

LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No. 09-6 08-14a	UWUCC Action-Date: T-9/2/08 W-2/3/10	Senate Action Date:
------------------	------------------	--------------------------------------	--	---------------------

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person Anne Kondo	Email Address akondo@iup.edu
Proposing Department/Unit Chemistry	Phone 74595

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

1. Course Proposals (check all that apply)		
<input type="checkbox"/> New Course	<input type="checkbox"/> Course Prefix Change	
<input type="checkbox"/> Course Revision	<input type="checkbox"/> Course Number and/or Title Change	
<input type="checkbox"/> Course Deletion	<input type="checkbox"/> Catalog Description Change	
<hr/>		
<i>Current Course prefix, number and full title</i>	<i>Proposed course prefix, number and full title, if changing</i>	
2. Additional Course Designations: check if appropriate		
<input type="checkbox"/> This course is also proposed as a Liberal Studies Course.	<input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African)	
<input type="checkbox"/> This course is also proposed as an Honors College Course.		
3. Program Proposals		
<input type="checkbox"/> New Degree Program	<input type="checkbox"/> Program Title Change	
<input type="checkbox"/> New Minor Program	<input type="checkbox"/> New Track	
<input type="checkbox"/> Catalog Description Change	<input checked="" type="checkbox"/> Program Revision	
<input type="checkbox"/> Other		
<hr/>		
<i>Current program name</i>	<i>Proposed program name, if changing</i>	
4. Approvals		
Department Curriculum Committee Chair(s)	<i>Wendy Lou Elcesse</i>	Date <i>11/20/07</i>
Department Chair(s)	<i>John Woolcock</i>	<i>11/28/07</i>
College Curriculum Committee Chair	<i>[Signature]</i>	<i>04/04/08</i>
College Dean	<i>[Signature]</i>	<i>11-4-08</i>
Director of Liberal Studies *		
Director of Honors College *		
Provost *	<i>Gerard W. Lelmann</i>	<i>8/29/08</i>
Additional signatures as appropriate: (include title)		
UWUCC Co-Chairs		

* where applicable

Received
 APR 04 2008
 Liberal Studies

Part I. Curriculum Proposal Cover Sheet

Part II. Description of Curriculum Change

1. Catalog description for the revised program in the appropriate form. This includes both the description about the program and the list of courses and credits for the revised program.

Chemistry

Bachelor of Science in Education

Degrees offered by the Department of Chemistry are the Bachelor of Science with a Chemistry major, the Bachelor of Science with a Chemistry/Pre-Medical Track, the Bachelor of Arts with a Chemistry major, and the Bachelor of Science in Education with a Chemistry major. A Pre-Medical concentration is available in the B.A. curricula. Preparatory programs for other professional schools can be developed for either degree. A minor in chemistry is also offered.

The B.S. degree with a Chemistry major is a professional degree and is certified by the American Chemical Society. The student completing this major should be qualified to assume a position in industry or government as a chemist or to pursue graduate studies leading to the M.S. or Ph.D. degree in chemistry, biochemistry, materials science, forensic science, or an associated field. The Pre-Medical Track includes all courses required for entrance into medical school and gives the student the flexibility of choosing medical school or graduate school after graduation.

The curriculum leading to the B.A. degree with a Chemistry major is designed to allow for the workable union of other disciplines with chemistry in such a way as to retain the fundamental science and mathematics requirements needed for a career in chemistry. A careful selection of electives will qualify the student for entrance into many fields in which there is an acute need for persons with scientific training, and, at the same time, satisfy the entrance requirements of various professional and graduate schools. This degree may also be of interest to students who have completed a significant number of semester hours in another degree program and decide they want to earn a degree in chemistry. The Pre-Medical concentration includes all courses required for entrance into medical school.

The B.A. degree with a Chemistry major can incorporate a complementary program in almost any other field in the university; some disciplines which make useful combinations include biology, business administration, computer science, criminology (forensic science), English (technical writing), geoscience, government, physics, and safety science. In particular, a student seeking a career in forensic science should major in chemistry.

