FAIRMONT STATE UNIVERSITY

**MEMORANDUM**

TO: Curriculum Committee

FROM: Jack Kirby

DATE: March 7, 2013

SUBJECT: Curriculum Proposal #12-13-48, REVISION #2
BA Education Specialization in Physics
Final Faculty Senate Approval 3/5/2013

I recommend approval of the attached REVISION #2 of Curriculum Proposal #12-13-48 from the College of Science and Technology, Department of Biology, Chemistry, and Geoscience. This copy is the final draft of Proposal 12-13-48.

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FAIRMONT STATE UNIVERSITY

**MEMORANDUM**

TO: Curriculum Committee

FROM: Jack Kirby

DATE: February 28, 2013

SUBJECT: Curriculum Proposal #12-13-48, REVISION #1

I recommend approval of the attached REVISION #1 of Curriculum Proposal #12-13-48 from the College of Science and Technology, Department of Biology, Chemistry, and Geoscience. The proposal is now ready for submission to Faculty Senate.

FAIRMONT STATE UNIVERSITY

**MEMORANDUM**

TO: Curriculum Committee

FROM: Jack Kirby

DATE: February 19, 2013

SUBJECT: Curriculum Proposal #12-13-48

I recommend approval of the attached Curriculum Proposal #12-13-48 from the College of Science and Technology, Department of Biology, Chemistry, and Geoscience.

This proposal reduces the required hours for the BA in Education with a certification in Physics from 128 hours to 120 hours. It also incorporates the new General Studies requirements. In addition it adds eight credits of major hours for NCATE Accreditation.

c: Dr. Christina Lavorata
Dr. Anthony Gilberti
Dr. Deb Hemler
Ms. Evie Brantmayer
Ms. Leslie Lovett

**CURRICULUM PROPOSAL** (Submit one hard copy and an electronic copy to the Associate Provost by the second Tuesday of the month.)

**Proposal Number:** 12-13-48

**School/Department/Program:** College of Science & Technology/BCG/Geoscience

**Preparer/Contact Person:** Dr. Deb Hemler

**Telephone Extension:** 4393

**Date Originally Submitted:**

**Revision (Indicate date and label it Revision #1, #2, etc.):**

**Implementation Date Requested:** Fall 2013

I. **PROPOSAL**. Write a brief abstract, not exceeding 100 words, which describes the overall content of the proposal.

**This proposal reduces the total hours needed for a B.A. degree in Education with a certification in Physics from 128 hours to 120 hours by eliminating free elective hours. This proposal also incorporates the new General Studies requirements. In addition, NCATE accreditation issues are addressed in the proposal by adding 8 credits of required major courses to the program.**

II. **DESCRIPTION OF THE PROPOSAL**. Provide a response for each letter, A-H, and for each Roman Numeral II–V. If any section does not apply to your proposal, reply N/A.

A. Deletion of course(s) or credit(s) from program(s)

**16 hours of free electives have been eliminated from the program.**
**12-13 hours of major electives deleted from the program.**

Total hours deleted. **16 hours**

B. Addition of course(s) or credit(s) from program(s)

| **Addition of:** | | |
|---|---|---|
| **Principles of Biology I** | **BIOL1105** | **(4 credits)** |
| **Astronomy** | **PHYS 2202** | **(3 credits)** |
| **Science Integration Seminar** | **PHSC 4430** | **(1 credit)** |

Total hours added. **8 hours**

C. Provision for interchangeable use of course(s) with program(s)

D. Revision of course content. Include, as an appendix, a revised course description, written in complete sentences, suitable for use in the university catalog.

**n/a**

E. Other changes to existing courses such as changes to title, course number, and elective or required status.

F. Creation of new course(s). For each new course

1. Designate the course number, title, units of credit, prerequisites (if any), ownership (FSU or shared) and specify its status as an elective or required course. If you are creating a shared course, attach a memo from the Deans of the affected Schools explaining the rationale for the course being shared.

**n/a**

2. Include, as an appendix, a course description, written in complete sentences, suitable for use in the college catalog.

3. Include, as an appendix, a detailed course outline consisting of at least two levels.

4. In order to meet the requirements as outlined in Goal One of the Strategic Plan, please include Outcome Competencies and Methods of Assessment as an appendix. Examples are available upon request from the Chair of the Curriculum Committee.

**n/a**

G. Attach an itemized summary of the present program(s) affected, if any, and of the proposed change(s).

Describe how this proposal affects the hours needed to complete this program. Specifically, what is the net gain or loss in hours? Use the format for Current and Proposed Programs in Appendix A.

**As directed, there has been a net loss of 8 credit hours from the program.**
**See Appendix A**

III. **RATIONALE FOR THE PROPOSAL.**

A. **Quantitative Assessment**: Indicate the types of assessment data, i.e., surveys, interviews, capstone courses, projects, licensure exams, nationally-normed tests, locally developed measurements, accreditation reports, etc., that were collected and analyzed to determine that curricular changes were warranted. Quantitative data is preferred.

