08-13

LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:	Senate Action Date:
		~~07-59~~	AP-9/2/08	App-11/4/08

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person	Email Address
Jonathan N. Southard	southard@iup.edu
Proposing Department/Unit	**Phone**
Biochemistry Program	724-357-2210

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)

_____New Course _____Course Prefix Change _____Course Deletion

_____Course Revision _____Course Number and/or Title Change ____Catalog Description Change

***Current* Course prefix, number and full title**	***Proposed* course prefix, number and full title, if changing**

2. Additional Course Designations: check if appropriate

_____ This course is also proposed as a Liberal Studies Course.

_____ This course is also proposed as an Honors College Course.

_____ Other: (e.g., Women's Studies, Pan-African)

3. Program Proposals

_____Catalog Description Change X____Program Revision

_____New Degree Program _____Program Title Change _____Other

_____New Minor Program _____New Track

Bachelor of Science-Biochemistry	
***Current* program name**	***Proposed* program name, if changing**

4. Approvals

		Date
Department Curriculum Committee Chair(s)		
Program Coordinators		10-5-07
College Curriculum Committee Chair		10-5-07
College Dean		09/04/08
Director of Liberal Studies *		4-4-08
Director of Honors College *		
Provost *	Gerard D. Entemann	8/29/08
Additional signatures as appropriate:		
(include title)		
UWUCC Co-Chairs	Gail S Sechrist	9-03-08

* where applicable

Received
SEP 03 2008
Liberal Studies

Received
APR 04 2008
Liberal Studies

II. DESCRIPTION OF CURRICULUM CHANGE

1. Catalog Description

Note: The text is identical to the current catalog text.

The B.S. degree with a major in Biochemistry is a four-year degree curriculum offered as a cooperative program by the Biology and Chemistry departments. This Biochemistry Program also offers a minor in Biochemistry.

The curriculum leading to a B.S. degree with a major in Biochemistry begins with foundation courses in biology, chemistry, mathematics, and physics in the first two years. Specialization in biochemistry commences in the third year with courses in biochemistry, genetics, physical chemistry, Special Topics in Biochemistry, and Biochemistry Seminar.

A unique feature of this undergraduate program is that Biochemistry research is a requirement. After consultation with faculty, the students will define a problem and devise an experimental plan through library research. Laboratory research will be done under the direct supervision of a faculty member. Finally, the student will report on the results of the research in both written and oral forms.

This program is intended for students whose interests lie in a most exciting field of modern science. Graduates can expect to be qualified to enter graduate programs in biochemistry, biology, chemistry, and molecular biology, professional schools in the health sciences, and positions in industrial and government research laboratories and in industrial production facilities.

Bachelor of Science–Biochemistry

Liberal Studies: As outlined in Liberal Studies section with the following specifications: **Mathematics:** MATH 125 and MATH 126 **Natural Science:** PHYS 131-141 and 132-142			48
Major:			51
Required Courses:			
BIOC 301	Biochemistry I	3cr	
BIOC 302	Biochemistry II	3cr	
BIOC 311	Biochemistry Laboratory I	1cr	
BIOC 312	Biochemistry Laboratory II	1cr	
BIOC 401	Laboratory Methods in Biology and Biotechnology	3cr	
BIOC 480	Biochemistry Seminar I	1cr (1)	
BIOC 481	Special Topics in Biochemistry	3cr	
BIOC 482	Independent Research in Biochemistry	2cr	
BIOC 490	Biochemistry Seminar II	1cr (1)	
BIOL 111	Principles of Biology I	4cr	
BIOL 250	Principles of Microbiology	3cr	
BIOL 263	Genetics	3cr	
CHEM 113	Concepts in Chemistry I	4cr	
CHEM 114	Concepts in Chemistry II	4cr	
CHEM 231	Organic Chemistry I	4cr	
CHEM 232	Organic Chemistry II	4cr	
CHEM 323	Analytical Methods	4cr	
CHEM 340	Physical Chemistry for the Biological Sciences	3cr	
Controlled Electives:			6-8
Select two from the following: Any 300- or 400-level BIOC/BIOL/CHEM courses		6-8cr	
MATH 216	Probability and Statistics for Natural Sciences		
COSC 110	Problem Solving and Structured Programming		
Other Requirements: (2)			3
MATH 225		3cr	
Free Electives:			10-12
Total Degree Requirements:			120

(1) 1cr each semester of senior year

(2) Foreign language is not required

2. Summary of changes

2a. Table comparing old and new programs

Bachelor of Science—
Biochemistry (Current)