Either degree in chemistry provides excellent preparation for entrance into a variety of professional schools, including dental, veterinary, pharmacy, chiropractic, and law. The student considering going to one of these professional schools after completion of a chemistry degree should work closely with his or her advisor and select additional courses as required by the professional school.

The curriculum leading to the B.S.Ed. degree with a Chemistry major is designed to prepare the student to teach chemistry at the secondary school level. Upon completion of the specified coursework and the requirements of the teacher certification process, the student is eligible for Pennsylvania certification by the Pennsylvania Department of Education. The B.S.Ed. degree with a Chemistry major program is also certified by the American Chemical Society.

Bachelor of Science in Education–Chemistry (*)

Liberal Studies: As outlined in Liberal Studies section with the following specifications: Mathematics: MATH 125 Natural Science: PHYS 111-121 and 112-122 Social Science: PSYC 101 Liberal Studies Electives: 3cr, MATH 126			48
College:			29
Preprofessional Education Sequence:			
COMM103	Digital Instructional Technology	3cr	
EDSP 102	Educational Psychology	3cr	
Professional Education Sequence:			
EDEX 301	Education of Students with Disabilities in Inclusive Secondary Settings	2cr	
EDSP 477	Assessment of Student Learning: Design and Interpretation of Educational Measures	3cr	
EDUC 242	Pre-Student Teaching Clinical Experience I	1cr	
EDUC 342	Pre-Student Teaching Clinical Experience II	1cr	
EDUC 441	Student Teaching	12cr	
EDUC 442	School Law	1cr	
EDUC 451	Teaching Science in the Secondary School	3cr	
Major:			32
Required Courses:			
CHEM 113	Concepts in Chemistry I	4cr	
CHEM 114	Concepts in Chemistry II (1)	4cr	
CHEM 214	Intermediate Inorganic Chemistry	2cr	
CHEM 231	Organic Chemistry I	4cr	
CHEM 232	Organic Chemistry II	4cr	
CHEM 321	Quantitative Analysis	4cr	
CHEM 341	Physical Chemistry I	4cr	
CHEM 343	Physical Chemistry Laboratory I	1cr	
CHEM 499	Problems in Chemistry Education	1cr	
Controlled Electives: (2)			4cr
Select 4cr from the following: CHEM 322, 342, 344, 351, 410, 411, BIOC 301, 311			
Other Requirements:			11
BIOL 111	Principles of Biology I	4cr	
GEOS 201	Foundations of Geology	4cr	
MATH 225	Calculus III	3 cr	
Free Elective:			0
Total Degree Requirements (#):			120
<p>(*) See requirements leading to teacher certification, titled “3-Step Process for Teacher Education,” in the College of Education and Educational Technology section of this catalog.</p> <p>(1) CHEM 111 and 112 can be substituted for CHEM 113 and 114.</p> <p>(2) A minimum of 6cr of Controlled Electives, including either CHEM 351 or BIOC 301, is required for the ACS-certified degree in Chemistry Education.</p> <p>(#) See advisory paragraph “Timely Completion of Degree Requirements” in the section on Requirements for Graduation.</p>			

2. Summary of changes:a. Table comparing old and new programs.

Bachelor of Science In Education - Chemistry*

(Current)

Liberal Studies: As outlined in Liberal Studies section with the following specifications:	50	
Mathematics: MATH 123, 124		
Natural Science: PHYS 111-121 and 112-122		
Social Science: PSYC 101		
Liberal Studies Electives: 0cr		
College:	29	
Preprofessional Education Sequence		
COMM 103	3cr	
EDSP 102	3cr	
Professional Education Sequence		
EDEX 301	2cr	
EDSP 477	3cr	
EDUC 242	1cr	
EDUC 342	1cr	
EDUS 441	12cr	
EDUC 442	1 cr	
EDUC 451	3cr	
Major:	32	
Required Courses:		
CHEM 113	4cr	
CHEM 114 (1)	4cr	
CHEM 214	2cr	
CHEM 231	4cr	
CHEM 232	4cr	
CHEM 321	4cr	
CHEM 341	4cr	
CHEM 343	1cr	
CHEM 499	1cr	
Controlled Electives (2)		
Select 4cr from the following:		
CHEM 322, 342, 344, 351, 410	4cr	
BIOC 301, 311		
Other Requirements:	8	
BIOL 111	4cr	
GEOS 111 or 113	3cr	
GEOS 112 pr 114	1 cr	
Free Electives:	1	
Total Degree Requirements (#):		120

(*) See requirements leading to teacher certification, titled "3-Step Process for Teacher Education," in the College of Education and Educational Technology section of this catalog.