**In 2011, all Special Program Areas (content specializations) in Education submitted review for NCATE accreditation. The National Science Teachers Association (NSTA) determines the SPA standards for this accreditation process in science fields. Standard 1 deals with content competency and provides competencies which all chemistry certified teachers must meet. Programs must cover 80% or more of the Content Analysis for Secondary Science outcomes in three areas: core, advanced, and supporting competencies. Fairmont State's alignment in 2011 fell within 80% compliance. In 2012, NSTA changed their teaching standards. The revised Content Analysis Form is available for review by visiting http://www.nsta.org/pd/ncate/docs/SecondaryScienceContentAnalysisForm.pdf Alignment of our program to these new standards was completed in January 2012. While our physics program aligns with the core and advanced Physics outcomes, it falls short of the supporting competencies or 57% outcomes met through coursework. Our current program meets only the chemistry and mathematics supporting competencies and omits outcomes in the areas of earth science and biology. Addition of astronomy, seminar, and biology classes will address all supporting competencies in science.**

B. **Qualitative Assessment**: Based upon the assessment data above, indicate why a curricular change is justified. Indicate the expected results of the change. Be sure to include an estimate of the increased cost, or reduction in cost of implementation. FOR EXAMPLE: Will new faculty, facilities, equipment, or library materials be required?

**At 57% alignment with supporting science competencies, the physics certification programs would be in jeopardy of receiving a "not met" on Standard 1 of the SPA report for NCATE. There will be no financial burden to the institution since these courses already exist and are required for other teaching certification areas. Since we have so few physics certifications, there will be no significant increase in enrollment in these courses.**

IV. Should this proposal affect any course or program in another school, a memo must be sent to the Dean of each school impacted and a copy of the memo(s) must be included with this proposal. In addition, the Deans of the affected schools must sign below to indicate their notification of this proposal.

By signing here, you are indicating your college's/school's notification of this proposal.

| College/School | Dean | Signature |
|---|---|---|
| Science & Technology | Dr. Anthony Gilberti | |
| School of Education | Dr. Van O. Dempsey | |
| | | |
| | | |

V. Should this proposal affect any course to be added or deleted from the general studies requirements, a memo from the chair of the General Studies Committee indicating approval of the change must be included with this proposal.

VI. ADDITIONAL COMMENTS.

**APPENDIX A**

BA in Education: Specialization in Physics (9-Adult)

Current Program

| Required Major Courses | | HRS |
|---|---|---|
| PHYS 1101/1102 | Introduction to Physics I, II | 8 |
| OR | OR | OR |
| PHYS 1105/1106 | Principles of Physics I, II | 10 |
| PHYS 3211/3212 | Intermediate Physics IA, IB | 6 |
| PHYS 3221/3222 | Intermediate Physics IIA, IIB | 6 |
| PHYS 3230 | Intermediate Physics Laboratory | 2 |
| PHSC 4431 | Methods and Materials in Teaching Science | 3 |
| MATH 3315 | Calculus II | 4 |
| OR | OR | |
| MATH 1186 | Applied Calculus II | |
| OR | OR | |
| TECH 3300 | Engineering Analysis II | |
| EDUC 2200 | Intro to Education | 3 |
| EDUC 2201 | Instructional Technology | 3 |
| EDUC 2203 | Human Development, Learning and Teaching | 3 |
| EDUC 2240 | High Incidence Disabilities for Educators | 3 |
| EDUC 2260 | Instructional Design I | 3 |
| EDUC 2265 | Field Experience II | 1 |
| EDUC 3331 | Reading in the Content Areas | 3 |
| EDUC 3340 | Instructional Design II | 3 |
| EDUC 3351 | Inclusive Classroom Practices | 3 |
| EDUC 3365 | Field Experience III | 2 |
| EDUC 4485 | Action Research | 1 |
| EDUC 4486 | Portfolio | 1 |
| EDUC 4496 | Secondary Student Teaching | 10 |

| | |
|---|---|
| **TOTAL Required Major Courses** | **68-70** |
| Major electives ( See below) | **12-13** |
| Minor Electives | **0** |
| **TOTAL HOURS FOR MAJOR** | **80-82** |

| Required General Studies Courses | | | |
|---|---|---|---|
| **GENERAL STUDIES REQUIRED FOR THIS MAJOR** | | | |
| | MATH Elective | | 4 |
| | CHEM 1105/2200<br>OR<br>CHEM 1101/02 | | 9<br><br>8 |
| FIRST YEAR EXPERIENCE | | | 15-16 |
| | ENGL 1104 | Written English I | 3 |
| | ENGL 1108 | Written English II | 3 |
| | INFO 1100 | Computer Concepts and Applications | 3 |
| | MATH | Requirement met by major | X |
| | COMM 2220<br>OR<br>COMM 2201<br>OR<br>COMM 2202 | Communication | 3 |
| SCIENTIFIC DISCOVERY | Requirement met by major | | X |
| CULTURAL/CIVILIZATION DISCOVERY | | | 9 |
| SOCIETY/HUMAN INTERACTIONS | | | 6 |
| ARTISTIC/ CREATIVE EXPRESSION | | | 6 |
| **Total General Studies Hours** | | | **33** |
| **Total Free Electives** | | | **13-15** |
| **Total Hours** | | | **128** |

