

Addendum Attached: Letter of Approval by the WV Board of Education dated November 13, 2017

FINAL FACULTY SENATE APPROVAL ON MAY 9, 2017

MEMORANDUM

TO:

Faculty Senate

FROM:

Jack Kirby

DATE:

April 25, 2017

SUBJECT:

Curriculum Proposal #16-17-19

Science Teacher Certification

I recommend approval of the attached Curriculum Proposal 16-17-19. This proposal seeks to create a secondary science teacher certification in conjunction with the B.A. in Education. (No new degree program is being proposed.) Please note the implementation date is August 2018.

Dr. Christina Lavorata

Dr. Don Trisel

Dr. Carolyn Crislip-Tacy

Dr. Deb Hemler

Mr. Sean Harwell

Ms. Leslie Lovett

Ms. Laura Ransom

Dr. Shayne Gervais



MEMORANDUM

TO:

Curriculum Committee

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

Proposal Number:	16-17-19
School/Department/Program:	Biology, Chemistry, Geoscience- Science & Technology
Preparer/Contact Person:	Dr. Deb Hemler & Sean Harwell
Telephone Extension:	4393
Date Originally Submitted:	April 10, 2017
Revision (Indicate date and label it Revision #1, #2, etc.):	
Implementation Date Requested:	August 15, 2018
This proposal seeks to create a secondary science 1. Add a secondary science 2. Modify the name & cour Geology, 3. Generate two new course 4. Create a new prefix for geology.	not exceeding 100 words, which describes the overall content of the ondary science teacher certification in conjunction with the B.A. in a proposal includes the following objectives: teacher certification, Earth & Space Science (5-Adult) resenumber of existing GEOL 1103 Introduction to Environmental res in support of the Earth & Space Science (ESS) certification, respectively. Secience course work: GEOS, rescience courses from the prefix PHSC to GEOS.
DESCRIPTION OF THE PROPOSAL V. If any section does not apply to you	L. Provide a response for each letter, A-H, and for each Roman Numeral II– our proposal, reply N/A.
A. Deletion of course(s) or cred	it(s) from program(s)
	Total hours deleted. N/A
B. Addition of course(s) or cred	it(s) from program(s)

Total hours added. 120

Creation of a new secondary science certification: Earth & Space Science (5-Adult) as part of the existing B.A.E in Secondary Education. (See Appendix A)

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

N/A

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.

GEOL 1103 Introduction to Environmental Geology changed to GEOL 2300 Environmental Geology

PHSC 2201 Exosphere changed to GEOS 2201 Exosphere

PHSC 2202 Geosphere changed to GEOS 2202 Geosphere

- 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.

Designation	Course #1	Course #2
Course No.	GEOS 2200	GEOS 3100
Course Title	Oceans and Climate	Informal Science Field Experience
Credits	4 credits	1 credit
Prerequisites	Admission to Teacher Education	Admission to Teacher Education
Ownership	FSU only	FSU only
Status	Required Course	Required course

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

GEOS 2200 Oceans and Climate: See Appendix B GEOS 3100 Informal Science Field Experience: See Appendix C

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

GEOS 2200 Oceans and Climate: See Appendix B

GEOS 3100 Informal Science Field Experience: See Appendix C

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.

GEOS 2200 Oceans and Climate: See Appendix B GEOS 3100 Informal Science Field Experience: See Appendix C

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.

The proposed certification program is new and included in Appendix A. The proposed program will consist of 120 credit hours as mandated by HEPC. For credit distribution, please consult 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.

New certification:

The impetus for this curriculum proposal resulted when the new WV Science Standards in Policy 2520.3C, enacted in 2015, mandated an Earth & space science course at the high school level in fall of 2016. FSU science education faculty conducted a survey of WV higher education institutions. Only one institution (Ohio Valley University) in the state offered an Earth and Space Science (ESS) certification. The instructor who initiated and taught in that program recently retired and it is not certain whether they will hire a replacement instructor. WV Wesleyan University offered some variation on an environmental and ESS certification. The lack of certifying institutions created a bottleneck in the production of highly qualified teachers in this field. This proposal aims to assist the state by providing ESS certified teachers and become the first public institution in WV to offer a true Earth and space science certification.