Liberal Studies: As outlined in Liberal Studies section with the following specifications: **Mathematics:** MATH 123 **Natural Science:** PHYS 131-141 and 132-142 **Liberal Studies Electives**: 4cr, MATH 124, no courses with BIOC prefix	50
Major:	51
Required Courses:	
BIOC 301 Biochemistry I	3cr
BIOC 302 Biochemistry II	3cr
BIOC 311 Biochemistry Laboratory I	1cr
BIOC 312 Biochemistry Laboratory II	1cr
BIOC 480 Biochemistry Seminar I	1cr (1)
BIOC 481 Special Topics in Biochemistry	3cr
BIOC 482 Independent Research in Biochemistry	2cr
BIOC 490 Biochemistry Seminar II	1cr (1)
BIOL 111 Principles of Biology I	4cr
BIOL 250 Principles of Microbiology	3cr
BIOL 263 Genetics	3cr
BIOL 401 Laboratory Methods in Biology and Biotechnology	3cr
CHEM 113 Concepts in Chemistry I	4cr
CHEM 114 Concepts in Chemistry II	4cr
CHEM 231 Organic Chemistry I	4cr
CHEM 232 Organic Chemistry II	4cr
CHEM 323 Analytical Methods	4cr
CHEM 340 Physical Chemistry for the Biological Sciences	3cr
Controlled Electives:	6
Advanced Biology course chosen from the following:	
BIOL 331, 350, 352, 364, or 453	3cr
Either MATH 216 or	
COSC 110	3-4 cr
Other Requirements	
Foreign language Intermediate Level	0-6
Free Electives:	6-12
Total Degree Requirements:	120

(1) 1cr each semester of senior year.

Bachelor of Science—
Biochemistry (Revised)

Liberal Studies: As outlined in Liberal Studies section with the following specifications: **Mathematics:** MATH 125 and MATH 126 **Natural Science:** PHYS 131-141 and 132-142	48
Major:	51
Required Courses:	
BIOC 301 Biochemistry I	3cr
BIOC 302 Biochemistry II	3cr
BIOC 311 Biochemistry Laboratory I	1cr
BIOC 312 Biochemistry Laboratory II	1cr
BIOC 401 Laboratory Methods in Biology and Biotechnology	3cr
BIOC 480 Biochemistry Seminar I	1cr (1)
BIOC 481 Special Topics in Biochemistry	3cr
BIOC 482 Independent Research in Biochemistry	2cr
BIOC 490 Biochemistry Seminar II	1cr (1)
BIOL 111 Principles of Biology I	4cr
BIOL 250 Principles of Microbiology	3cr
BIOL 263 Genetics	3cr
CHEM 113 Concepts in Chemistry I	4cr
CHEM 114 Concepts in Chemistry II	4cr
CHEM 231 Organic Chemistry I	4cr
CHEM 232 Organic Chemistry II	4cr
CHEM 323 Analytical Methods	4cr
CHEM 340 Physical Chemistry for the Biological Sciences	3cr
Other Requirements: (2)	3
MATH 225	3cr
Controlled Electives:	6-8
Select two from the following:	
Any 300- or 400-level BIOC/BIOL/CHEM courses	
MATH 216 Probability and Statistics for Natural Sciences	
COSC 110 Problem Solving and Structured Programming	
Free Electives:	10-12
Total Degree Requirements:	120

(1) 1cr each semester of senior year.
(2) Foreign language is not required.

2b. List of all associated course changes

1) New courses
   MATH 125, 126, and 225 (9 cr) replace MATH 123 and 124 (8 cr)
2) Prefix change:
   BIOL 401, Laboratory Methods in Biology and Biotechnology
   changed to: BIOC 401, Laboratory Methods in Biology and Biotechnology
3) Course deletions: Foreign language requirement is deleted.
4) Other changes: More flexibility is given in the selection of controlled electives.

3. Rationale for Change Note: Numbers refer to the items in 2b.

1) The mathematics department is replacing its current calculus courses for natural science majors, the two course series of MATH 123 and 124, with a three course series, MATH 125, 126, and 225. The biochemistry B.S. curriculum is being changed accordingly.
2) BIOL 401 is being cross-listed as BIOC 401. A course proposal from the Biology Department for this change will accompany this program revision proposal.
3) The foreign language requirement is being deleted from the B.S. biochemistry program because it adds little discipline-specific value to the program. Since the development of the biochemistry B.S. program at IUP approximately twenty years ago the acceptance and use of English as the language of science has increased. A survey of undergraduate programs in biochemistry at other institutions in our region (West Chester, Millersville, Kutztown, and Edinboro in the SSHE system; Frostburg State University, Dickenson College, Juniata College, Franklin and Marshall University, The University of Pittsburgh, Duquesne University and Penn State) reveals that none include a foreign language requirement within the subject area courses. Likewise, a survey of 20 Ph.D. programs in biochemistry failed to find any with a foreign language requirement for admission or degree completion. A recent external review of the chemistry department included this evaluation of the foreign language requirement that applies equally well to the B.S. biochemistry program:

   "The purpose of the College's foreign language requirement in relation to the Department is unclear. Although chemistry majors are required to complete such a requirement, it does not seem to be a cognate-course type requirement in the sense that the required cognate courses in physics or mathematics are. I could find no evidence that the students are asked to apply their knowledge of the foreign language in their chemistry courses, even for those in which literature searching is required. Translations of papers from non-English chemistry journals are not used to assess students' understanding and application of a foreign language to their discipline. Why, then, have a foreign language requirement?" (Dr. Conrad Stanitski, *Report of an On-site Visit to Evaluate the Chemistry Programs at Indiana University of Pennsylvania*, April 5-6, 2007)

In summary, we find no objective evidence to support the preferential requirement of language courses over other applicable courses for biochemistry majors. The proposed change will allow students to choose elective courses best suited to match their interests and career goals. These may be language, business, anthropology, criminology, psychology, food & nutrition, mathematics, computer science, or other courses relevant to the diverse career paths open to these students. This change is in keeping with the stated philosophy of the UWUCC for program revisions:

"The UWUCC believes that any degree program is stronger if it includes an opportunity for students to select freely at least some courses that reflect their own intellectual interests. Proposers of program revisions in which the combined number of free electives and unspecified Liberal Studies electives does not allow such student choice, or allows only a very limited opportunity for it, should be prepared to supply justification."
(University-Wide Undergraduate Curriculum Handbook)

4) In the current B.S. biochemistry program, students must complete two controlled electives. The first must come from a list of five biology courses. The second must be in either computer science (COSC 110, Problem Solving and Structured Programming) or mathematics (MATH 216, Probability and Statistics for Natural Sciences). All of these courses are included as possibilities for the two controlled electives in the revised program. The revised program allows the student greater flexibility in choosing these electives, allowing them to better tailor their program of study to their specific interests and needs.

III. IMPLEMENTATION

1. The proposed changes will have little or no impact on students already in the existing program. The mathematics department is continuing to offer MATH 124 to those students who have begun the old calculus sequence. These students will complete two calculus courses, MATH 123 and 124. Students enrolling in Fall 2007 are required to begin with MATH 125 rather than 123 and will complete the new sequence of MATH 125, 126, and 225. If the other proposed changes are applied retroactively to students in the existing program (as was done with the changed required for reduction to 120 credits) it will not cause any difficulties for these students as the changes only provide greater flexibility in the selection of courses.

2. Faculty resources are adequate. The proposed changes do not significantly increase demand on faculty resources. Small shifts in the numbers of students enrolled in the various controlled electives are likely, however the number of students involved is small.

3. Other resources are adequate. The proposed changes do not increase demands on other resources.

4. The proposed changes are not expected to cause a noticeable increase or decrease in the number of students enrolled in the B.S. biochemistry program.

IV. PERIODIC ASSESSMENT

Periodic assessment will be performed on an annual basis as described in the attached Student Outcomes Assessment Plan for the B.S. Biochemistry Program.

V. COURSE PROPOSALS

There are no new courses added, revised, or deleted as a result of this program revision.

Part VI. LETTERS OF SUPPORT OR ACKNOWLEDGEMENT

Correspondence to and from affected departments and programs is attached.

STUDENT OUTCOMES ASSESSMENT PLAN FOR THE B.S. BIOCHEMISTRY PROGRAM

Program Objectives

1. Students should understand the fundamental principles of biochemistry and be able to apply them in the three major subject areas of biochemistry (structure and function of biomolecules, bioenergetics and metabolism, and transmission of biological information)

2. Students should understand the major experimental and computer-based methods used in biochemistry and demonstrate competence in fundamental experimental and computer-based methods.

3. Students should be able to access the primary literature for biochemistry and to critically assess this literature.

4. Students should be able to effectively communicate scientific information both orally and in writing.

5. Students should experience the process of original research in biochemistry, including development of a research proposal, design and execution of experiments, and communication of research findings.

6. Students should be able to compete successfully for graduate programs and professional schools and for employment in positions utilizing their training in biochemistry.

