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UWUCC USE Only
Number: 98-29
Submission Date: _____
Action-Date: 11-17-98

CURRICULUM PROPOSAL COVER SHEET *Senate approval: 12/1/98*
University-Wide Undergraduate Curriculum Committee

I. CONTACT

Contact Person Roberta M. Eddy Phone 357-4482
Department Chemistry

II. PROPOSAL TYPE (Check All Appropriate Lines)

_____ **COURSE** _____
Suggested 20 character title

_____ **New Course *** _____
Course Number and Full Title

_____ **Course Revision** _____
Course Number and Full Title

_____ **Liberal Studies Approval +** _____
for new or existing course Course Number and Full Title

_____ **Course Deletion** _____
Course Number and Full Title

_____ **Number and/or Title Change** _____
Old Number and/or Full Old Title
New Number and/or Full New Title

_____ **Course or Catalog Description Change** _____
Course Number and Full Title

PROGRAM: Major _____ Minor _____ Track _____

_____ **New Program *** _____
Program Name

Program Revision * Bachelor of Science in Education - Chemistry
Program Name

_____ **Program Deletion *** _____
Program Name

_____ **Title Change** _____
Old Program Name
New Program Name

III. Approvals (signatures and date)

Roberta M. Eddy Jan 21, 1998
Department Curriculum Committee

Dothen Vanphum 1/21/98
Department Chair

[Signature] 2/16/98
College Curriculum Committee

[Signature] 2/16/98
College Dean

+ Director of Liberal Studies (where applicable)

* Provost (where applicable)

*John P. Johnson
Academy for teacher
Preparation*

Part II. Description of Curriculum Change

1. Catalog Description For The Revised Chemistry Education Program.

Bachelor of Science in Education—Chemistry (*)

Liberal Studies: As outlined in Liberal Studies section with the following specifications: 56-57

Mathematics: MA123

Natural Science: PY111/121-112/122

Social Science: PC101

Liberal Studies electives: MA124, GS111 or GS113, no course with CH prefix

College: 32

Professional education sequence:

CM301	Technology for Learning and Instruction	3sh
ED242	Pre-student Teaching Clinical Experience I	1sh
ED342	Pre-student Teaching Clinical Experience II	1sh
ED441	Student Teaching	12sh
ED442	School Law	1sh
ED451	Teaching Science in the Secondary School	3sh
EP202	Educational Psychology	3sh
EP377	Educational Tests and Measures	3sh
EX301	Education of Students with Disabilities in Inclusive Secondary Settings	2sh
FE202	American Education in Theory and Practice	3sh

Major: 33-35

Required courses:

CH113	Concepts in Chemistry	4sh
CH114	Basic Inorganic Chemistry	4sh
CH231	Organic Chemistry I	4sh
CH232	Organic Chemistry II	4sh
CH321	Quantitative Analysis	4sh
CH322	Instrumental Analysis	4sh
CH341	Physical Chemistry I	4sh
CH343	Physical Chemistry Laboratory I	1sh
CH498	Problems in Chemistry	1-2sh

Controlled electives:

One additional chemistry course from list: 3-4sh
CH342, CH351, CH411

Other Requirements:

BI111	Principles of Biology I	4sh	5
GS112 or GS114		1sh	

Free Electives: 0

(#)Total Degree Requirements 126-129

(*) See requirements leading to teacher certification in the catalog section on Academic Policies, "Admission to Teacher Education."