A survey of ESS programs in the state (Ohio Valley University) and in neighboring states (Towson University) was conducted to determine coursework requirements. This proposed program contains more ESS content than OVU and exhibits better alignment with the Praxis II certification exam. The proposed coursework aligns with neighboring state programs.

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?

ESS Certification:

This curricular change is necessary to provide highly qualified teachers to teach high school Earth and space science courses. Fairmont State should continue its tradition of being a leader in teacher

preparation by being one of the first state institutions to offer ESS certification. It is hoped that by providing this unique certification, enrollments in secondary science education will increase. Neighboring states require ESS certifications to teach their high school ESS courses. FSU graduates with an ESS certification would be more competitive in seeking jobs outside of West Virginia.

Renumbering and renaming of GEOL 1103 Introduction to Environmental Geology:

The new certification predominantly uses existing course work offered regularly in conjunction with other science majors and secondary science certifications. The new number and name for the Introduction to Environmental Geology course is necessary due to the prerequisite coursework and the nature of the course content. Environmental geology rarely has a 1000 level designation at other universities since it assumes foundational knowledge of chemistry and geology. Since we are requiring prerequisite courses, the need for "Introduction to" in the title is no longer necessary. It makes sense rename and renumber GEOL 1103 Introduction to Environmental Geology to GEOL 2300 Environmental Geology.

The offering of the Environmental Geology course will not require new faculty since the coursework in this certification will be offered in alternating years. Currently GEOL 1102 Historical Geology is offered every spring with low enrollment numbers. Alternating Historical Geology and Environmental Geology will increase enrollments and lower the number of existing under-enrolled geology courses.

Creation of new GEOS prefix:

Physical Science (PHSC) prefix is not descriptive of the content being offered in the elementary science courses currently labeled as PHSC. The content of the education science courses are earth and space science-related so are more appropriately described as "geoscience" or the prefix "GEOS". Registrar, Shayne Gervais, has confirmed that this prefix is not currently in use and would be appropriate to use with these courses.

Creation of two new courses:

An analysis of course content for the classes suggested for the certification program was conducted to check for alignment with objectives for the Praxis II ESS certification exam. Oceanography was missing from the program. Also, it was noted in other ESS programs from other states, upper division courses were often lacking in these programs. GEOS 2200 and GEOS 3100 will serve to eliminate the gap in content, as well as, the deficiency in upper level geoscience classes. Each has been offered twice as PHSC 1199 courses and are fully developed and vetted. It should be noted that these courses have been offered in-load so no new faculty will be required to offer these new 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.

College/School	Dean	Signature _i	. //
Dr. Don Trisel	College of Science & Technology	Don In	~
Dr. Carolyn Crislip-Tacy	School of Education	Carolin Cris	slip- Dacy
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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.

NA

VI. ADDITIONAL COMMENTS.

APPENDIX A: B.A. Degree in Education (Earth & Space Science 5-Adult) Proposed Program

