

LSC Use Only No: <u>07-27</u>	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date: <u>App-11/13/07</u>	Senate Action Date: <u>Info. 12/4/07</u>
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Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person Michael A. Poage	Email Address mpoage@iup.edu
Proposing Department/Unit Geosciences - Natural Sciences and Mathematics	Phone 724-357-5627

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

<i>Current Course prefix, number and full title</i>	<i>Proposed course prefix, number and full title, if changing</i>
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2. Additional Course Designations: check if appropriate

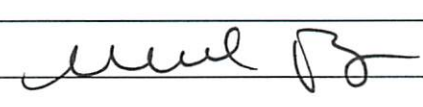
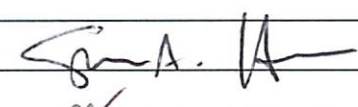
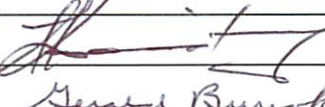
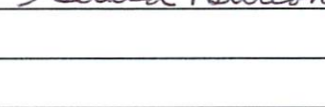
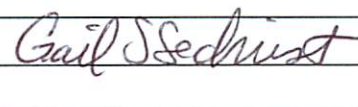
This course is also proposed as a Liberal Studies Course. Other: (e.g., Women's Studies, Pan-African)
 This course is also proposed as an Honors College Course.

3. Program Proposals

New Degree Program Program Title Change Other
 New Minor Program New Track Place into moratorium

General Science Education

<i>Current program name</i>	<i>Proposed program name, if changing</i>
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4. Approvals		Date
Department Curriculum Committee Chair(s)		10/26/07
Department Chair(s)		10/26/07
College Curriculum Committee Chair		10/29/07
College Dean		10/29/07
Director of Liberal Studies *		
Director of Honors College *		
Provost *		
Additional signatures as appropriate: (include title)		
UWUCC Co-Chairs		11/13/07

* where applicable

Received
 NOV 06 2007
 Liberal Studies

Indiana University of Pennsylvania

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October 26, 2007

To whom it may concern:

The Department of Geoscience within the College of Natural Sciences and Mathematics, under advisement of the College Curriculum Committee is proposing to place the General Science Education program into a three-year moratorium, effective Fall 2008. With respect to the criteria outlined in the Undergraduate Curriculum Handbook for placing a program into moratorium (p. 91), we provide the following rationale.

1) Changes in the Certification and Staffing Policies and Guidelines (CSPGs) for Biology, Chemistry, Earth and Space Science, and Physics issued by the Pennsylvania Department of Education (attached) make the General Science Education program effectively obsolete. An educator holding a certificate in any of the aforementioned subject areas is also permitted to teach General Science at the 7-12 grade levels. Thus, IUP graduates with a certificate in one or more science subject areas have better employment prospects across all secondary grades. The employment history of recent graduates makes clear that certificates in the four science subject areas account for all hires at the high school (grade 9-12) level, and most hires at the middle school level.

2) Enrollments in the General Science Education program have been in steady decline over the past seven years. The table below shows the majors enrollment for the General Science Education program for the past seven years. The enrollment numbers have declined from 24 in Fall 2001 to 1 in Fall 2007 (see below), reflecting the fact that students have more employment options (beyond those provided by a certificate in General Science) with a certificate in one of the four science subject areas.

Enrollment in the General Science Education Program 2001-2007:

<u>Year</u>	<u>Primary Major</u>	<u>Secondary Major</u>	<u>Total</u>
2001	18	6	24
2002	10	3	13
2003	12	2	14
2004	7	3	10
2005	2	2	4
2006	2	2	4
2007	0	1	1

The single student currently enrolled in the General Science Education program will graduate in May, 2008 with General Science Education as a secondary major. The General Science Education program is no longer practical as a secondary major because it no longer provides additional teaching eligibility to those enrolled. We do not anticipate enrollment of any more students in the future.

Attached is an e-mail (Sept. 20, 2007) from Dr. Ken Coles (Geoscience Department Education Coordinator) to the education coordinator's of the Chemistry, Physics and Biology Departments soliciting comments and/or support for this program revision. At the time of submission, we have received a supportive response from Dr. Briggs of the Chemistry department (also attached) and no response from either the Physics or Biology Departments.

Thank you for consideration of this proposal. We look forward to hearing back from you in the near future. If you have any questions or concerns, please do not hesitate to contact myself, or Dr. Ken Coles, the Geoscience Department Education Coordinator.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Poage". The signature is fluid and cursive, with a large, stylized initial "M" and "P".

