



The College at  
**BROCKPORT**  
STATE UNIVERSITY OF NEW YORK

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Brockport, New York 14420  
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Resolution **2017-18 #24UC**  
**College Senate**

Supersedes Res #: \_\_\_\_\_

TO: Dr. Heidi Macpherson, College President

FROM: The College Senate:

RE: **→** I. Formal Resolution (*Act of Determination*)  
II. Recommendation (*Urging the Fitness of*)  
III. Other, For Your Information (*Notice, Request, Report, etc.*)



SUBJ: **BIO Major Revisions** (#21\_17-18committee)

Implementation Effective Date\*\*: 8/20/18

Signed: [Signature]  
(Sandeep Singh, 2017-18 College Senate President)

Date: 03/05/18

Signed: [Signature]  
(Dr. Eileen Daniel, Vice Provost, The College at Brockport)

Date: 3/5/18

**\*\*Implementation of resolution requires final approval from SUNY- State Education Department.**

\_\_\_ YES  NO

Please fill out the bottom portion and follow the distribution instructions at the end of this page.

TO: Dr. Sandeep Singh, College Senate President

FROM: Dr. Heidi Macpherson, College President

RE: **→** I. Decision and Action Taken on Formal Resolution (circle choice)

- a. Accepted
- b. Deferred for discussion with the Faculty Senate on \_\_\_/\_\_\_/\_\_\_
- c. Unacceptable for the reasons contained in the attached explanation.
- d. Comments:

Signed: [Signature]  
(Dr. Heidi Macpherson, President, The College at Brockport)

Date: 3/12/18

**DISTRIBUTION:**

The College Senate will forward the resolution signed by the College Senate President to the Vice Provost for determination as to whether the implementation of the resolution requires final approval from SUNY-State Education Dept. The Vice Provost will then forward the resolution with that designation to the College President. Upon approval, the College President will forward copies of resolutions to his/her staff who will, in turn, forward copies to their staff and to the College Senate. The College Senate Office will post resolutions to the College Senate Web at <http://www.brockport.edu/collegesenate/resolutions>.



**COLLEGE SENATE OFFICE  
RESOLUTION PROPOSAL COVER  
PAGE**

<b>Routing Number</b> <i>Routing # assigned by Senate Office</i>	<b>#21_17-18UC</b> <i>Use routing number and title in all reference to this proposal.</i>
<b>Replaces Resolution</b>	<b>#</b>

**DEADLINE FOR SUBMISSIONS: FEBRUARY 28**

Incomplete proposals or proposals received after the deadline may not be reviewed until next semester.

1. **PROPOSAL TITLE:** Please be somewhat descriptive, ie. *Graduate Probation/Dismissal Proposal* rather than *Graduate Proposal*.

Biology major updates: modernizing the required core course sequence and reducing the number of electives.

2. **BRIEF DESCRIPTION OF PROPOSAL:**

Revising the BIO major to:

- Add BIO315 Cell Biology (3 cr) as a required core course for all BIO majors
- Eliminate required core course BIO301 Cellular Biochemistry (4 cr) & replace with two new required core courses BIO310 Biological Chemistry (3 cr) and BIO311 Biological Chemistry Lab (1 cr)
- Reduce the number of elective credits required in the major by 3.
- Increase flexibility in the Senior Capstone Requirement to include BIO498 Seminar OR BIO493 Honors Thesis

\*There is NO net increase in credits required for the BIO major

3. **WILL ADDITIONAL RESOURCES AFFECTING BUDGET BE NEEDED?**  NO  YES EXPLAIN

4. **HOW WILL THIS AFFECT TRANSFER STUDENTS:**

Cell Biology is a course that is on the transfer path for Biology majors. Biological Chemistry is not on the transfer path for Biology majors. The addition of another transfer-path course like Cell Biology will allow students to take more credits in the major at a community college, and the reduction of upper-level elective credits required in the major will ease scheduling in the junior and senior semesters here at Brockport.

5. **ANTICIPATED EFFECTIVE DATE:**

Fall 2018

6. **SUBMISSION & REVISION DATES:** PLEASE PUT A DATE ON ALL UPDATED DOCUMENTS TO AVOID CONFUSION.