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

2. Summary of changes

a. Table Comparing "Old" And "New" Chemistry Education Programs

"OLD" CHEMISTRY EDUCATION PROGRAM	"NEW" CHEMISTRY EDUCATION PROGRAM
Liberal Studies: (56-57sh) Mathematics: MA121 Natural Science: PY111/121-112/122 Social Science: PC101 Liberal Studies Electives: MA122, no courses with CH prefix.	Liberal Studies: (56-57sh) Mathematics: <i>MA123</i> Natural Science: PY111/121-112/122 Social Science: PC101 Liberal Studies electives: <i>MA124, GS111 or GS113</i> , no courses with CH prefix
College: (30sh) Professional education sequence: CM301 Technology for Learning and Instruction (3sh) ED242 Pre-student Teaching Clinical Experience I (1sh) ED342 Pre-student Teaching Clinical Experience II(1sh) ED441 Student Teaching (12sh) ED442 School Law (1sh) ED451 Teaching Science in the Secondary School (3sh) EP202 Educational Psychology (3sh) EP377 Educational Tests and Measures (3sh) FE202 American Education in Theory and Practice(3sh)	College: (32sh) Professional education sequence: CM301 Technology for Learning and Instruction (3sh) ED242 Pre-student Teaching Clinical Experience I (1sh) ED342 Pre-student Teaching Clinical Experience II(1sh) ED441 Student Teaching (12sh) ED442 School Law (1sh) ED451 Teaching Science in the Secondary School (3sh) EP202 Educational Psychology (3sh) EP377 Educational Tests and Measures (3sh) <i>EX301 Education of Students with Disabilities in Inclusive Secondary Settings (2sh)</i> FE202 American Education in Theory and Practice(3sh)
Major: (33-35sh) Required courses: CH113 Concepts in Chemistry (4sh) CH114 Basic Inorganic Chemistry (4sh) CH231 Organic Chemistry I (4sh) CH232 Organic Chemistry II (4sh) CH321 Quantitative Analysis (4sh) CH322 Instrumental Analysis (4sh) CH341 Physical Chemistry I (4sh) CH343 Physical Chemistry Laboratory I (1sh) CH498 Problems in Chemistry (1-2sh)	Major: (33-35sh) Required courses: CH113 Concepts in Chemistry (4sh) CH114 Basic Inorganic Chemistry (4sh) CH231 Organic Chemistry I (4sh) CH232 Organic Chemistry II (4sh) CH321 Quantitative Analysis (4sh) CH322 Instrumental Analysis (4sh) CH341 Physical Chemistry I (4sh) CH343 Physical Chemistry Laboratory I (1sh) CH498 Problems in Chemistry (1-2sh)
Controlled electives: One additional chemistry course from list: (3-4sh) CH342, CH351, CH411	Controlled electives: One additional chemistry course from list: (3-4sh) CH342, CH351, CH411
Other Requirements: (4sh) BI111 Principles of Biology I (4sh)	Other Requirements: (5sh) BI111 Principles of Biology I (4sh) <i>GS112 or GS114 (1sh)</i>
Free Electives: (0-1sh)	Free Electives: (0)
Total Degree Requirements: (124-126sh)	Total Degree Requirements: (126-129sh)

b. There are no associated course changes.

3. Rationale for Change.

The Chemistry Education Program needs 4 semester hours of an earth science course to comply with NSTA standards for NCATE accreditation. GS111/112 (oceanography, geology) and GS113/114 (meteorology, astronomy) are designed specifically for secondary science education majors, have a laboratory component, and allow the students to choose an earth science course according to their interest.

The addition of EX301 Education of Students with Disabilities in Inclusive Secondary Settings satisfies the Special Education Competency Requirement for accreditation by the Pennsylvania Department of Education.

The rationale for the change from MA121/122 Calculus I and II for Business, Natural, and Social Sciences to MA123/124 Calculus I and II for Physics, Chemistry, and Mathematics is to better prepare the chemical education students for other required course work involving calculus.

Part III. Implementation

1. How the Revisions will Affect Students Already in the Existing Chemistry Education Program.

The revision to include the earth science courses will not affect students who are already in the existing Chemistry Education Program. Most of these students have been advised to take either GS111/112 or GS113/114 so that at least in practice, while revisions are being made on paper, the Chemistry Education Program is in compliance with the NSTA standards for NCATE accreditation.

The revisions involving mathematics and EX301 will not affect students who are already in the existing Chemistry Education Program.

2. How the Proposed Revisions will Affect Faculty Teaching Loads.

The addition of a 4 semester hour earth science course to the Chemistry Education Program is not expected to affect faculty teaching loads or to require additional classroom space. There are approximately 5 to 10 new chemistry education majors per year and not all of these students will be taking the same earth science course in the same semester.

The addition of the 2 semester hour EX301 course is mandatory for all secondary education programs and the exam option is eliminated. Therefore, faculty teaching loads may be increased and additional classroom space may be required. However, the Department of Special Education and Clinical Services should be prepared for the increased faculty teaching loads and the additional classroom space because this special education competency requirement has been pending for some time.

The change from MA121/122 to MA123/124 will not affect faculty teaching loads or require additional classroom space. There are approximately 5 to 10 new chemistry education majors per year and not all of these students will be taking their mathematics requirements at the same time.

3. Adequacy of Other Resources.

Other resources (space, equipment, supplies, travel funds) are expected to be adequate.

4. Expectation of an Increase or Decrease in the Number of Students as a Result of These Revisions.

The addition of a required earth science course to the Chemistry Education Program is not expected to change the number of students. For the past two years, students entering the program have been advised to take either GS111/112 or GS113/114 and no significant increase or decrease in the number of students has resulted.

No increase or decrease in the number of Chemical Education students is expected as a result of the revisions involving mathematics and EX301.

Part V. Letters of Support

1. Geology Department (Dr. Frank Hall, Chair)
2. Department of Mathematics (Dr. Gerald M. Buriok, Chairperson)
3. The Liberal Studies Committee (Dr. Darlene Richardson, Director)



Geoscience Department
Indiana University of Pennsylvania
114 Walsh Hall
Indiana, Pennsylvania 15705-1087

(412) 357-2379



October 21, 1997

TO: Roberta M. Eddy
Chair, Curriculum Committee of the Chemistry Department

FROM: Frank W. Hall *FW Hall*
Chair, Geoscience Department

RE: Incorporation of GS 111/112 and GS 113/114 in the Chemistry Education Program

The Geoscience Department unanimously supports the Chemistry Department Chemistry Education Program incorporation of GS 111/112 and GS 113/114.

