



Senate Document Routing Sheet
EPPC Documents

DATE: 10/16/15

The following **action item** was passed by the Academic Senate on **October 15, 2015**, and is being submitted to you for your consideration and appropriate action.

Name	Approved as passed	Approved With Changes Indicated in Notes below	Return for Further Discussion OR Return to Senate	Initials	Date
Bill Loker	✓			WL	10/20/15
Susan Elrod	✓			SE	10/23/15
PLEASE RETURN TO SENATE OFFICE					
Russ Mills	✓			RM	10/29/15
Paul Zingg	✓			PZ	10/29/15
PLEASE RETURN TO SENATE OFFICE FOR COMMITTEE CHAIR					

Name	Approved As passed	Approved With Changes indicated above	Return for Further Discussion OR Return to Senate	Initials	Date
Betsy Boyd					

Name	Responsibility	Initials	Date
Ann Willson/EM	Upload as EM		
Senate Coordinator	File in Senate Office		

SEN #	EM# Issued	Action Item(s)
14-15		Significant Change in B.S. in Biochemistry

Notes

Undergraduate Program Significant Change

Program Name: BS in Biochemistry

Complete only if applicable

Program named above is:

Option within _____
(degree program name)

Advising Pattern within _____
(option name)

within _____
(degree program name)

Minor

Certificate

Changes being made affect a subject matter preparation or credential program.

Department Contact(s) w/phone #(s):

Christopher Nichols (x5541), Randy Miller (x5259)

Required Signatures

The Department of Chemistry and Biochemistry
has reviewed and approved these significant changes

[Signature]
Chair, Department Curriculum Committee

4/7/15
Date

[Signature]
Department Chair

4/16/15
Date

The College of Natural Sciences
has reviewed and approved these significant changes

[Signature]
Chair, College Curriculum Committee

4/16/15
Date

[Signature]
College Dean

4/16/15
Date

Send signature page with proposal attached to Curriculum Services at Academic Affairs,
zip 110

AA Review Completed

9/15/15
Date

Note: The department will be notified on the of dates for EPPC, Academic Senate, and Chancellor's Office (if applicable) review and number of copies needed.

Proposal for Significant Changes

- I. Program name and level (undergraduate or graduate)
Bachelor of Science in Biochemistry (undergraduate)
 - A. Academic year of intended implementation.
2016-2017
 - B. Name of the department and college submitting the proposal.
Department of Chemistry and Biochemistry
 1. Identify the unit, which will have primary responsibility for the program.
Department of Chemistry and Biochemistry
 2. Name, title, and rank of the individual(s) primarily responsible for drafting the proposed program change.
Christopher Nichols, Professor, Department of Chemistry and Biochemistry
 3. How many declared students are currently in the program.
127 as of 3/18/15
- II. Provide an **abstract**, no longer than one page, that describes why you are making these changes and how they are related to the University Strategic Plan, the Academic Plan, the Diversity Action Plan (see definition and Task 3.1) and your most recent academic program review (i.e. Five Year Review or Accreditation).

The Department of Chemistry and Biochemistry is making changes to several courses:

- **Reduction of CHEM 381 from 3.0 units to 2.0 units and removal of its WP status – this is a lab course and its focus will become primarily on the lab experiments and lab reports; mastery in written communication will now be provided by a new course (CHEM 401).**
- **Removal of CHEM 400 (Senior Seminar, 1.0 unit) from the program – mastery in oral communication will now be provided by a new course (CHEM 401).**
- **Addition of a new course: CHEM 401, Communicating Chemistry (3.0 units, WP) – this course will integrate chemistry content, written communication, and oral communication for seniors in this program. The written communication objective will be better met by this course compared to CHEM 381, where it wasn't well integrated into the lab course. The oral communication objective will also be better met by this course compared to CHEM 400, which had no specific chemistry content. An application for WP status for this course has been approved by UWC. Note that CHEM 381 currently has both Major Course Substitution Status (for GE Area UD-B) and Writing Intensive Course Substitution Status. Proposals for CHEM 401 to be counted as a Major Course Sub (UD-B) and a WI-Sub have been approved by CAB.**

The primary purpose of these changes is to do a better job for students in all our programs (CHEM and BCHM) in improving our students' competencies in written communication and oral communication; CHEM 401 has been designed to give students many opportunities for such improvement. This applies directly to both Strategic Priority #1 (in the Strategic Plan) and Strategic Goal #1 (in the Academic Plan), which both are about enhancing student learning both inside and outside the classroom.