equired Major Co	ourses (ESS certification)	HRS	
OL 1105	Biological Principles I	4	
HEM 1105	Chemical Principles I	5	
HYS 1101	Introduction to Physics I	4	
HYS 2202	Astronomy	3	
EOL 1101	Physical Geology	4	
EOL 1102	Historical Geology	4	
EOL 2300	Environmental Geology	4	
EOS 2200	Oceans and Climate	4	
EOS 3100	Informal Science Field Experience	11	
CIE 1120	Introduction to Meteorology	4	
CIE 1107	Geographic Information Systems (GIS)	4	
CIE 1105	Environmental Science	4	
HSC 4431	Methods & Materials in Teaching Science	3	
HSC 4430	Science Integration Seminar	1	
OTAL Required N			49
	ote: MATH 1540 is a prerequisite for PHYS 1101		
ıd serves as a Ge	neral Studies requirement)		
•	ourses (Professional Education)	HRS	
DUC 2200	Introduction to Education	3	
ነበር ኃኃርላ	Instructional Technology	3	
DUC 2201		<u> </u>	
	Human Development, Learning and		
DUC 2203	Human Development, Learning and Teaching	3	
DUC 2203 DUC 2240	Human Development, Learning and Teaching High Incidence Disabilities for Educators	3 3	
DUC 2203 DUC 2240 DUC 2260	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I	3 3 3	
DUC 2203 DUC 2240 DUC 2260 DUC 2265	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II	3 3 3 1	
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas	3 3 3 1 1 3	
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II	3 3 3 1 3 3	
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3351	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices	3 3 3 1 1 3 3 3	
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3351 DUC 3365	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III	3 3 3 1 3 3 3 3 2	
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3351 DUC 3365 DUC 4485	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research	3 3 3 1 3 3 3 3 2	
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3351 DUC 3365 DUC 4485	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research Portfolio	3 3 3 1 3 3 3 3 2 1	
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3351 DUC 3365 DUC 4486 DUC 4486 DUC 4496	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research Portfolio Secondary Student Teaching	3 3 3 1 3 3 3 3 2	
DUC 2203 DUC 2240 DUC 2265 DUC 3331 DUC 3340 DUC 3365 DUC 4486 DUC 4496 DUC 4496 DUC 4496 DUC ACCURRENCE IN INC. INC. INC. INC. INC. INC. INC. I	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research Portfolio Secondary Student Teaching	3 3 3 1 3 3 3 3 2 1	3
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3351 DUC 3365 DUC 4486 DUC 4486 DUC 4496	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research Portfolio Secondary Student Teaching	3 3 3 1 3 3 3 3 2 1	39
DUC 2203 DUC 2240 DUC 2265 DUC 3331 DUC 3340 DUC 3365 DUC 4486 DUC 4496 DUC 4496 DUC 4496 DUC ACCURRENCE IN INC. INC. INC. INC. INC. INC. INC. I	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research Portfolio Secondary Student Teaching	3 3 3 1 3 3 3 3 2 1	39
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3365 DUC 4485 DUC 4486 DUC 4496 DTAL Required N	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research Portfolio Secondary Student Teaching Major Courses	3 3 3 1 3 3 3 3 2 1	39
DUC 2203 DUC 2240 DUC 2260 DUC 2265 DUC 3331 DUC 3340 DUC 3365 DUC 4485 DUC 4486 DUC 4496 DTAL Required N	Human Development, Learning and Teaching High Incidence Disabilities for Educators Instructional Design I Field Experience II Reading in the Content Areas Instructional Design II Inclusive Classroom Practices Field Experience III Action Research Portfolio Secondary Student Teaching	3 3 3 1 3 3 3 3 2 1	39

TOTAL HOURS FOR MAJOR (and minor if required)

88

Required General Studies C	ourses	
Attribute 1 – Critical Analysis		3
	ENGL 1102 Wr. English (or any other Att. 1)	
Attribute 2 – Quantitative Liter	acy	3
	MATH 1540 Trigonometry (or any other Att. 2)	
Attribute 3 – Written Commun	ication	3
	ENGL 1101 Wr. English I (or any other Att. 3)	
Attribute 4 – Teamwork		3
	COMM 2202 Int. to Group Discussion (or any other Att. 4)	
Attribute 5 – Information Litera	асу	X
	ENGL 1102 Written English II	
Attribute 6 – Technology Litera	acy	X
	EDUC 2201 Instructional Technology	
Attribute 7 – Oral Communica	tion	X
	COMM 2202 Int. to Group Discussion	
Attribute 8 – Citizenship		3
	POLI 1103 American Gov. (or any other Att. 8)	
Attribute 9 – Ethics		3
	SOCY 2205 Race Class & Gender (or any other Att. 9)	
Attribute 10 – Health		X
	EDUC 2203 Hum. Dev., Learning	
Attribute 11 – Interdisciplinary		3
	GEOG 2210 Intro to Geography (or any course in Att. 11)	
Attribute 12 – Arts		3
	Any course in Att. 12	
Attribute 13 – Humanities		X
	ENGL 2220 World Lit. I (or any other Att. 13)	
Attribute 14 - Social Sciences	3	3
	PSYC 1101 Intro to Psych. (or any other Att. 14)	
Attribute 15 - Natural Science		X
	CHEM 1105 Chem. Principles I	
Attribute 16 – Cultural Awaren	ness	3
	ENGL 2220 World Lit. I	
Additional General Studies ho	urs (Writing Intensive coursework)	X
	EDUC 3331, EDUC 3351	
TOTAL GENERAL STUDIES	HOURS	30
TOTAL FREE ELECTIVES		2
TOTAL HOURS		420
IOTAL HOURS		120

APPENDIX B: GEOS 2220 Oceans and Climate

Designation	Course #1
Course No.	GEOS 2200
Course Title	Oceans and Climate
Credits	4 credits
Prerequisites	Admission to Teacher Education
Ownership FSU only	
Status	Required Course

GEOS 2220 FSU Oceans and Climate4 hrs.