Assessment Measures

1. Exit Survey
   This survey has been given to graduating biochemistry majors since 2004. The survey lists 15 skills that, according to the American Society for Biochemistry and Molecular Biology, students should obtain in an undergraduate program. It also asks students about their immediate career plans and, for those who have applied to graduate/professional schools, the number of applications, acceptances and rejections. The survey items are mapped to the program objectives in the table below. The exit survey and a summary of the data collected to date are included in the Appendix.

2. American Chemical Society (ACS) Biochemistry Exam.
   This standardized exam will be administered as the final exam in BIOC 302, the second course in the biochemistry lecture series, beginning in spring 2008. This will allow an objective and standardized measure for program objective 1. Student performance on the exam will be compared both to national norms and to previous year's students once data is available. The sixty questions on the exam will be mapped to the three major subject areas in objective 1. Some questions will also map to objective 2.

3. Proposal and Reports for BIOC 482, Independent Research in Biochemistry.
   Biochemistry majors are currently required to complete a brief proposal for their research project and these are maintained in a file by the designated program co-coordinator. Students are also required to complete a final report on their research project. In the past, these have not kept on file. Program procedures will be modified to include a requirement that these reports be transmitted to the designated co-coordinator. The reports may be in the form of written reports or documentation of an oral or poster presentation at a local, regional, or national meeting.

4. Seminar Evaluation Form for BIOC 490
   Biochemistry majors develop and present a scientific seminar in BIOC 490, Biochemistry Seminar II. A seminar evaluation form has been used to provide audience feedback to the students. This form will be adapted and program procedures will be modified so that course instructors are notified to use this form and provide copies to the designated co-coordinator. Data from these evaluations will be used to assess objective 4. A copy of the seminar evaluation form is included in the Appendix.

Map of assessment items to program objectives

Program Objectives	Assessment Measures
1 Understand and apply biochemical principles	Exit survey #1, 2, 5, 14, 15 ACS biochemistry exam
2. Understand and use experimental and computer-based methods	Exit survey #4, 6-12 ACS biochemistry exam
3. Access and assess biochemical literature	Exit survey #3 and 10
4. Oral and written scientific communication	Exit survey # 4 Seminar evaluation form
5. Experience process of research	Exit survey #6-9, 12 BIOC 482 proposal & report
6. Compete for graduate/professional programs or employment	Exit survey: career goal items & acceptances/rejections

Data Collection, Analysis, and Review

One of the co-coordinators of the biochemistry program will be designated to be responsible for the collection and analysis of assessment data. This person (currently Jon Southard) will administer the exit survey to graduating seniors, maintain the BIOC 482 proposal and report files and receive the seminar evaluation forms from the instructor for BIOC 490. This person will also be responsible for the analysis of the assessment data and the presentation of the results to the biochemistry faculty prior to the first faculty meeting each fall. The faculty will discuss the results of the assessment in the first meeting and decide what, if any, changes to the program are needed.

APPENDIX

A. Exit survey

B. Summary of exit survey data, 2004-2007

C. Seminar evaluation form

A. Exit survey

SURVEY FOR GRADUATING BIOCHEMISTRY MAJORS

Your responses are confidential and will be used solely to evaluate the effectiveness of the Biochemistry program at IUP. Please return the completed survey to Dr. Southard in the envelope provided. Thank you for your time.

Listed below are 15 skills that, according to the American Society for Biochemistry and Molecular Biology, students in these fields should obtain by the time they have finished their undergraduate program. For each skill, give your response to the statement "I have obtained this skill."

Anticipated graduation date:
May Aug Dec 20____

Strongly agree	Agree	Neutral	disagree	Strongly disagree	
☐	☐	☐	☐	☐	1. Understanding of the fundamentals of chemistry and biology and the key principles of biochemistry and molecular biology.
☐	☐	☐	☐	☐	2. Awareness of the major issues at the forefront of the discipline.
☐	☐	☐	☐	☐	3 Ability to assess primary papers critically.
☐	☐	☐	☐	☐	4. Good "quantitative" skills such as the ability to accurately and reproducibly prepare reagents for experiments.
☐	☐	☐	☐	☐	5. Ability to dissect a problem into its key features.
☐	☐	☐	☐	☐	6. Ability to design experiments and understand the limitations of the experimental approach.
☐	☐	☐	☐	☐	7. Ability to interpret experimental data and identify consistent and inconsistent components.
☐	☐	☐	☐	☐	8. Ability to design follow-up experiments.
☐	☐	☐	☐	☐	9. Ability to work safely and effectively in a laboratory.
☐	☐	☐	☐	☐	10. Awareness of the available resources and how to use them.
☐	☐	☐	☐	☐	11. Ability to use computers as information and research tools.
☐	☐	☐	☐	☐	12. Ability to collaborate with other researchers.
☐	☐	☐	☐	☐	13. Ability to use oral, written and visual presentations to present my work to both a science literate and a science non-literate audience.
☐	☐	☐	☐	☐	14. Ability to think in an integrated manner and look at problems from different perspectives.
☐	☐	☐	☐	☐	15. Awareness of the ethical issues in the molecular life sciences.