<i>First Submission</i>	<i>Updated on</i>	<i>Updated on</i>	<i>Updated</i>

7. **SUBMITTED BY: (contact person)**

<i>Name</i>	<i>Department</i>	<i>Phone</i>	<i>Email</i>
Laurie Cook	Biology	X5757	lcook@brockport.edu

8. **COMMITTEES TO COPY: (Senate office use only)**

<b>Standing Committee</b>	<b>Forwarded For Approval To</b>	<b>Dates</b>
<input type="checkbox"/> Enrollment Planning & Policies	Committee for approval	1/17/2018
<input type="checkbox"/> Faculty & Professional Staff Policies	Executive Committee	2/19/2018
<input type="checkbox"/> General Education & Curriculum Policies	GED to Vice Provost	
<input type="checkbox"/> Graduate Curriculum & Policies	Senate	2/26/2018
<input type="checkbox"/> Student Policies	College President	
<input checked="" type="checkbox"/> Undergraduate Curriculum & Policies	OTHER	
* follow special Gen Ed procedures for submission of General Education proposals at "How to Submit Proposals" on our Website.		
	REJECTED -WITHDRAWN	

NOTES:

2) Provide a side-by-side comparison of all the courses in the existing and proposed revised program that clearly indicates all new or significantly revised courses, and other changes.

Existing Major in Biology (64-65 credits; 37-40 credits at the 300 and 400 level)	Proposed Major in Biology (64-65 credits; 37-40 credits at the 300 and 400 level)
<p><b>Required Core BIO Major Courses (16 Cr)</b>            BIO 201 Biology I 4 Cr            BIO 202 Biology II 4 Cr</p>	<p><b>Required Core BIO Major Courses (19 Cr)</b>            BIO 201 Biology I 4 Cr            BIO 202 Biology II 4 Cr</p>
<p>BIO 301 Cellular Biochemistry 4 Cr            BIO 302 Genetics 4 Cr</p>	<p>BIO 310 Biological Chemistry 3 Cr            BIO 302 Genetics 4 Cr            BIO 315 Cell Biology 3 Cr            BIO 311 Biological Chemistry Lab 1 Cr</p>
<p><b>20 Credits of 300/400-level Electives Required</b>            *maximum 8 Cr at 300-level allowed            *must include two 400-level lab courses</p>	<p><b>17 Credits of 300/400-level Electives Required</b>            *maximum 8 Cr at 300-level allowed            *must include two 400-level lab courses</p>
<p><b>Senior Capstone</b>            BIO 498 Senior Seminar 1 Cr</p>	<p><b>Senior Capstone</b>            BIO 498 Senior Seminar 1 Cr  <b>OR</b>            BIO 493 Honors Thesis 1 Cr</p>
<p><b>Minimum Major Total: 37 Cr</b></p>	<p><b>Minimum Major Total: 37 Cr</b></p>
<p><b>Chemistry requirements:</b>            CHM 205 College Chemistry I 4 Cr            CHM 206 College Chemistry II 4 Cr            CHM 305 Organic Chemistry I 4 Cr</p>	<p><b>Chemistry requirements:</b>            CHM 205 College Chemistry I 4 Cr            CHM 206 College Chemistry II 4 Cr            CHM 305 Organic Chemistry I 4 Cr</p>
<p>CHM 306 Organic Chemistry II 4 Cr  <b>OR</b>            CHM 313 Quantitative Chemical Analysis 4 Cr</p>	<p>CHM 306 Organic Chemistry II 4 Cr  <b>OR</b>            CHM 313 Quantitative Chemical Analysis 4 Cr</p>
<p><b>Math requirements:</b>            Choose one: MTH201 Calculus 4 Cr                              MTH243 Elementary Statistics 3 Cr                              ENV437 Biostatistics 3 Cr</p>	<p><b>Math requirements:</b>            Choose one: MTH201 Calculus 4 Cr                              MTH243 Elementary Statistics 3 Cr                              ENV437 Biostatistics 3 Cr</p>
<p><b>Physics requirements:</b>            PHS 205-210 Intro to Physics I &amp; II w/lab 8 Cr  <b>OR</b>            PHS 235-240 Physics I &amp; II w/lab 8 Cr</p>	<p><b>Physics requirements:</b>            PHS 205-210 Intro to Physics I &amp; II w/lab 8 Cr  <b>OR</b>            PHS 235-240 Physics I &amp; II w/lab 8 Cr</p>
<p><b>Co-requisite Requirement: 27-28 credits</b></p>	<p><b>Co-requisite Requirement: 27-28 credits</b></p>