The Oceans and Climate course uses relevant ocean issues to teach oceanography and climate concepts. Teacher candidates are exposed to the integrated nature of the science involved in understanding ocean issues. Project-based learning modules explore student understanding of ocean issues, promote ocean science literacy, explore impacts on the ocean and/or terrestrial environment, and require application of content knowledge to complete authentic assessments designed to suggest solutions for societal needs. (Students completing this course may not receive credit for both SCIE 2200 and GEOS 2200) PR: GEOL 1101, BIOL 1105

Course Outline

- 1. Ocean Basins
 - a. Ocean Geography and Intro to Plate Tectonics
 - b. Ocean Literacy
- 2. Tidal Energy
 - a. Gravity
 - b. Tides
 - c. Energy
- 3. Offshore Drilling
 - a. Seafloor structure
 - b. Oil and Gas Formation
 - c. Oil and Gas Exploration
- 4. Tsunamis
 - a. Plate motion
 - b. Earthquakes
 - c. Tsunami warning
- 5. Red Tides or Algal Blooms
 - a. Taxonomy
 - b. Cycles: Nitrogen and Phosphorus
 - c. Algal Blooms
- 6. Coral Bleaching
 - a. Photosynthesis
 - b. Symbiosis
 - c. Coral Classification
 - d. Coral Bleaching
- 7. Garbage Gyres
 - a. Watersheds

- b. Currents
- c. Density
- d. Major Garbage Gyres
- 8. Ocean Acidification
 - a. Acids/bases & pH
 - b. Calcium carbonate and Shell formation
 - c. Water chemistry
 - d. Ocean acidification
- 9. Ocean Storms
 - a. Meteorology
 - b. Storm classification
 - c. Hurricane formation
- 10. Dead Zones
 - a. Water chemistry (dissolved oxygen)
 - b. Runoff
 - c. Dead zone formations
- 11. Overfishing
 - a. Food webs
 - b. Trophic levels
 - c. Population ecology
 - d. overfishing
- 12. Invasive Species
 - a. Ecosystems
 - b. Biomes
 - c. Competition by invasive species
- 13. Sea Level Rise
 - a. Thermal expansion
 - b. Climate change
 - c. Topographic maps
 - d. Sea level rise
- 14. El Nino/La Nina
 - a. Climate zones
 - b. Climate & weather
 - c. Ocean circulation
 - d. El Nino/La Nina effects
- 15. Coastal Environment Degradation
 - a. Coastal environment classification
 - b. Barrier Islands
 - c. Coastal wetland ecology
- 16. Pedagogy Analysis
 - a. Project-based Learning WebQuest
 - i. Connecting Climate Change to Ocean Issues
 - ii. Applying course content
 - b. Learning cycle
 - i. Exploring
 - ii. Concept Development
 - iii. Application
 - c. Inquiry Learning

Oceans and Climate Course Outcomes:

Outcome	Assessment
1. Content Knowledge: Teacher candidates	Average of module quizzes (n=12)
demonstrate a competency in fundamental	(80% of students will average 70% or higher)
concepts, principles, theories, and laws pertaining	
to ocean science.	
2. Scientific Inquiry: Teacher candidates engage in	Average on inquiry activities (n=4)
scientific inquiry when investigating ocean	(80% of students will average 70% or higher)
phenomena.	
3. Science Technology Society: Teacher candidates	Ocean issue framework assignments (n=13)
will use new-found knowledge and skills to	(80% of students will average 7.0 or higher)
identify ecological and societal impacts and	
suggest viable solutions to remediate effects on	
local and global communities.	

APPENDIX C: GEOS 3100 Informal Science Field Experiences

Designation	Course #2
Course No.	GEOS 3100
Course Title	Informal Science Field Experience
Credits	1 credit
Prerequisites	Admission to Teacher Education
Ownership	FSU only
Status	Required course

The informal science field experience course provides students with the opportunity to teach as informal science educators to provide unique learning environments to increase appreciation and understanding of science. Students will participate in informal science training, deliver science presentations designed to deepen K-12 student understanding of science, showcase West Virginia science & engineering, and encourage K-12 students to pursue future careers in STEM fields.