(1) CHEM 111 and 112 can be substituted for CHEM 113 and 114.

(2) A minimum of 6cr of Controlled Electives, including either CHEM 351 or BIOC 301, is required for the ACS-certified degree in Chemistry Education.

(#) See advisory paragraph "Timely Completion of Degree Requirements" in the section on Requirements for Graduation.

Bachelor of Science in Education- Chemistry*

(Revised)

Liberal Studies: As outlined in Liberal Studies section with the following specifications:	48	
Mathematics: MATH 125		
Natural Science: PHYS 111-121 and 112-122		
Social Science: PSYC 101		
Liberal Studies Electives MATH 126		
College:	29	
Preprofessional Education Sequence		
COMM 103	3cr	
EDSP 102	3cr	
Professional Education Sequence		
EDEX 301	2cr	
EDSP 477	3cr	
EDUC 242	1cr	
EDUC 342	1cr	
EDUS 441	12cr	
EDUC 442	1 cr	
EDUC 451	3cr	
Major:	32	
Required Courses:		
CHEM 113	4cr	
CHEM 114 (1)	4cr	
CHEM 214	2cr	
CHEM 231	4cr	
CHEM 232	4cr	
CHEM 321	4cr	
CHEM 341	4cr	
CHEM 343	1cr	
CHEM 499	1cr	
Controlled Electives (2)		
Select 4cr from the following:		
CHEM 322, 342, 344, 351, 410	4cr	
BIOC 301, 311		
Other Requirements:	11	
BIOL 111	4cr	
GEOS 201	4cr	
MATH 225	3cr	
Free Electives:	0	
Total Degree Requirements (#):		120

(*) See requirements leading to teacher certification, titled "3-Step Process for Teacher Education," in the College of Education and Educational Technology section of this catalog.

(1) CHEM 111 and 112 can be substituted for CHEM 113 and 114.

(2) A minimum of 6cr of Controlled Electives, including either CHEM 351 or BIOC 301, is required for the ACS-certified degree in Chemistry Education.

(#) See advisory paragraph "Timely Completion of Degree Requirements" in the section on Requirements for Graduation.

b. List of all associated course changes (new or revised courses, number, title, or description changes, and deletions).

Replaced: MATH 123 (4cr Liberal Studies Math) with MATH 125 (3 cr Liberal Studies Math)

Replaced: MATH 124 (4 cr Liberal Studies Elective) with MATH 126 (3cr Liberal Studies Elective)

Added: MATH 225 (3cr) under Other Requirements

Replaced GEOS 111/113 & GEOS 112/114 with GEOS 201

3. Rationale for Change.

The Math Department replaced its two four credit calculus courses with three three credit calculus courses. Since these courses are required in our program, we revised it accordingly.

The Geosciences Department no longer offers GEOS 111, 113, 112 or 114. GEOS 201, Foundations of Geology, is a proposed sophomore level course for Geoscience majors, which is in keeping with science education requirements of CHEMED majors.

Part III. Implementation. Provide answers to the following questions:

1. How will the proposed revision affect students already in the existing program?

MATH 123 and MATH 124 were offered again this year. Existing students are being advised to complete their calculus requirements Fall 2007 and Spring 2008. Those who fail to do so will have to take the new calculus sequence.

GEOS 201 will not be offered until Fall 2009. Until then, students will be permitted to take GEOS 121/122 Physical Geology Lecture and Lab or GEOS 101/102 Dynamic Earth Lecture and Lab, which are the substitutions we have been permitting in the absence of GEOS 111/113 and GEOS 112/114 offerings.

2. Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty.

This change has no impact on our faculty resources.

3. Are other resources adequate? (Space, equipment, supplies, travel funds)

This change has no impact on our resources.

4. Do you expect an increase or decrease in the number of students as a result of these revisions? If so, how will the department adjust?

We hope that the calculus change, which may better prepare students for upper level chemistry courses, will help with student retention. We do not expect a better retention level to require an increase in course sections.

Part IV. Periodic Assessment

Departments are responsible for an on-going review of curriculum. Include information about the department's plan for program evaluation:

1. Describe the evaluation plan. Include evaluation criteria. Specify how student input will be incorporated into the evaluation process.

This revision is not expected to change the existing evaluation process, which includes the department student learning outcomes assessment survey, the five-year department evaluation and the American Chemical Society accreditation review.

2. Specify the frequency of the evaluations.

Evaluations occur annually as part of our department student learning outcomes assessment plan.

3. Identify the evaluating entity.

Student Learning Outcomes assessment survey.

Part V. Course Proposals

CHEM 340 and CHEM 341 have revised catalogue descriptions due to the change in prerequisites from the old calculus courses, MATH 123 and MATH 124 to MATH 125, 126 and 225.

Part VI. Letters of Support or Acknowledgement

Letter from Gary Stoudt, Chair, Mathematics.

Letter from Steven Hovan, Chair, Geosciences

Anne E. Kondo

From: "Gary Stoudt" <Gary.Stoudt@iup.edu>
To: "Anne E. Kondo" <akondo@iup.edu>
Sent: Tuesday 27 November 2007 1:55 PM
Subject: RE: Chemistry/Calc Revisions

Anne,

The Mathematics Department supports the revisions to the BA Chemistry, BS Chemistry, BSEd Chemistry Education, and BS Chemistry/Pre-Med programs, and the corresponding course prerequisite changes in CHEM 340 and CHEM 341. We appreciate the Chemistry Department's willingness to work with us on changing the calculus sequence for science majors. I know from our point of view it was good for us to have a dialogue with you on this matter. These changes will not have any resource implications for us and we hope that the new calculus sequence will serve the needs of all of our students.

Gary

Gary Stoudt
Mathematics Department

From: Anne E. Kondo [mailto:akondo@iup.edu]
Sent: Tuesday 27 November 2007 12:55 PM
To: gsstoudt@iup.edu
Cc: Wendy Elcesser
Subject: Chemistry/Calc Revisions

Dear Gary,

Attached, please find program revisions to our BA-CHEM, BS-CHEM, BS-CHEMED and BS-CHEM/PREMED and a course revision for CHEM 341 (pre-requisite change) that incorporate the changes in the math calculus sequence. We would appreciate a letter of support. Thank-you,

Sincerely,

Anne Kondo

Dept. Chemistry

Curriculum Committee member



Geoscience Department
Indiana University of Pennsylvania
114 Walsh Hall
Indiana, Pennsylvania 15705

Dr. Steven A. Hovan, Chair
(724) 357-7662 *office*
(724) 357-5700 *fax*
email: hovan@iup.edu

November 28, 2007

To: Anne Kondo, Chemistry Department

From: Steve Hovan, Geoscience Dept

RE: proposed revision of B.S. Chemistry Education degree program

Dr. Kondo,

Thank you contacting us about the proposed B.S. in Education, Chemistry program offered by the Chemistry Department. The Geoscience faculty reviewed the changes identified in the copy of the program revision proposal you provided and fully support the changes that are related to Geoscience course offerings. Once our new course is approved (GEOS201 – Fundamentals of Geoscience), we will offer it at least once per year and think that this would provide Science Ed. majors with a strong background in the Earth Sciences. I'll be sure to work with your department chairperson when scheduling this class to minimize overlapping the time periods between this and other courses required by your majors.

I wish you and the department all the best with your curriculum revisions.

Sincerely,

Steve Hovan

Chair, Geoscience Department