provide a brief summary of the change

Updated this to reflect our changes in the BS degree sent earlier.

Career Dual Career

Dual Listed Career Graduate Undergraduate

Academic Structure

School/ College	Department
College of Arts and Sciences	Chemistry

Plan Type Dual/Joint Degree

Proposed Plan Code

Plan Name B.S. / M.S. in Chemistry Five Year

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)

Total Credits 154

To Be Published in the Academic Bulletin

Program Overview

The BS/MS program is a five-year program emphasizing research in the senior year and in the Master's year. Before they enter the program, students will be prepared for their research experience through existing laboratory courses and by mentored research with a Chemistry graduate faculty member. Whereas students may begin mentored research as early as their freshman year, it is expected that they should have at least one semester of research prior to the start of their senior year. Students will have access to capstone and interdisciplinary 500 level courses as seniors and to 600 level courses as Master's students.

Program Mission Statement

Program Goals

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

Course List

Code	Title	Credit Hours
<u>CHM 121</u>	Principles of Chemistry	4
<u>CHM 113</u>	Chemistry Laboratory I	1
<u>CHM 221</u>	Organic Chemistry I	4
<u>CHM 205</u>	Organic Chemistry Laboratory I	1
<u>CHM 222</u>	Organic Chemistry II	4
<u>CHM 206</u>	Organic Chemistry Laboratory II	2
<u>CHM 214</u>	Quantitative Analytical Chemistry	3
Choose One of the Following:		8
<u>MTH 161</u>	Calculus I	
& <u>MTH 162</u>	and Calculus II	

Code	Title	Credit Hours
<u>MTH 171</u> & <u>MTH 172</u>	Calculus I and Calculus II	
Choose One of the Following:		10-11
<u>PHY 101</u> & <u>PHY 102</u> & <u>PHY 106</u> & <u>PHY 108</u>	College Physics I and College Physics II and College Physics Laboratory I and College Physics Laboratory II	
<u>PHY 201</u> & <u>PHY 202</u> & <u>PHY 106</u> & <u>PHY 108</u>	University Physics I for the Sciences and University Physics II for the Sciences and College Physics Laboratory I and College Physics Laboratory II	
<u>PHY 221</u> & <u>PHY 222</u> & <u>PHY 223</u> & <u>PHY 224</u> & <u>PHY 225</u>	University Physics I and University Physics II and University Physics III and University Physics II Lab and University Physics III Lab	
<u>PHY 221</u> & <u>PHY 230</u> & <u>PHY 224</u> & <u>PHY 225</u>	University Physics I and Honors University Physics II-III and University Physics II Lab and University Physics III Lab	
Advanced Courses		
<u>CHM 316</u>	Instrumental Analytical Chemistry	3
<u>CHM 320</u>	Instrumental Methods in Chemistry and Biochemistry	2
<u>CHM 360</u>	Physical Chemistry I (Lecture)	3
<u>CHM 364</u>	Physical Chemistry (Laboratory I)	1
<u>CHM 365</u>	Physical Chemistry II (Lecture)	3
<u>CHM 441</u>	Inorganic Chemistry (Lecture)	3
<u>BMB 401</u>	Biochemistry for the Biomedical Sciences	4
Electives		12
<u>CHM 317</u>	The Chemistry of Food and Taste.	
<u>CHM 401</u>	Environmental Chemistry	
Any 500-level course		
<u>CHM 488</u>	Undergraduate Research	5
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

Code	Title	Credit Hours
Electives/Minor		23-17
Two 600-level courses		6
<u>CHM 779</u>	Chemistry Seminar	1
<u>CHM 780</u>	Chemistry Seminar	2
<u>CHM 810</u>	Master's Thesis	21
Total Credit Hours		150-151

Plan of Study

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
<u>PHY 201</u> 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	17

Spring

<u>CHM 214</u> Quantitative Analytical Chemistry	3
<u>BMB 401</u> Biochemistry for the Biomedical Sciences	4
<u>PHY 202</u> University Physics II for the Sciences	4
<u>PHY 108</u> College Physics Laboratory II	1

Language Course	3
Credit Hours	15
Year Three	
Fall	
<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	
Elective	4
Credit Hours	14
Spring	
<u>CHM 365</u>Physical Chemistry II (Lecture)	3
CHM Elective	3
People and Society Cognate	3
Elective	3
Elective	3
Credit Hours	15
Year Four	
Fall	
<u>CHM 441</u>Inorganic Chemistry (Lecture)	3
CHM Elective	
<u>CHM 488</u>Undergraduate Research	3
Elective	3
Elective	3
People and Society Cognate	3
Credit Hours	15
Spring	
<u>CHM 320</u>Instrumental Methods in Chemistry and Biochemistry²	
CHM Elective	3
<u>CHM 488</u>Undergraduate Research	2
Elective	3
Elective	4
Credit Hours	14
Summer	
<u>CHM 810</u>Master's Thesis	5
<u>CHM 810</u>Master's Thesis	4
Credit Hours	9
Year Five	
Fall	

600-Level CHM Course	3
CHM 810Master's Thesis	6
CHM 779Chemistry Seminar	1
Credit Hours	10
Spring	
600-Level CHM Course	3
CHM 810Master's Thesis	6
CHM 779Chemistry Seminar	1
CHM 780Chemistry Seminar	1
Credit Hours	11
Total Credit Hours	150
Admission Requirements	

Rationale

Rationale

Updated this to reflect our changes in the BS degree sent earlier.

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 5:20 pm): The proposed change does not require notification to or approval from SACSCOC.

David Chin (dchin1) (03/27/20 11:43 am): On 3/25/20 the University Curriculum Committee voted to support this proposal as submitted.