Course Outline

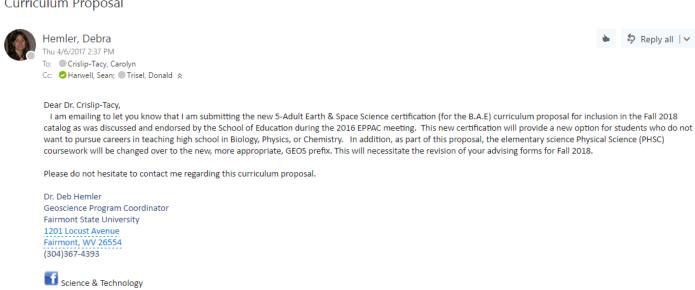
- 1. Informal Science Training
 - a. Delivering Science content in informal settings
 - b. Pedagogy in Informal science settings
 - c. Group management
 - d. WV SPOT Ambassador workshop
- 2. Presentation Certification
 - a. Professionalism and presenting
 - b. Practice presentations
 - c. Certification on one STEM presentation
 - d. Proficiency in hands-on activity
- 3. Presentations
 - a. Presenting in After School Programs
 - b. Presenting in PDS schools
 - c. Presenting at West Virginia Science Teachers Association

Course Outcomes and Assessments

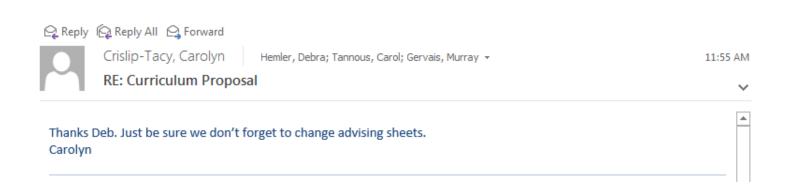
Outcomes	Assessment	
1. Teacher candidate will become proficient in	Oral presentation Rubric	
delivery of WV STEM-based presentation.	(80% of students will receive certification on at least	
	one presentation)	
2. Teacher candidates will successfully present a	WV SPOT confirmation matrix & K12 feedback	
minimum of two presentations to the public.	(80% of certified presenters will successfully deliver a	
	minimum of two presentations)	

Appendix D: Dean of Education, Health, and Human Performance Memo

Curriculum Proposal







Mission Statement: Fairmont State University's mission for the Earth & Space Science Education Program is to ensure teacher candidates in Earth & space science education (5-Adult) have the necessary knowledge, skills, and dispositions in their area of licensure to be effective science teachers in service to their school and community at large. The Earth & Space Science Education program creates opportunities for teacher candidates to engage as professionals in formal and informal educational settings, as well as, their field of geoscience. Teacher candidates demonstrate competencies in science content, nature of science, scientific practices (inquiry), and science pedagogical content knowledge (PCK).

Program Goals:

Goals	Measures
Goal 1-Recruitment: To increase the visibility of FSU's science	Outreach Activity Log
education program statewide to facilitate FSU and program	
recruitment efforts.	
Goal 2- Employment: To assist teacher candidates in seeking	Graduate employment survey
employment in a related field of study or graduate school within the	
first year of graduation.	
Goal 3-Accreditation: To begin NSTA/CAEP Accreditation process	NSTA Accreditation Report
for the ESS Program.	
Goal 4_ Advisory Board: To create an Advisory Board to guide the	Advisory Board Contact List
direction and future of the Program	

Program Outcomes:

Outcomes	Measures
1. Knowledge-Effective teachers of science articulate the knowledge and practices of contemporary science. They interrelate and interpret important concepts, ideas, and applications in their fields of licensure. 2. Content Pedagogy-Effective teachers of science use knowledge of student learning to develop student's scientific knowledge. Preservice teachers use scientific inquiry to develop this knowledge for all students. 3. Learning Environments-Effective teachers of science are able to plan for engaging all students in science learning by setting appropriate goals that are consistent with knowledge of how students learn science and are aligned with state and national standards. The plans reflect the nature and social context of science, inquiry, and appropriate safety considerations. Candidates design and select learning activities, instructional settings, and	Measures - Field GPA - Praxis II Test Scores - Student Teaching Assessment - Unit Plan rubric - Research Paper - Unit Plan rubric - Student teaching observation rubric - Unit Plan rubric
resourcesincluding science-specific technology, to achieve those goals; and they plan fair and equitable assessment strategies to evaluate if the learning goals are met. 4. Safety- Effective teachers of science can, in a P-12	-Student Teaching Observation Rubric
classroom setting, demonstrate and maintain chemical safety, safety procedures, and the ethical treatment of living organisms needed in the P-12 science classroom appropriate to their area of licensure.	- PCK Portfolio rubric -Unit Plan Rubric

5.	Impact on Student Learning- Effective teachers of science	-	Action Research Paper rubric
	provide evidence to show that P-12 students' understanding	-	Science AR supplement rubric
	of major science concepts, principles, theories, and laws		
	have changed as a result of instruction by the candidate and		
	that student knowledge is at a level of understanding		
	beyond memorization. Candidates provide evidence for the		
	diversity of students they teach.		
6.	Professional Knowledge and Skills- Effective teachers of	-	PCK Portfolio
	science strive continuously to improve their knowledge and		
	understanding of the ever changing knowledge base of both		
	content, and science pedagogy, including approaches for		
	addressing inequities and inclusion for all students in		
	science. They identify with and conduct themselves as part		
	of the science education community.		

From: Gervais, Shayne

Sent: Wednesday, February 08, 2017 11:19 AM

To: Hemler, Debra < <u>Deb.Hemler@fairmontstate.edu</u>> **Subject:** RE:

Prefix codes

Other than a curriculum proposal I can't think that there would be anything else. GEOS has never been used so that's fine. You'll have to identify what the old and new numbers will be for each course.

Shayne Gervais, PhD University Registrar Fairmont State University 317 Turley Center 304-367-4658 sgervais@fairmontstate.edu

From: Hemler, Debra

Sent: Wednesday, February 08, 2017 10:47 AM To: Gervais,

Shayne

Subject: Prefix codes

Hi Shane,

I am drafting a curriculum proposal to shift my geoscience courses out of the PHSC designation and into a more appropriated prefix that represents the coursework. Also we are drafting a curriculum proposal for a new course. So my question... We have two options: GEOS for Geoscience or ESSC for Earth & Space Science. After talking to my chair, Steve Roof, and Sean we were leaning toward GEOS since we have a geoscience program and nothing that reflects that. Do you see any reason why we should not start naming the new courses GEOS? Do I have to fill out any special paperwork other than a curriculum proposal to initiate a new prefix? Deb

Dr. Deb Hemler Geoscience Program Coordinator Fairmont State University 1201 Locust Avenue Fairmont, WV 26554 (304)367-4393

Science & Technology



1900 Kanawha Boulevard, East, Building 6, Room 304 • Charleston, WV 25305 Steven L. Paine, Ed.D., State Superintendent of Schools wvde.state.wv.us

November 13, 2017

Carolyn Crislip-Tacy, Ed. D.
Interim Dean, School of Education
Fairmont State University
1201 Locust Avenue
Fairmont, WV 26554-2491

Dr. Crislip-Tacy,

West Virginia Board of Education (WVBE) Policy 5100 – Approval of Educator Preparation Programs requires all Educator Preparation Providers to submit for review new, experimental or revised proposals for programs of study leading to licensure to the Educator Preparation Program Review Board (EPPRB). The EPPRB reviewed Fairmont State University's proposed, new program of study leading to licensure in Earth and Space Science 5-Adult and determined that a recommendation for approval should be submitted to the West Virginia Board of Education (WVBE).

The EPPRB recommendation for approval was considered by the WVBE. I am pleased to inform you that during its November, 2017 meeting, the WVBE accepted the EPPRB's recommendation and approved the program as proposed.

Congratulations and thank you for your continued dedication to the public school students of West Virginia. Should you have any questions, please feel free to contact Robert Hagerman, in the Office of Certification and Professional Preparation, by telephone at 800.982.2378 or by email at rhagerma@k12.wv.us.

Respectfully yours,

Robert Hagerman
Executive Director

Office of Certification and Professional Preparation

RH:ss