However, these changes increase the number of units required of students in the Biochemistry (BS) Major from 75-77 to 76-78. The “heart” of the BCHM program are CHEM 451, 452, and 453M (Biochemistry courses and labs) – and all of the other courses in the program are essential pre-requisites, co-requisites, and/or additional coursework required by the American Society for Biochemistry and Molecular Biology (see table). Since we are adding 1 unit to a program with over 60 required units, it must be handled as a “Significant Program Change”.

Courses	Area	Current Program units	New Program units
MATH 120, 121, 220	Calculus	12	12
PHYS 202A, 202B	Physics	8	8
BIOL 151, 360, 371	Core Biology	12	12
CHEM 111, 112, 270, 320, 370, 370M	Core Chemistry	21	21
CHEM 331, 361, 381	Advanced Chem & Labs	9*	8
CHEM 401 (WP)	Communication	1	3
CHEM 451, 452, 453M	Biochemistry	9	9
Elective	Elective	3-5	3-5
TOTAL		75-77	76-78

III. Resources and program support.

A. Indicate additional faculty or staff support positions needed to implement the program changes.

The reduction of CHEM 381 from 3.0 units to 2.0 units reduces faculty WTU by 1.3. The removal of CHEM 400 reduces faculty WTU by 1.3. The addition of CHEM 401 requires 3.3 faculty WTU (2 hrs discussion; 2 hrs activity). The apparent increase in WTU of 0.7 units is offset by the removal of another course (CHEM 362) in the Department of Chemistry and Biochemistry (a course that’s required in the CHEM degree, not the BCHEM degree). No additional faculty or staff resources will be required.

B. Indicate changes in or additional space and facilities that would be needed.

None

C. List additional library resources, equipment, and other specialized materials that will be needed.

None. The resources currently being used in CHEM 400 and CHEM 381 will be more than enough for use in CHEM 401.

D. A statement by the responsible administrator(s) should be attached to the proposal.

IV. Program details.

A. Total number of units required for the revised program. Indicate if this is a change from the current number of units and the reason for the change. If this is a high unit program, please indicate whether you will be asking for any modification for General Education requirements.

76-78 units. This is a change (+1) from the current program, which requires 75-77 units. The program currently has FOUR (4) GE modifications, three of which will remain and one of which will be replaced by another; they are summarized below:

GE Modification	Current program	Revised program
Advanced Course Sub: Area A4	MATH 120	MATH 120
Advanced Course Sub: Area B1	CHEM 111	CHEM 111
Advanced Course Sub: Area B2	BIOL 151	BIOL 151
Major Course Sub: Upper-Div. Sci.	CHEM 381	CHEM 401 (proposed)

These 4 modifications thus require students in this program to take only 36 additional units within the GE program (3 each in A1, A2, A3, C1, C2, D1, D2, E, HIST, POLS, UD-C, and UD-D). Even with 76-78 units in the major, students still have 6-8 units of electives to fulfill to reach 120 units total.

- B. List courses required for the program that are added, deleted, or changed. Mode of delivery is either regular, on-line, or hybrid. More than mode of delivery can be indicated. Please add rows as necessary with one row for each course.

Course Number	Course Title	Change	Units of Credit	Prerequisites and/or Recommended Background	Course Description if New Course	Mode of Delivery
CHEM 381	Integrated Chemistry Laboratory I	Change in Units	2.0 (from 3.0)	CHEM 370M; CHEM 331 (concurrent); CHEM 361 (concurrent)	n/a	Regular
CHEM 400	Senior Seminar in Chemistry	Removed	1.0	Senior Standing	n/a	Regular
CHEM 401	Communicating Chemistry	NEW	3.0	CHEM 320, CHEM 370; One of CHEM 331, 361, 451	See below	Regular

CHEM 401 Course Description:

This course will help students improve their skills in written and oral communication of chemical and biochemical information. The course will center on one particular topic within chemistry and biochemistry (chosen by the instructor) and students will be asked to prepare short papers, long papers, and oral presentations focused on that topic. 2.0 units discussion; 1.0 unit activity.

- C. List new and changed elective courses for the revised program. Indicate which are added, deleted, or changed. Mode of delivery is either regular, on-line, or hybrid. Please add rows as necessary with one row for each course.