Please see the reverse side

Please indicate your immediate career plans:

- ❑ Graduate School (M. S. program)
- ❑ Graduate School (Ph. D. program)
- ❑ Professional School (Medical School)
- ❑ Professional School (Veterinary School)
- ❑ Other further education or training (please specify)

_____

- ❑ Employment (Industrial)
- ❑ Employment (Government)
- ❑ Employment (Other)

For employment please indicate if B.S. degree is relevant to your duties

_____

- ❑ Other/Uncertain

_____

If you have applied to programs for further study, please give numbers for each category:

___ applications ___ acceptances ___ rejections

Additional comments:

B. Summary of exit survey data, 2004-2007

item #	skill	2004	2005	2006	2007	mean
1	principles	4.7	4.3	4.7	4.8	4.6
2	major issues	4.0	3.3	3.8	4.5	3.9
3	assess papers	4.2	4.7	4.3	4.8	4.5
4	quant. skills	4.0	4.5	4.2	4.5	4.3
5	dissect problem	3.8	3.8	4	4.2	4.0
6	design expt.	3.8	3.5	3.8	3.7	3.7
7	interpet data	4.7	4.3	4.3	4.3	4.4
8	design follow-up	4.3	3.3	3.5	3.7	3.7
9	work safely/effect.	4.3	4.5	4.5	4.8	4.5
10	aware of resources	3.8	3.8	3.7	4.8	4.0
11	able to use comp.	4.5	4.7	4.2	4.8	4.6
12	able to collaborate	4.3	4.3	3.7	4.7	4.3
13	commun. skills	4.2	4.7	4.3	4.7	4.5
14	integrate/perspect.	4.0	3.5	4.5	4	4.0
15	ethical issues	2.7	3.7	3.5	4.3	3.6
	5 = strongly agree	4.1	4.1	4.1	4.4	
	1 = strongly disagree					

	Educ.						Employment			
career goals:	M.S.	Ph.D.	Med		Vet	Other ed	Industry	Govt.	Other	Uncertain
2004	1	2					2			1
2005	1	1	1			1 (pharm)		1		1
2006		3				2			1	
2007		1	2				3		2	

	applic	accepts	rejects	Acc. rate
2004	14	6	8	43
2005	21	12	8	60
2006	14	2	4	33
2007	26	3	15	17

C. Seminar evaluation form

BIOC 490 SEMINAR EVALUATION FORM

Speaker: _____

Title: _____

About the evaluator: Please check all that apply

___Student ___Faculty

Department/Major: ___Biochemistry ___Biology ___Chemistry
___Other Science ___ Nonscience

Rate each aspect of the seminar using the scale below:
SA = strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree

1. The speaker was well-prepared and organized: **SA A N D SD**

2. The speaker was easily heard and used appropriate language: **SA A N D SD**

3. The speaker proceeded at a reasonable pace:. **SA A N D SD**

4. The speaker maintained appropriate eye-contact with the audience: **SA A N D SD**

5. Sufficient background material was included to grasp the significance of the research: **SA A N D SD**

6. The methods for key experiments were explained so that I could understand them: **SA A N D SD**

7. The results for key experiments were explained so that I could understand them: **SA A N D SD**

8. The most important conclusion(s) made from the research were clearly stated: **SA A N D SD**

9. The presentation was organized in a logical fashion: **SA A N D SD**

10. Slides were readable, well-designed, and enhanced the presentation: **SA A N D SD**

11. The presentation was of appropriate length (- 30 min): **SA A N D SD**

12. The speaker fielded questions well: **SA A N D SD**

Overall quality of presentation:

Excellent Very Good Good Average Below Average Poor

Comments:

Part VI. **Letters of Support or Acknowledgement**

Correspondence to and from affected departments and programs is attached in chronological order.