3. A brief rationale for the changes (i.e. new direction of the field)

**Changes to the Core Curriculum Requirement:**

1. Our previous Core Curriculum consisted of BIO201& 202 (General Biology I & II), BIO301(Cellular Biochemistry) and BIO302 (Genetics). We are replacing BIO301 with the new courses BIO310 Biological Chemistry and BIO311 Biological Chemistry Laboratory and adding BIO315 Cell Biology to the Core.
  - a. BIO301 Cellular Biochemistry (4 cr) will be replaced by BIO310 Biological Chemistry (3 cr) and BIO311 Biological Chemistry Lab (1 cr).
  - b. BIO310 and BIO311 will serve as a comprehensive introduction to biochemistry for our majors, achieving necessary student learning outcomes for the degree and as prerequisites for our 400-level electives. This simplifies the old elective course progression for biochemistry through CHM306, BIO467, and BIO470 lab (and sometimes BIO468) and lessens the number of credits needed to deliver the Biochemistry learning outcomes for our majors.
  - c. Importantly, we have also decided to modernize our curriculum to include Cell Biology as a core requirement (new BIO315). With much debate over whether to require a biochemistry course OR a cell biology course as part of our Core Major Requirements, we came to the realization that our students need BOTH to be adequately prepared for graduation with a B.S. in Biology. This will enhance the prerequisite knowledge these majors have for our 400- elective courses.

Typical Progression through the major course requirements:

Progress to Graduation	Old Fall Semester	New Fall Semester	Old Spring Semester	New Spring Semester
<b>YEAR 1</b>	BIO201 (4) CHM205 (4) MTH201 (4)	BIO201 (4) CHM205 (4) MTH201 (4)	BIO202 (4) CHM206 (4)	BIO202 (4) CHM206 (4)
<b>YEAR 2</b>	BIO302 (4)  CHM305 (4)	BIO302 (4) <b>BIO315 (3)</b> CHM305 (4)	BIO301 (4)  CHM306 (4)	<b>BIO310 (3)</b> <b>BIO311(1) *Can choose to take the following Fall also</b> CHM306 (4)
<b>YEAR 3</b>	PHS205 (4) BIO elective (3-4)	PHS205 (4) BIO elective (3-4)	PHS210 (4) BIO elective (3-4)	PHS210 (4) BIO elective (3-4)
<b>YEAR 4</b>	400-level BIO lab (3-4) BIO elective (3)	400-level BIO lab (3-4) BIO elective (3)	400-level BIO lab (3-4) BIO elective (3) BIO498 (1)	400-level BIO lab (3-4) BIO elective (3) <b>*May not need if a 4-cr elective was already taken (totaling 17 elective credits)</b> BIO498 (1)

4. A description of any new courses

**BIO315 Cell Biology (A).** *A grade of C or better in both BIO201 & BIO202 for BIO and Med Tech majors, and CHM206.* Covers cellular structure and function and the interrelationship between them. Topics include cellular components, energy and metabolism, protein structure and function, membranes and transport, cell signaling, cytoskeleton, cell division and stem cells. *3 Cr. Fall*

**BIO310 Biological Chemistry (A).** *Prerequisite: a grade of C or better in both BIO201 & BIO202 for BIO and Med Tech majors, and CHM206.* A one-semester introduction to biochemistry concepts. Engages students in the chemical foundations of life, bioenergetics, enzyme regulation and kinetics, and cellular metabolism. Closed to students who have taken BIO468. *3 Cr. Spring*