Michael Poage
Chair, Geoscience Department Curriculum Committee

Certification Staffing Assignment
BIOLOGY
(7-12)

Biology is a biological science that generally describes the scientific study of the structure, function, reproduction, growth, heredity, evolution, behavior and distribution of living organisms, and their relations to their natural environments.

Grade Level Scope of Certificate:

A person holding a valid certificate for Biology is qualified to teach biological/life science courses to students in Grades 7 through 12.

Certification Assignment:

An educator holding a certificate for Biology is qualified to teach biological/life science courses such as: life science, botany, anatomy, biochemistry, biophysics, cell and molecular biology, ecology, environmental science, evolutionary biology, genetics, human and animal physiology, marine and aquatic biology, microbiology, radiation biology, toxicology, zoology, etc.

The PA certified Biology teacher may teach any general science or environmental science course (7-12) and any science course at the middle level (7-9). At the middle level, the Biology educator will also provide science instruction, adjusted to the students' abilities when below proficient.

An educator certified in Biology may teach a nutritional science course which involves the scientific study of biological processes by which organisms ingest, digest and use chemical compounds vital to survival, and which cannot be synthesized by the organism itself. It includes instruction in nutritional biochemistry and biophysics, anatomy, and physiology of digestive systems, environmental and behavioral aspects of nutrition, and studies of the nutritional problems of specific organisms.

Special Consideration:

An educator certified in this field may provide school staff development services regarding their collegial studies/skills, may serve in the role of mentor or advisor, and may assist students in understanding the "reading" content area materials related to this subject area.

Certificate Clarification:

Older PA public school certificates that were issued and are applicable for teaching Biology are the following:

Comprehensive Science

CSPG No. 32
July 1, 2004

Restrictions:

A PA certified Biology teacher may not teach courses in Chemistry, Physics, or Earth & Space Science (at the 10-12 level).

References:

Program Specific Guidelines for Certification.

22 PA Code: Chapter 4: §4.21(e)(3); (f)(3)
§4.22(c)(3)
§4.23(c)(3)

Chapter 49: §49.11
§49.81

PA Public School Code: §1202
§1212
§1604

Other CSPG's for Reference: General Science

THIS REVISION SUPERSEDES ALL EARLIER CSPG'S CARRYING THIS NUMBER AND/OR ADDRESSING THIS SUBJECT. PREVIOUS PRINTING DATES ON THIS SUBJECT: 1973, 3/75, 3/78, 2/82, 1/87, 6/92.

CSPG No. 34
July 1, 2004

Instructional Area Code 8420

Certification Staffing Assignment
CHEMISTRY
(7-12)

Chemistry is a physical science that describes the scientific study of the composition and behavior of matter, including its micro and macro-structure, the processes of chemical change and the theoretical description and laboratory simulation of these phenomena.

Grade Level Scope of Certificate:

A person holding a valid PA Chemistry certificate is qualified to teach Chemistry courses in grades 7 through 12.

Certification Assignment:

An educator holding a valid PA certificate for Chemistry is qualified to teach courses such as: chemistry, biochemistry, environmental science, organic and inorganic chemistry, physical science, and general science.

At the middle level, the Chemistry educator will also provide science instruction, adjusted to the students' abilities when below proficient.

Special Consideration:

An educator certified in this field may provide school staff development services regarding their collegial studies/skills, may serve in the role of mentor or advisor, and may assist students in understanding the "reading" content area materials related to this subject area.

Certificate Clarification:

Older PA public school certificates that are applicable for teaching Chemistry are the following:

- Comprehensive Science
 - Physical Science
-

Restrictions:

The PA certified Chemistry teacher may not teach Biology, Physics or Earth & Space Science courses of study.

References:

Program Specific Guidelines for Certification.

22 PA Code: Chapter 4: §4.22(c)(3)
§4.23(c)(3)

CSPG No. 34
July 1, 2004

Chapter 49: §49.11
§49.81

PA Public School Code: §1202
§1212
§1604

Other CSPG's for Reference: General Science

THIS REVISION SUPERSEDES ALL EARLIER CSPG'S CARRYING THIS NUMBER AND/OR ADDRESSING THIS SUBJECT. PREVIOUS PRINTING DATES ON THIS SUBJECT: 3/75, 8/76, 1/87, 7/87, 6/92.