To: Carl Luciano, Biology Chair
William Oblitey, Computer Science Chair
Gary Stoudt, Mathematics Chair
John Woolcock, Chemistry Chair
CC: Gerald Buriok, Dean of Natural Science and Mathematics
From: N. Bharathan and Jon Southard, Biochemistry Program Co-coordinators

October 5, 2007

Attached is a curriculum proposal for changes in the Biochemistry B.S. degree program. As these changes will impact your departments, we are seeking your input and, hopefully, letters of support for the proposal.

Included with the proposal are copies of the current and proposed course sequences for the B.S. in Biochemistry. We have not included our outcomes assessment plan. If you feel that this document will inform your review of the curriculum proposal, please let us know and we will gladly provide a copy.

Jonathan N. Southard

From: "Gary Stoudt" <Gary.Stoudt@iup.edu>
To: <Jonathan.Southard@iup.edu>
Cc: <gsstoudt@iup.edu>
Sent: Tuesday, October 09, 2007 8:25 AM
Subject: Biochemistry Revisions

Jon,

The Mathematics Department supports the Biochemistry revisions. We appreciate your willingness to discuss the calculus revisions last year and are happy to see you implementing the changes this year. In addition, the change in the wording of the controlled elective portion of the program will not cause us any difficulties.

Gary

Gary Stoudt, Chairperson
Mathematics Department

Jonathan N. Southard

From: "Bill Oblitey" <oblitey@iup.edu>
To: "DR. N. Bharathan" <bharathn@iup.edu>; <Southard@iup.edu>
Sent: Tuesday, October 09, 2007 3:59 PM
Subject: Curriculum Changes in Biochemistry

Gentlemen,
The Computer Science curriculum committee and I have looked at your changes in the biochemistry curriculum and we do not have any problems with it.

Bill Oblitey

William W. Oblitey, Ph.D.
Chair, Computer Science Department
Indiana University of Pennsylvania
Stright Hall, Room 319
210 South Tenth Street
Indiana, PA 15705-1081

Phone: (724) 357-4491 (Office)
(724) 357-2524 (Dept.)
Fax: (724) 357-2724

e-mail: oblitey@iup.edu

Jonathan N. Southard

From: "Jonathan N. Southard" <southard@iup.edu>
To: "Carl S. Luciano" <luciano@iup.edu>; "Gary Stoudt" <Gary.Stoudt@iup.edu>; "John Woolcock" <John.Woolcock@iup.edu>
Cc: "N Bharathan" <bharathn@iup.edu>; "Jonathan N. Southard" <southard@iup.edu>
Sent: Saturday, October 20, 2007 12:58 PM
Attach: request for letters.doc
Subject: Biochemistry BS curriculum proposal

To: Carl Luciano, Biology Chair
Gary Stoudt, Mathematics Chair
John Woolcock, Chemistry Chair
From: N. Bharathan and Jon Southard, Biochemistry Program Co-coordinators
Date: October 20, 2007

This is a reminder that on October 5 we provided you with copies of our curriculum proposal for changes in the Biochemistry B.S. program and requested letters of support from your departments. Our goal is to submit this proposal to the NSM curriculum committee no later than November 5, 2007. Please contact Jon Southard if you have any questions or concerns regarding this proposal.

Thank you.

Jonathan N. Southard
Assistant Professor of Chemistry
Co-Coordinator, Biochemistry Program

Jonathan N. Southard

From: "Carl S. Luciano" <luciano@iup.edu>
To: "Jonathan N. Southard" <southard@iup.edu>
Cc: <luciano@iup.edu>
Sent: Monday, October 22, 2007 9:30 AM
Subject: Re: Biochemistry BS curriculum proposal

Jon

Do you need something just for me or do you want a committee response?

I don't think we'll be able to change the prefix on 401 ot BIOC because our students use it as a BIOL elective and it is a required BIOL course for our CMBI students.

Thanks, CL.

Dr. Carl S. Luciano
Professor and Chair
Department of Biology
Indiana University of Pennsylvania

---- Original Message ----
From: Jonathan N. Southard
To: Carl S. Luciano ; Gary Stoudt ; John Woolcock
Cc: N Bharathan ; Jonathan N. Southard
Sent: Saturday 20 October 2007 12:58 PM
Subject: Biochemistry BS curriculum proposal

To: Carl Luciano, Biology Chair
Gary Stoudt, Mathematics Chair
John Woolcock, Chemistry Chair
From: N. Bharathan and Jon Southard, Biochemistry Program Co-coordinators
Date: October 20, 2007

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Thank you.

