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**MEMORANDUM**

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TO: Curriculum Committee

FROM: Jack Kirby 

DATE: March 7, 2013

SUBJECT: Curriculum Proposal #12-13-50, REVISION #2  
BA Education Specialization, General Science  
Final Faculty Senate Approval 3/5/2013

I recommend approval of the attached REVISION #2 of Curriculum Proposal #12-13-50 from the College of Science and Technology, Department of Biology, Chemistry, and Geoscience. This copy is the final draft of Proposal 12-13-50.






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## MEMORANDUM

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TO: Curriculum Committee  
FROM: Jack Kirby   
DATE: February 28, 2013  
SUBJECT: Curriculum Proposal #12-13-50, REVISION #1

I recommend approval of the attached REVISION #1 of Curriculum Proposal #12-13-50 from the College of Science and Technology, Department of Biology, Chemistry, and Geoscience. The proposal is now ready for submission to Faculty Senate.






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**MEMORANDUM**

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TO: Curriculum Committee  
FROM: Jack Kirby   
DATE: February 19, 2013  
SUBJECT: Curriculum Proposal #12-13-50

I recommend approval of the attached Curriculum Proposal #12-13-50 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 General Science 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:** 12-13-50

**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.):** March 7, 2013 Revision #2

**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 General Science from 128 hours to 120 hours by eliminating free elective hours. This proposal also incorporates the new General Studies requirements. In addition, due to NCATE accreditation issues addressed in the proposal, 2 courses were added (8 credits) to required major courses, replacing free elective courses for single science certifications in general science.**

- 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)

**12 hours of free electives have been eliminated from the program for general science**

Total hours deleted. 12 hours

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

**Programs involving two science certification areas:**

**May use 4 credits of major electives from their primary field (any 2000 level in a science field excluding SCIE)**

**Programs involving only a single science certification in general science have a choice of one of two electives:**

**Botany (BIOL 2202 -4 credits) or Zoology (BIOL 2203 -4 credits)**

Total hours added. 4 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.

Most candidates pursuing certifications in science use general science as a secondary certification. This secondary certification rounds out the science background for those specializing in either biology, chemistry, or physics. In some cases education majors from other fields such as health or English pursue general science as a secondary field. These students lack sufficient background in any particular science to do well on general science Praxis exams.

While our general science program aligns with the core and advanced science outcomes, it falls short of the supporting competencies or 75% outcomes met through coursework. Our current program meets the physics, chemistry, earth science and mathematics supporting competencies but omits outcomes in the areas of plant and animal biology.

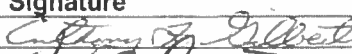
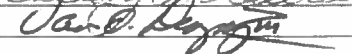
Given this deficiency, two additional science courses should be specified for those pursuing a stand alone certification. Those pursuing general science as a secondary science field will use their primary science coursework as elective hours.

- 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 75% alignment with supporting science competencies, the general science certification program 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 few preservice teachers elect to certify in general science only, 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 General Science (5-Adult)**  
**Current Program**

<b>Required Major Courses</b>		<b>HRS</b>
<b>GENERAL SCIENCE CURRICULUM</b>		
BIOL 1105	Biological Principles I	4
BIOL 1106	Biological Principles I	4
CHEM 1105	Chemical Principles	5
CHEM 2200	Foundational Biochemistry	4
GEOL 1101	Physical Geology	4
GEOL 1102	Historical Geology	4
MATH 1115	Trigonometry and Elementary Functions	3
PHYS 1101	Introduction to Physics I	4
PHYS 1102	Introduction to Physics II	4
PHYS 2202	Astronomy	3
PHSC 4430	Science Integration Seminar	1
PHSC 4431	Methods and Materials in Teaching Science	3
SCIE 1120	Introduction to Meteorology	4
<b>PROFESSIONAL EDUCATION</b>		
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
<b>TOTAL Required Major Courses</b>		<b>86</b>
Major electives		0
Minor Electives		0
<b>TOTAL HOURS FOR MAJOR</b>		<b>86</b>



**Required General Studies Courses**

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	Communication		3
OR			
COMM 2201			
OR			
COMM 2202			
SCIENTIFIC DISCOVERY	Requirement met by major		X
CULTURAL/CIVILIZATION DISCOVERY			9
SOCIETY/HUMAN INTERACTIONS			6
ARTISTIC/ CREATIVE EXPRESSION			6
<b>Total General Studies Hours</b>			<b>33</b>
<b>Total Free Electives</b>			<b>9</b>
<b>Total Hours</b>			<b>128</b>

**BA in Education Specialization in General Science (5-Adult)  
Proposed Program**

<b>Required Major Courses</b>		<b>HRS</b>
<b>GENERAL SCIENCE CURRICULUM</b>		
BIOL 1105	Biological Principles I	4
BIOL 1106	Biological Principles I	4
CHEM 1105	Chemical Principles	5
CHEM 2200	Foundational Biochemistry	4
GEOL 1101	Physical Geology	4
GEOL 1102	Historical Geology	4
PHYS 1101	Introduction to Physics I	4
PHYS 1102	Introduction to Physics II	4
PHYS 2202	Astronomy	3
PHSC 4430	Science Integration Seminar	1
PHSC 4431	Methods and Materials in Teaching Science	3
SCIE 1120	Introduction to Meteorology	4
<b>PROFESSIONAL EDUCATION</b>		
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
<b>TOTAL Required Major Courses</b>		<b>83</b>
Major electives		0
2000 level or higher from primary science certification area ( BIOL 2202 or BIOL 2203 if no second science certification area)		4
Minor Electives		0
<b>(note: MATH 1115 is required for general studies. A second certification area is science strongly recommended)</b>		
<b>TOTAL HOURS FOR MAJOR</b>		<b>87</b>

<b>Required General Studies Courses</b>		
Attribute IA- Critical Analysis		3
	ENGL 1108 (required)	
Attribute IB- Quantitative Literacy		3
	MATH 1115	
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		3
	Any 3 credits from V list	
Attribute VI- Interdisciplinary		X(III)
	POLI 1103 or any other VI	
Attribute VIIA-Arts		3
	Any course in VIIA	
Attribute VI IB- Humanities		X (IV)
	ENGL 2220 or any other VIIB	
Attribute VI IC- Social Sciences		3
	GEOG 2210 or any other VIIC	
Attribute VI ID- Natural Science		X
	CHEM 1105	
Attribute VI II- Cultural Awareness		3
	Any course in VIII	
<b>Additional General Studies hours</b>		<b>X</b>
Writing Intensive Course	EDUC 3331 OR EDUC 3351	
<b>Total General Studies Hours</b>		<b>30</b>
<b>Total Free Electives</b>		<b>3</b>
<b>Total Hours</b>		<b>120</b>