There are no changes to the electives

Note: The catalog defines prerequisites in the following manner “You must fulfill specific course work or other conditions before you will be allowed to enroll in the course. Prerequisites may be waived by the faculty member only on approval of a formal petition which fully outlines the equivalent attainment.” Recommended background may be preferable in some instances. The catalog defines recommended background in the following manner “It is recommended that you have prior course work or knowledge; the term is used to advise and caution, but not to prevent enrollment.”

- D. For new, changed, and/or deleted courses identify the primary faculty responsible for those courses and how the shift in responsibilities will be accounted for by the program.

CHEM 381 (units modified): Currently team-taught by various faculty including D. Ball, E. Wasinger, D. Edwards, J. Zhang, and others. This will continue, including involving Prof. Monica So, newly hired for Fall 2015.

CHEM 400 (deleted): Recently taught by R. Miller and C. Nichols. These faculty will continue to have roles in teaching physical chemistry, organic chemistry, GE chemistry, and in administration (Department Chair, chair of CAB, etc).

CHEM 401 (new): The New Course Proposal has Prof. E. Wasinger teaching CHEM 401 for the first time in Fall 2016. This will be possible due to his removal from the team teaching CHEM 381 that semester (thanks in part to the hire of Prof. So). In future any of the faculty could teach this course: minor shifts like this in teaching responsibilities happen in the Department of Chemistry and Biochemistry every year.

- E. Explanation of any special program characteristics (e.g., terminology, credit units required, types of coursework, etc.).

Please see the table on page 2 of this proposal: it lists the various courses in the various disciplines required as pre-requisites or co-requisites for the upper-division courses in Biochemistry (451, 452, 453M) that are the heart of the program.

- F. Provision for meeting accreditation requirements, where applicable, and anticipated date of accreditation request.

The Department of Chemistry and Biochemistry is currently certified by the American Chemical Society to offer degrees in both Chemistry and Biochemistry. Our certification was based on our current program which meets their standards for program content. These includes core chemistry courses, core biology courses, supporting math/physics courses, advanced chemistry courses (with lab), and the biochemistry courses. The next ACS review of our program is scheduled for 2017.

- G. Other program requirements.

1. Undergraduate programs: Catalog number and title of the current writing proficiency (WP) course and replacement course, if applicable.

CHEM 381 – Integrated Chemistry Laboratory I – is the current WP course. This will be replaced by CHEM 401 – Communicating Chemistry. A WP application for CHEM 401 has been approved by UWC.

2. Graduate programs: Indicate how the graduate literacy requirement is met. **n/a**
 3. Graduate programs: indicate the culminating activity options for the program **n/a**
- H. For undergraduate programs, include a revised Major Academic Plan (MAP) with the proposal. If you have questions or need help, contact Academic Advising Programs. **See page 6**
- I. Catalog copy of the current program. **See pages 7-9**
- J. Complete catalog copy for the revised program, including full degree requirements, admission, and completion requirements. See the current University Catalog for correct format and follow it exactly. Before the proposal is submitted to Academic Affairs (for undergraduate options) or to the Office of Graduate Studies (for graduate program options), it may be helpful to review catalog copy with Academic Publications. **See pages 10-12**

Please number all pages of the proposal. Attach the Undergraduate Program Signature form or the Graduate Program Signature form to the front of the proposal and submit to Academic Affairs or the Office of Graduate Studies after all department and college reviews are complete.

California State University, Chico
MAJOR ACADEMIC PLAN (MAP)

Bachelor of Science in Biochemistry

Major: **Biochemistry (B.S.)**

Degree Units: **120**
Major Units: **76-78**
Elective Units: **6-8**

First Semester		Second Semester	
BIOL 151 (GE Area B2)	4	CHEM 112 [*C-]	4
CHEM 111 (GE Area B1) [*C-]	4	MATH 121 [*C-]	4
MATH 120 (GE Area A4) [*C-]	4	PHYS 202A (GE Area B1) [*C-]	4
GE Area A [*C-]	3	GE Area A [*C-]	3
Total Units	15	Total Units	15

Third Semester		Fourth Semester	
CHEM 270 [*C-]	4	CHEM 370 [*C-]	3
MATH 220	4	CHEM 370M	2
PHYS 202B	4	GE Area C	3
GE Area A [*C-]	3	GE Area D	3
		GE Area D	3
Total Units	15	Total Units	14