Liberal Studies Office
352 Sutton Hall

Email DRCHRDSN
Phone x 5715

November 12, 1997

To: Roberta Eddy, Chemistry Department

From: Darlene Richardson, Director *Darlene Richardson*

Subject: Revision in the Liberal Studies portion of BS in Chemistry Education

On November 6, 1997, the Liberal Studies Committee approved the revision in the Liberal Studies portion of the BS in Chemistry Education. GS 111 or GS 113 will be added to the list of specified Liberal Studies Electives (GS 111 and GS 113 are approved LS electives.) I reported this approval to the University-wide Undergraduate Curriculum Committee on November 11, 1997.

Copy: John Eck, Dean, College of Natural Sciences and Mathematics
Pothen Varughese, Chair, Chemistry Department

Department of Mathematics
Indiana University of Pennsylvania
233 Stright Hall
Indiana, Pennsylvania 15705-1072

(412) 357-2608



December 17, 1997

Dr. Roberta M. Eddy, Chairperson
Chemistry Department Curriculum Committee
143 Weyandt Hall
IUP

Dear Dr. Eddy:

I am writing in response to your letter of December 8, 1997, in which you informed me of a proposed revision in the mathematics requirement for students in the Chemistry Education Program.

The faculty of the Mathematics Department support your proposal to change the Liberal Studies requirement from MA 121 Calculus I for Natural, Social Science and Business to MA 123 Calculus I for Physics and Chemistry. Likewise, we support your proposal to change the required Liberal Studies elective from MA 122 Calculus II for Natural, Social Science and Business to MA 124 Calculus II for Physics and Chemistry. Your assessment that the MA 123/124 sequence will better prepare the chemical education students for other required course work involving calculus appears valid.

From a resource perspective, this change will not effect the Mathematics Department since the students will still be required to complete a two semester calculus sequence. The only potential impact is on the number of sections of MA 123 versus MA 121 offered each semester.

I want to make you aware that the University-Wide Undergraduate Curriculum Committee of the Senate is considering proposals from the Mathematics Department which would make MA 123/124 the required calculus sequence for students majoring in Mathematics, Applied Mathematics, and Secondary Mathematics Education. Along with this change in requirements, we have also proposed a name change to MA 123 Calculus I for Physic, Chemistry and Mathematics, and MA 124 Calculus II for Physics, Chemistry, and Mathematics.

Please feel free to contact me if you have any questions or concerns.

Sincerely,


Gerald Buriok

Liberal Studies Office
352 Sutton Hall

Email DRCHRDSN
Phone x 5715

March 4, 1998

To: Roberta Eddy, Department of Chemistry

From: Darlene Richardson, Director *Darlene Richardson*

Subject: Proposed revision in BS in Education—Chemistry

At its February 26, 1998, meeting the Liberal Studies Committee approved the revisions in the Liberal Studies portion of the BS in Education—Chemistry. The changes are in the Math requirement (to MA 123 from MA 121) and in the LS elective category (to MA 123 from MA 122).

Copy: John Eck, Dean, College of Natural Sciences and Mathematics
Pothen Varughese, Chair, Chemistry Department



MEMORANDUM from: **Educational College-School Partnerships**
104 Stouffer Hall, Indiana PA 15705-1087 357-2485

SUBJECT: Curriculum Proposal – Chemistry
TO: Teacher Education Coordinating Council
FROM: John R. Johnson, Associate Dean
Educational College-School Partnerships
DATE: April 28, 1998

Enclosed please find a copy of the proposal presented by the Chemistry Department for changes in Chemistry Education Program. This proposal has been reviewed and approved by the Curriculum Review Committee of the Academy for Teacher Preparation. Would you please review the enclosed proposal and notify me of any changes or revisions.

A special meeting of the Teacher Education Coordinating Council is scheduled for Tuesday, May 12, 1998 at 3:00 p.m. in Stouffer 109 to vote on this proposal. If you can not attend the meeting please e-mail me or call in your vote to Kathy at Ext. 2485.

A date will be announced next week for the May meeting.

Kn

Enc.

Cc: Dr. John Butzow, Dean



Memo

To: Academy for Teacher Preparation Curriculum Review Committee Members(members listed below)
From: John W. Butzow, Dean
CC: John Johnson, Dr. Roberta Eddy
Date: 04/27/98
Re: Minutes – April 23, 1998

The committee reviewed and approved without recommended change the proposal presented by the Chemistry Department for changes in the Chemistry Education Program. The group congratulated Professor Eddy on an excellent proposal.

Members:

Dr. S. Glor Scheib	Dr. Kent Jackson
Dr. J. McDonough	Dr. Laurie Stamp
Dr. Meghan Twiest	Dr. Laureen Hurt
Mr. Royden Grove	Ms. Sandra Burwell
Dr. Anne Massey	Dr. W. McPherson
Dr. Jack Lamer	