Jonathan N. Southard
Assistant Professor of Chemistry
Co-Coordinator, Biochemistry Program

Jonathan N. Southard

From: "Jonathan N. Southard" <southard@iup.edu>
To: "Carl S. Luciano" <luciano@iup.edu>
Cc: "N Bharathan" <bharathn@iup.edu>
Sent: Monday, October 22, 2007 10:35 AM
Subject: Re: Biochemistry BS curriculum proposal

Carl,

It just depends on how your department handles letters of support for curriculum proposals. We would like to move forward since the change in calculus courses really needs to be addressed this year.

The proposal to change BIOL 401 to BIOC 401 was made following suggestions from the college that it makes no sense for the budgetary support for the course to be coming from one source while the student credit hours are counted for another. As coordinators of the biochemistry program we agree and are proposing one possible correction of this anomalous situation.

Jonathan N. Southard
Assistant Professor of Chemistry
Co-Coordinator, Biochemistry Program

---- Original Message ----
From: Carl S. Luciano
To: Jonathan N. Southard
Cc: luciano@iup.edu
Sent: Monday, October 22, 2007 9:30 AM
Subject: Re: Biochemistry BS curriculum proposal

Jon

Do you need something just for me or do you want a committee response?

I don't think we'll be able to change the prefix on 401 ot BIOC because our students use it as a BIOL elective and it is a required BIOL course for our CMBI students.

Thanks, CL.

Dr. Carl S. Luciano
Professor and Chair
Department of Biology
Indiana University of Pennsylvania

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From: Jonathan N. Southard
To: Carl S. Luciano ; Gary Stoudt ; John Woolcock
Cc: N Bharathan ; Jonathan N. Southard
Sent: Saturday 20 October 2007 12:58 PM
Subject: Biochemistry BS curriculum proposal

To: Carl Luciano, Biology Chair
Gary Stoudt, Mathematics Chair
John Woolcock, Chemistry Chair
From: N. Bharathan and Jon Southard, Biochemistry Program Co-coordinators

Jonathan N. Southard

From: "Jonathan N. Southard" <southard@iup.edu>
To: <chasmc@iup.edu>; <lauradel@iup.edu>; <swthorn@iup.edu>
Cc: "N Bharathan" <bharathn@iup.edu>; "Jonathan N. Southard" <southard@iup.edu>
Sent: Thursday, October 25, 2007 2:31 PM
Attach: BIOC BS program revision 10-07.doc
Subject: Curriculum proposal for Biocchemistry B.S.

To: Laura Delbrugge, Chairperson, Spanish Department
Charles McCreary, Chairperson, French and German Department
Sally Thornton, Director, Critical Languages Program

From: N Bharathan and Jon Southard, Coordinators, Biochemistry Program

Attached is a curriculum proposal for a program revision to the Biochemistry B.S. degree program. We wanted to inform you of the proposed changes to this program in light of potential changes in enrollment in some of your courses.

Jonathan N. Southard

From: "Laura Delbrugge" <lauradel@iup.edu>
To: "Jonathan N. Southard" <southard@iup.edu>; "N Bharathan" <bharathn@iup.edu>
Cc: "Susan Boser" <SBoser@iup.edu>; "Yaw Asamoah" <osebo@iup.edu>; <Gerald.Buriok@iup.edu>; "Cheryl Samuels" <CSAMUELS@iup.edu>; "Ola Kaniasty" <AKANIAST@iup.edu>; "Alphonse Novels" <annovels@iup.edu>; "Charles McCreary" <CHASMC@iup.edu>; "Sally Thornton" <SWTHORN@iup.edu>
Sent: Friday, October 26, 2007 3:22 PM
Subject: Re: Curriculum proposal for Biocchemistry B.S.

Greetings Dr. Southard and Dr. Bharathan:

Good afternoon. Thank you for the notification of your intention to pursue the deletion of the Intermediate Foreign Language Requirement from the Biochemistry B.S.

This is not the first time we have received such a notification, I'm afraid. I would be naive to think that what I may write at this point will change your intent, but I would like to point out a few things, perhaps simply for the sake of the student who will attempt to make his or her way in a professional world that is undoubtedly becoming smaller by the day.

First, the question posed in your proposal, "Given the nature of the Biochemistry discipline, why a FL requirement?" Obviously as the chair of a language department I believe that answer is obvious, to broaden a student's horizons, their future marketability, their awareness of global issues, etc, facets of the issue that I would suspect many others in the College of NSM would agree with. Knowledge of a FL gives a student an edge in an extremely competitive job market. It is troubling to me that your justification for the elimination of the FL requirement stems from the conclusion that it is the *nature* of the biochemistry discipline that renders a FL requirement unnecessary. Do Biochemistry majors ever compete for international positions? Or those positions within US companies that have contact with other countries and cultures? ALL majors could benefit from knowledge of a FL, in particular those majors such as yours who will compete in a much larger market.