Fifth Semester		Sixth Semester	
CHEM 320	4	BIOL 371 (WP) [*C-]	4
CHEM 331 (FA)	3	CHEM 452 (SP)	3
CHEM 451	3	CHEM 453M	3
GE Area E	3	GE Area C	3
HIST 130 or POLS 155	3	GE UD Pathway or Elective	3
Total Units	16	Total Units	16

Seventh Semester		Eighth Semester	
BIOL 360	4	Biochem UD Selection	3-5
CHEM 361 (FA)	3	GE UD Pathway	3
CHEM 381	2	HIST 130 or POLS 155	3
CHEM 401 (FA) (WP) [*MOD] [*C-]	3	Elective	3
GE UD Pathway	3	Elective (0-2 units as needed)	0-2
Total Units	15	Total Units	14

Comments
[*MOD] This plan includes Modifications to General Education.
[*C-] C- or Better is required.

Notes
Transfer Students: It is recommended that you review your Degree Progress Report (DPR) in your Student Center, meet with your Major Department Advisor, and meet with an Academic Advisor in SSC 220 to review General Education, Major, and Graduation requirements.
It is recommended that you meet with your major advisor early in your academic career.
Complete a minimum of 4 Writing Intensive (WI) courses-one will be met by your Written Communication Course and one by your Capstone Course; select 2 additional WI courses.
Select a GE Capstone Course in your Upper-Division Pathway, or substitute an approved Major Capstone course from the GE Capstone Requirement.
Consider meeting the United States Diversity and Global Cultures requirements within GE courses.
Apply to graduate one year before anticipated graduation date.

The Bachelor of Science in Biochemistry

Total Course Requirements for the Bachelor's Degree: 120 units

See [Bachelor's Degree Requirements](#) in the *University Catalog* for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

A suggested Major Academic Plan (MAP) has been prepared to help students meet all graduation requirements within four years. You can view MAPs on the [Degree MAPs](#) page in the *University Catalog* or you can request a plan from your major advisor.

General Education Pathway Requirements: 48 units

See [General Education](#) in the *University Catalog* and the [Class Schedule](#) for the most current information on General Education Pathway Requirements and course offerings.

This major has approved GE modifications. See below for information on how to apply these modifications.

- BIOL 151 is an approved advanced course substitution for Life Sciences (B2).
- CHEM 381 is an approved major course substitution for Upper-Division Natural Sciences

Diversity Course Requirements: 6 units

See [Diversity Requirements](#) in the *University Catalog*. Most courses taken to satisfy these requirements may also apply to [General Education](#).

Literacy Requirement:

See [Mathematics and Writing Requirements](#) in the *University Catalog*. Writing proficiency in the major is a graduation requirement and may be demonstrated through satisfactory completion of a course in your major which has been designated as the Writing Proficiency (WP) course for the semester in which you take the course. Students who earn below a C- are required to repeat the course and earn a C- or higher to receive WP credit. See the [Class Schedule](#) for the designated WP courses for each semester. You must pass ENGL 130I or JOUR 130I (or equivalent) with a C- or higher before you may register for a WP course.

Course Requirements for the Major: 75-77 units

Completion of the following courses, or their approved transfer equivalents, is required of all candidates for this degree.

Lower-Division Requirements: 36 units

9 courses required:

BIOL 151 Principles of Cellular and Molecular Biology 4.0 FS GE

Prerequisites: Recommend CHEM 111 or concurrent enrollment.

CHEM 111 General Chemistry 4.0 FS GE

Prerequisites: Completion of ELM requirement; second-year high school algebra; one year high school chemistry. (One year of high school physics and one year of high school mathematics past Algebra II are recommended.)

CHEM 112 General Chemistry 4.0 FS

Prerequisites: CHEM 111 with a grade of C- or better.

CHEM 270 Organic Chemistry 4.0 FS

Prerequisites: CHEM 112.

MATH 120 Analytic Geometry and Calculus 4.0 FS GE

Prerequisites: Completion of ELM requirement; both MATH 118 and MATH 119 (or high school equivalent); a score that meets department guidelines on a department administered calculus readiness exam.

MATH 121 Analytic Geometry and Calculus 4.0 FS

Prerequisites: MATH 120.

MATH 220 Analytic Geometry and Calculus 4.0 FS

Prerequisites: MATH 121.