BA in Education Specialization in Physics (9-Adult)

Proposed Program

| Required Major Courses | | HRS |
|---|---|---|
| BIOL 1105 | Principles of Biology I | 4 |
| CHEM 1105/2200 | Chemical Principles/ Found. Biochemistry | 9 |
| OR | OR | OR |
| CHEM 1101/02 | General Chemistry I,II | 8 |
| PHSC 4431 | Methods and Materials in Teaching Science | 3 |
| PHSC 4430 | Science Integration Seminar | 1 |
| | | |
| PHYS 1101/1102 | Introduction to Physics I, II | 8 |
| OR | OR | OR |
| PHYS 1105/1106 | Principles of Physics I, II | 10 |
| PHYS 3211/3212 | Intermediate Physics IA, IB | 6 |
| PHYS 2202 | Astronomy | 3 |
| PHYS 3221/3222 | Intermediate Physics IIA, IIB | 6 |
| PHYS 3230 | Intermediate Physics Laboratory | 2 |
| MATH 3315 | Calculus II | 4 |
| OR | OR | |
| MATH 1186 | Applied Calculus II | |
| OR | OR | |
| TECH 3300 | Engineering Analysis II | |
| EDUC 2200 | Intro to Education | 3 |
| EDUC 2201 | Instructional Technology | 3 |
| EDUC 2203 | Human Development, Learning and Teaching | 3 |
| EDUC 2240 | High Incidence Disabilities for Educators | 3 |
| EDUC 2260 | Instructional Design I | 3 |
| EDUC 2265 | Field Experience II | 1 |
| EDUC 3331 | Reading in the Content Areas | 3 |
| EDUC 3340 | Instructional Design II | 3 |
| EDUC 3351 | Inclusive Classroom Practices | 3 |
| EDUC 3365 | Field Experience III | 2 |
| EDUC 4485 | Action Research | 1 |
| EDUC 4486 | Portfolio | 1 |
| EDUC 4496 | Secondary Student Teaching | 10 |

| | |
|---|---|
| **TOTAL Required Major Courses** | **84-87** |
| Major electives | 0 |
| Minor Electives | 0 |

**(note: MATH 1185 or 1190 are required general studies course for this program. A second certification area in science is strongly recommended)**

| | |
|---|---|
| **TOTAL HOURS FOR MAJOR** | **84-87** |

| Required General Studies Courses | | |
|---|---|---|
| Attribute IA- Critical Analysis | | 3 |
| | ENGL 1108 (required) | |
| Attribute IB- Quantitative Literacy | | 4 |
| | MATH 1185 or 1190 | |
| Attribute IC- Written Communication | | 3 |
| | ENGL 1104 (required) | |
| Attribute ID- Teamwork | | 3 |
| | COMM 2200 or any other ID | |
| Attribute IE- Information Literacy | | X(IA) |
| | ENGL 1108 or any other IE | |
| Attribute IF- Technology Literacy | | X |
| | EDUC 2201 | |
| Attribute IG- Oral Communication | | X(ID) |
| | COMM 2200 or any other IG | |
| Attribute III- Citizenship | | 3 |
| | POLI 1103 or any other III | |
| Attribute IV- Ethics | | 3 |
| | ENGL 2220 or any other IV | |
| Attribute V- Health | | 2 |
| | PHED 1100 or any other V | |
| Attribute VI- Interdisciplinary | | X(III) |
| | POLI 1103 or any other VI | |
| Attribute VIIA-Arts | | 3 |
| | Any course in VIIA | |
| Attribute VIIB- Humanities | | X(IV) |
| | ENGL 2220 or any other VIIB | |
| Attribute VIIC- Social Sciences | | 3 |
| | GEOG 2210 or any other VIIC | |
| Attribute VIID- Natural Science | | X |
| | CHEM 1101 or CHEM 1105 (major course) | |
| Attribute VIII- Cultural Awareness | | 3 |
| | Any course in VIII | |
| **Additional General Studies hours** | | X |
| Writing Intensive Courses | EDUC 3331, EDUC 3351 | |
| **Total General Studies Hours** | | **30** |

| | |
|---|---|
| **Total Free Electives** | **3-6** |
| **Total Hours** | **120** |