Second, the FL requirement is still part of many NSM majors, and still is for the entire CHSS, because of the belief in the validity of FL study for ALL students, including science majors. In my time at IUP, I have heard other departments argue against the importance of FL study This is a curious conclusion in my opinion, at least for those departments and majors who hope to produce truly competitive graduates. There is no indication whatsoever of any decrease domestically or internationally for knowledge of a foreign language, particularly Spanish, Chinese, French, German, and Arabic, among many others.

Notwithstanding, I do understand the restrictions and limitations that come from the 120 hour mandate– we are all feeling that pinch. I respectfully would suggest that there may be other ways around that issue without sacrificing the FL experience for your majors, many of whom will be pursuing careers and jobs in which knowledge of a foreign language would give them a real competitive advantage.

Thank you for your time. I hope you have a wonderful weekend. Stay dry!
Collegially,
Laura Delbrugge
Chair, IUP Dept of Spanish

> ---- Original Message ----
> **From:** Jonathan N. Southard
> **To:** chasmc@iup.edu ; lauradel@iup.edu ; swthorn@iup.edu
> **Cc:** N Bharathan ; Jonathan N. Southard
> **Sent:** Thursday, October 25, 2007 2:31 PM
> **Subject:** Curriculum proposal for Biocchemistry B.S.
>
> To: Laura Delbrugge, Chairperson, Spanish Department
> Charles McCreary, Chairperson, French and German Department

Jonathan N. Southard

From: "John Woolcock" <woolcock@iup.edu>
To: "Jonathan Southard" <Jonathan.Southard@iup.edu>
Sent: Sunday, November 04, 2007 10:48 PM
Subject: Fwd: BS Biochemistry Revisions

Jon,

Based on the recommendation of the Chemistry Department Curriculum Committee given below, I support the changes you are proposing to the Biochemistry program. However, these changes have not been reviewed by the entire Chemistry faculty. This will occur a the next regularly scheduled faculty meeting on November 13.

John Woolcock

Begin forwarded message:

From: "Wendy Elcesser" < >
Date: October 31, 2007 3:01:01 PM EDT
To: "John Woolcock" < >
Cc: "Michael Briggs" < >, "Kondo, Anne E" < >, "Elcesser, Wendy L" < >, "Carl LeBlond" < >, "Jon Southard" < >
Subject: BS Biochemistry Revisions

Dear John,

I did not know if this recommendation should be sent directly to the Biochemistry Program coordinators or through the Chemistry chairperson. Since you forwarded the proposal to the committee, I have decided to respond back to you.

Thanks for reading,

Wendy

The Chemistry Department Curriculum Committee recommends support of the changes to the BS. Biochemistry program as forwarded. The students enrolled in this program will have increased flexibility to pursue specific areas of interest, including a broader view of alternate subdisciplines of chemistry.

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John Woolcock
Chair, IUP Chemistry Department
975 Oakland Avenue
Indiana, PA 15705
Telephone: 724-357-4828
Fax: 724-357-2437
e-mail:
web address:
****

Jonathan N. Southard

From: "Carl S. Luciano" <luciano@iup.edu>
To: "Jonathan N. Southard" <southard@iup.edu>; "Amadu D. Ayebo" <ayebo@iup.edu>
Cc: "N Bharathan" <bharathn@iup.edu>; <luciano@iup.edu>
Sent: Tuesday, March 11, 2008 10:21 AM
Subject: Re: Biochemistry program revision

Jon

I think the Department has yet to vote on the cross-listing so we'll have to take care of that as well. We did vote to support the course with funding. Thanks, CL.

Dr. Carl S. Luciano
Professor and Chair
Department of Biology
Indiana University of Pennsylvania

---- Original Message ----
From:
To: ;
Cc:
Sent: Monday 10 March 2008 2:02 PM
Subject: Biochemistry program revision

Amadu and Carl,

The college curriculum committee approved our program revision proposal on March 4, 2008. I have attached the current version of this proposal. It differs from the original in that rather than change BIOL 401 to BIOC 401, Molecular Techniques, the course will be cross-listed as BIOL 401/BIOC 401 with no change in course title.

I seek your assistance in moving this revision forward in time for implementation in Fall 2008. Two items are needed:

1. A letter of support for the revised proposal.

2. A course revision proposal for the cross-listing.

Thanks.

Jonathan N. Southard
Assistant Professor of Chemistry
Co-Coordinator, Biochemistry Program