PHYS 202A General Physics 4.0 FS GE

Prerequisites: High school physics or faculty permission. High school trigonometry and second-year high school algebra or equivalent (MATH 051 and MATH 118 at CSU, Chico).

PHYS 202B General Physics 4.0 FS

Prerequisites: PHYS 202A with a grade of C- or higher.

Upper-Division Requirements: 39-41 units

12 courses required:

BIOL 360 Genetics 4.0 FS

Prerequisites: BIOL 153 or permission of instructor.

BIOL 371 Microbiology 4.0 FS WP

Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a grade of C- or higher; BIOL 151, BIOL 152, BIOL 153, or faculty permission.

CHEM 320 Quantitative Analysis 4.0 FS

Prerequisites: CHEM 112 with a grade of C- or higher.

CHEM 331 Physical Chemistry 3.0 FA

Prerequisites: CHEM 320, MATH 220; PHYS 202A & PHYS 202B or PHYS 204A, PHYS 204B, & PHYS 204C.

CHEM 361 Inorganic Chemistry 3.0 FA

Prerequisites: CHEM 320, MATH 220; PHYS 202A & PHYS 202B or PHYS 204A, PHYS 204B, & PHYS 204C.

CHEM 370 Organic Chemistry 3.0 FS

Prerequisites: CHEM 270 with a grade of C- or higher.

CHEM 370M Organic Chemistry Laboratory 2.0 FS

Prerequisites: Concurrent enrollment in or prior completion of CHEM 370.

CHEM 381 Integrated Chemistry Laboratory I 3.0 FA WP

Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a grade of C- or higher, CHEM 270, CHEM 331 (may

be taken concurrently), CHEM 361 (may be taken concurrently).

CHEM 400	Senior Seminar in Chemistry	1.0	SP
CHEM 451	Biochemistry	3.0	FS
Prerequisites: CHEM 370 with a grade of C- or higher.			
CHEM 452	Biochemistry	3.0	SP
Prerequisites: CHEM 451.			
CHEM 453M	Biochemistry Laboratory	3.0	SP
Prerequisite: CHEM 320, CHEM 370M, CHEM 451.			

1 course selected from:

BIOL 409	Molecular Biology	4.0	SP
Prerequisites: BIOL 153, BIOL 360.			
BIOL 411	Cell Biology	4.0	FA
Prerequisites: BIOL 153, BIOL 360.			
BIOL 412	Bacterial Physiology	4.0	S1
Prerequisites: BIOL 371, BIOL 360, CHEM 270. CHEM 451 is recommended.			
BIOL 414	Plant Physiology	4.0	SP
Prerequisites: NSCI 102 or BIOL 153; CHEM 108 or CHEM 270; or faculty permission.			
BIOL 416	Vertebrate Physiology	4.0	FS
Prerequisites: BIOL 152, BIOL 153; CHEM 108 or CHEM 270.			
BIOL 466	Immunology	4.0	SP
Prerequisites: BIOL 153.			
BIOL 470	Medical Bacteriology	5.0	FA WP
Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a C- or higher; BIOL 371, BIOL 466, CHEM 270.			
BIOL 472	Microbial Genetics	4.0	FA
Prerequisites: BIOL 360. BIOL 371 is recommended.			
BIOL 476	General Virology	4.0	SP
Prerequisites: BIOL 151, BIOL 371. Recommended: BIOL 360.			
CHEM 332	Physical Chemistry	3.0	SP
Prerequisites: CHEM 331.			

Grading Requirement:

All courses taken to fulfill major course requirements must be taken for a letter grade except those courses specified by the department as Credit/No Credit grading only.

Advising Requirement:

Advising is mandatory for all majors in this degree program. Consult your undergraduate advisor for specific information.

The Bachelor of Science in Biochemistry

Total Course Requirements for the Bachelor's Degree: 120 units

See [Bachelor's Degree Requirements](#) in the *University Catalog* for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

A suggested Major Academic Plan (MAP) has been prepared to help students meet all graduation requirements within four years. You can view MAPs on the [Degree MAPs](#) page in the *University Catalog* or you can request a plan from your major advisor.

General Education Pathway Requirements: 48 units

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This major has approved GE modifications. See below for information on how to apply these modifications.