**BIO311 Biological Chemistry Laboratory (A).** *Prerequisite or Corequisite: BIO310.* Illustrates biological chemistry concepts using hands-on examples. Students will work independently and in teams. Activities may include modules on making solutions, titrations and pH, generating standard curves, protein determination assays, gel electrophoresis, mammalian cell culture, fluorescence microscopy and Michaelis-Menten kinetics in a three hour per week lab. *1 Cr. Every Semester*

5. Staffing issues

**Related to BIO315 Cell Biology:** No additional staffing is required for this transition

**Related to BIO310 Biological Chemistry:** No additional staffing is required for this transition.

**Related to BIO311 Biological Chemistry Laboratory:** No additional staffing is required for this transition.

6. Resources, facilities that may be needed to implement the program

The Department can manage these curricular changes with existing resources and facilities, except the possibility that an extra laboratory TA may be needed for one section of the BIO 311 course.

7. Letters of support

- a) Letter of support from Dr. Laurie Cook, Interim Chair, Biology
- b) Letter of support from Dr. Maggie Logan, Chair, Chemistry & Biochemistry
- b) Letter of support from Dean Jose Maleikel, School of Arts and Sciences



The College at  
**BROCKPORT**  
STATE UNIVERSITY OF NEW YORK

**350 New Campus Drive  
Brockport, New York 14420**

December 6, 2017

To the Committee,

The Department of Biology is requesting College Senate Approval for a change in the major core requirements to the B.S. in Biology.

Specifically, we have changed the major in three ways.

- 1) We will now require a new revised core curriculum of Biological Chemistry with Lab (BIO310 & BIO311), Genetics (BIO302) and Cell Biology (BIO315).
  - a. BIO315 is a new 3-credit addition to the required courses.
  - b. The old BIO301 is being replaced with BIO310 and BIO311 for an equivalent credit requirement (4 cr course to one 3 cr course plus one 1 cr course)
- 2) We will reduce the number of upper-level elective credits from 20 credits to 17 credits to offset the credit increase resulting from the addition of the 3 credit BIO315 Cell Biology core course requirement.
- 3) We will add flexibility to the Senior Capstone requirement to allow either BIO498 Senior Seminar or BIO493 Honors Thesis.

The Department is in agreement that these changes will better prepare our students for our 400-level elective courses and will make our students more competitive upon graduation. Therefore, I fully support this proposal.

Sincerely,

Laurie B. Cook, Ph.D.  
Associate Professor & Interim Chair  
Biology

Letter of Support – Dean



The College at  
**BROCKPORT**  
STATE UNIVERSITY OF NEW YORK

School of Arts and Sciences

Date: 16 January 2018

To: Sandeep Singh  
President, College Senate

From: Jose Maliekal   
Dean, School of Arts and Sciences

Re: Proposal submitted by the Department of Biology to the College Senate to revise the Biology major

I write to endorse and support the proposal that the Department of Biology is submitting to the College Senate to revise the requirements of the Biology major. Proposed revisions stem from the department's desire to modernize the curriculum. In specific terms, the department is modifying the core courses of the major by replacing an existing four-credit course with the combination of a three-credit lecture course and a one-credit lab course and adding an additional three-credit course. The total number of required credits in the major will remain unchanged; elective credits will decrease from 20 to 17, however.

Though the curriculum revision requires the creation two new courses, the department is not seeking any additional resources. As a degree program that is approved by the College Senate, and for which student demand is high, the Biology major will continue to enjoy the support of the Dean's Office.



## Letter of Support – Chair Chemistry & Biochemistry



The College at  
**BROCKPORT**  
STATE UNIVERSITY OF NEW YORK

Department of Chemistry and Biochemistry

January 16, 2018

Laurie Cook  
Associate Professor and Interim Chair  
Department of Biology  
The College at Brockport, SUNY

Dear Laurie:

I am writing on behalf of the Department of Chemistry and Biochemistry in support of the proposed changes in the Biology major, including the new courses that have been created. Because the course changes will also impact the course requirements for our Biochemistry major, we have looked carefully at the new courses and the sequence. We are happy to support your proposal.

Sincerely yours,

*Margaret E Logan*

Margaret E. Logan, PhD  
Associate Professor and Chair  
Department of Chemistry and Biochemistry  
585-395-5594  
mlogan@brockport.edu