- BIOL 151 is an approved advanced course substitution for Life Sciences (B2).
- CHEM 381 is an approved major course substitution for Upper-Division Natural Sciences

Diversity Course Requirements: 6 units

See [Diversity Requirements](#) in the *University Catalog*. Most courses taken to satisfy these requirements may also apply to [General Education](#).

Literacy Requirement:

See [Mathematics and Writing Requirements](#) in the *University Catalog*. Writing proficiency in the major is a graduation requirement and may be demonstrated through satisfactory completion of a course in your major which has been designated as the Writing Proficiency (WP) course for the semester in which you take the course. Students who earn below a C- are required to repeat the course and earn a C- or higher to receive WP credit. See the [Class Schedule](#) for the designated WP courses for each semester. You must pass ENGL 130I or JOUR 130I (or equivalent) with a C- or higher before you may register for a WP course.

Course Requirements for the Major: ~~75-77~~ 76-78 units

Completion of the following courses, or their approved transfer equivalents, is required of all candidates for this degree.

Lower-Division Requirements: 36 units

9 courses required:

BIOL 151 Principles of Cellular and Molecular Biology 4.0 FS GE

Prerequisites: Recommend CHEM 111 or concurrent enrollment.

CHEM 111 General Chemistry 4.0 FS GE

Prerequisites: Completion of ELM requirement; second-year high school algebra; one year high school chemistry. (One year of high school physics and one year of high school mathematics past Algebra II are recommended.)

CHEM 112 General Chemistry 4.0 FS

Prerequisites: CHEM 111 with a grade of C- or better.

CHEM 270 Organic Chemistry 4.0 FS

Prerequisites: CHEM 112.

MATH 120 Analytic Geometry and Calculus 4.0 FS GE

Prerequisites: Completion of ELM requirement; both MATH 118 and MATH 119 (or high school equivalent); a score that meets department guidelines on a department administered calculus readiness exam.

MATH 121 Analytic Geometry and Calculus 4.0 FS

Prerequisites: MATH 120.

MATH 220 Analytic Geometry and Calculus 4.0 FS

Prerequisites: MATH 121.

PHYS 202A General Physics 4.0 FS GE

Prerequisites: High school physics or faculty permission. High school trigonometry and second-year high school algebra or equivalent (MATH 051 and MATH 118 at CSU, Chico).

PHYS 202B General Physics 4.0 FS

Prerequisites: PHYS 202A with a grade of C- or higher.

Upper-Division Requirements: ~~39-41~~ 40-42 units

12 courses required:

BIOL 360 Genetics 4.0 FS

Prerequisites: BIOL 153 or permission of instructor.

BIOL 371 Microbiology 4.0 FS WP

Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a grade of C- or higher; BIOL 151, BIOL 152, BIOL 153, or faculty permission.

CHEM 320 Quantitative Analysis 4.0 FS

Prerequisites: CHEM 112 with a grade of C- or higher.

CHEM 331 Physical Chemistry 3.0 FA

Prerequisites: CHEM ~~320~~ 370, MATH 220; PHYS 202A & PHYS 202B or PHYS 204A, PHYS 204B, & PHYS 204C.

CHEM 361 Inorganic Chemistry 3.0 FA

Prerequisites: CHEM ~~320~~ 370, MATH 220; PHYS 202A & PHYS 202B or PHYS 204A, PHYS 204B, & PHYS 204C.

CHEM 370 Organic Chemistry 3.0 FS

Prerequisites: CHEM 270 with a grade of C- or higher.

CHEM 370M Organic Chemistry Laboratory 2.0 FS

Prerequisites: Concurrent enrollment in or prior completion of CHEM 370.

CHEM 381	Integrated Chemistry Laboratory I	3.0 2.0	FA FS	WP
Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a grade of C- or higher, CHEM 270 370M, CHEM 331 (may be taken concurrently), CHEM 361 (may be taken concurrently).				
CHEM 400	Senior Seminar in Chemistry	- 4.0	SP	-
CHEM 401	Communicating Chemistry	3.0	FA	
Prerequisites: CHEM 320, CHEM 370; One of CHEM 331, CHEM 361, CHEM 451.				
CHEM 451	Biochemistry	3.0	FS	
Prerequisites: CHEM 370 with a grade of C- or higher.				
CHEM 452	Biochemistry	3.0	SP	
Prerequisites: CHEM 451.				
CHEM 453M	Biochemistry Laboratory	3.0	SP	
Prerequisite: CHEM 320, CHEM 370M, CHEM 451 (may be taken concurrently)				

1 course selected from:

BIOL 409	Molecular Biology	4.0	SP	
Prerequisites: BIOL 153, BIOL 360.				
BIOL 411	Cell Biology	4.0	FA	
Prerequisites: BIOL 153, BIOL 360.				
BIOL 412	Bacterial Physiology	4.0	SI	
Prerequisites: BIOL 371, BIOL 360, CHEM 270. CHEM 451 is recommended.				
BIOL 414	Plant Physiology	4.0	SP	
Prerequisites: NSCI 102 or BIOL 153; CHEM 108 or CHEM 270; or faculty permission.				
BIOL 416	Vertebrate Physiology	4.0	FS	
Prerequisites: BIOL 152, BIOL 153; CHEM 108 or CHEM 270.				
BIOL 466	Immunology	4.0	SP	
Prerequisites: BIOL 153.				
BIOL 470	Medical Bacteriology	5.0	FA	WP
Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a C- or higher; BIOL 371, BIOL 466, CHEM 270.				
BIOL 472	Microbial Genetics	4.0	FA	
Prerequisites: BIOL 360. BIOL 371 is recommended.				
BIOL 476	General Virology	4.0	SP	
Prerequisites: BIOL 151, BIOL 371. Recommended: BIOL 360.				
CHEM 332	Physical Chemistry	3.0	SP	
Prerequisites: CHEM 331.				

Grading Requirement:

All courses taken to fulfill major course requirements must be taken for a letter grade except those courses specified by the department as Credit/No Credit grading only.

Advising Requirement:

Advising is mandatory for all majors in this degree program. Consult your undergraduate advisor for specific information.

DATE: September 9, 2015

TO: Susan Elrod, Interim Provost

CC: Christopher Nichols, CHEM
University Writing Committee (UWC)

FROM: Chris Fosen, Chair/UWC

SUBJECT: New WP Course for CHEM

The University Writing Committee approves CHEM 401 as a Writing Proficiency course for CHEM (BS), CHEM (BA), and BCHM (BS). The course underwent a full review by the UWC and we found it to be a strong addition to the program and support its status as WP.

Before the course is taught, we encourage the instructor to:

- 1 Decide which of the larger and smaller writing assignments listed in the application will be used in the class. A few standard writing components (like several smaller and one larger) each semester will help maintain uniformity and potential future assessment.
- 2 Clarify the objectives for each assignment. Make sure assignments include language about audience, purpose, genre, writing process, revision, and how student work will be assessed.

CAB Meeting Minutes – April 22, 2015, 3:00 – 5:00 pm, SSC 122/124

1. Announcements
 - a. Pathway Coordinator Election Results
2. Approval of Minutes from 4/8/15 (attached) **Approved.**
3. Interdisciplinary Sustainability and Resilience Major (Sistrunk) **Cancelled**
4. Required Fixes (follow-up)
 - a. BIOL 102 cross-listed with NSCI 102 (in B2) **Now Fixed**
 - b. “Major Mod” page not yet updated
5. CMSD 435 - Capstone Substitution Course (old application attached)

This is a Spring only course which has been exceeding enrollment each time it is offered. Over 80 students are expected to enroll Spring 16. Department has been telling students it will no longer be a Capstone Sub, but this is causing issues for students who have been planning for it and don't have other options. The students in this program move through as a cohort and follow a specific schedule; they need this course. There is nothing to be done about the Spring 16 offering, but a motion was approved to rescind Capstone Sub status effective 16/17. CAB will work with department to help them reinstate it if they are willing. CAB would also like Bill Loker's input.
6. Substitutions Proposals (all attached)
 - a. **CHEM 401 (Major Course Sub for CHEM/BCHM) Approved**
 - b. **CHEM 401 (WI Sub) Approved**
 - c. GERM 390 (WI Sub) **Approved after discussion about the required writing being in German. Chris noted that there is no mandate that a WI Sub must be in English.**
 - d. HCSV 211 (WI Sub) **Defeated after much discussion about the quantity of writing required. This is a new course and there are no examples of previous assignments. Some members felt that the focus on the writing process was sufficient even though the amount of writing was not. Others disagreed and felt there must be more writing actually done. CAB will work with instructor and department in the Fall semester specifically regarding details and examples of assignments 2 and 3. Department can reapply in September after working with CAB.**
7. New Course Proposals or GE Course Changes (all attached)