CSPG No. 40
July 1, 2004

Instructional Area Code 8440

Certification Staffing Assignment
EARTH & SPACE SCIENCE
(7-12)

Earth & Space Science describes the study of the earth and other planets as comprehensive physical systems, incorporating solid, liquid, gas, and radiation constituents, as well as exhibiting interactions with other systems. It includes planetary evolution, gravitational physics, atmospheric evolution, volcanism and crustal movement studies, global energy systems, organic systems and ecologies, oceanography, fluid dynamics, orbital mechanics, radiation physics, and the study of planetary and satellite systems.

Grade Level Scope of Certificate:

A person holding a valid PA certificate for Earth & Space Science is qualified to teach all Earth & Space science courses in Grades 7 through 12.

Certification Assignment:

An educator holding a valid PA certificate for Earth & Space Science is qualified to teach courses in areas to include: earth and planetary science, geology, hydrology, oceanography, astronomy, climatology, atmospheric science and meteorology, paleontology, cartography, geomorphology, geochemistry, geophysics and seismology, and general science. An educator holding a valid PA certificate for Earth & Space Science may teach Environmental Science and General Science courses.

At the middle level, the Earth & Space Science educator will also provide science instruction, adjusted to the students' abilities when below proficient.

Certificate Clarification:

Older PA public school certificates, which are applicable for teaching Earth & Space Science courses, include the following:

- . Comprehensive Science
- . Physical Science
- . Geography - only when the educator's preparation is in the area of physical geography and a minimum of 15 semester hours of academic credits in: geology, meteorology, astronomy, oceanography, or cartography.

Special Considerations:

An educator certified in this field may provide school staff development services regarding their collegial studies/skills, may serve in the role of mentor or advisor, and may assist students in understanding the "reading" content area materials related to this subject area.

Restrictions:

A PA certified Earth & Space Science teacher may not teach courses in Biology, Chemistry, or Physics.

CSPG No. 40
July 1, 2004

References:

Program Specific Guidelines for Certification.

22 PA Code: Chapter 4: §4.22(c)(3)
 §4.23(c)(3)
 Chapter 49: §49.11
 §49.81
 §49.85(a)(4)

PA Public School Code: §1202
 §1212
 §1604

Other CSPG's for Reference: General Science

*THIS REVISION SUPERSEDES ALL EARLIER CSPG'S CARRYING THIS NUMBER AND/OR
ADDRESSING THIS SUBJECT. PREVIOUS PRINTING DATES ON THIS SUBJECT: 3/75, 1/87,
7/87, 12/90, 6/92*

Certification Staffing Assignment
PHYSICS
(7-12)

Physics is the scientific study of matter and energy, the formulation and testing of the laws governing the behavior of the matter and energy continuum.

Grade Level Scope of Certificate:

A person holding a valid PA certificate for Physics is qualified to teach Physics courses in grades 7 through 12.

Certification Assignment:

An educator holding a valid PA certificate for Physics is qualified to teach courses such as: physics, biophysics, physical science, general science, astro-physics, nuclear physics, and chemical/atomic/molecular physics. It includes instruction in areas such as classical and modern physics, matter, energy, heat, thermodynamics, kinematics, gravitational forces/fields, optics, electricity and magnetic forces/fields, mechanics, nuclear processes, wave properties and sound, relativity and quantum theory, quantitative methods and laboratory methods.

At the middle level, the Physics educator will also provide science instruction, adjusted to the students' abilities when below proficient.

Certificate Clarification:

Older PA public school certificates which are also applicable for teaching Physics include the following:

- . Physics and Mathematics
- . Comprehensive Science
- . Physical Science

The PA certified Physics teacher may teach Physics, Physical Science, General Science and Environmental Science courses.

Special Considerations:

An educator certified in this field may provide school staff development services regarding their collegial studies/skills, may serve in the role of mentor or advisor, and may assist students in understanding the "reading" content area materials related to this subject area.

Restrictions:

The PA certified Physics teacher may not teach Biology or Chemistry or Earth and Space Science courses of study.

CSPG No. 56
July 1, 2004

References:

Program Specific Guidelines for Certification.

PA Public School Code: §1202
 §1212
 §1604

22 PA Code: Chapter 4: §4.22(c)(3)
 §4.23(c)

Chapter 49: §49.11
 §49.81
 §49.85

THIS REVISION SUPERSEDES ALL EARLIER CSPG'S CARRYING THIS NUMBER AND/OR ADDRESSING THIS SUBJECT. PREVIOUS PRINTING DATES ON THIS SUBJECT: 3/75, 8/76, 2/82, 1/87, 7/87, 12/90, 6/92.

**Certification Staffing Assignment
GENERAL SCIENCE**

General Science is the science addressing universal properties and involving the fundamental concepts of the life, physical and earth and space science.

Grade Level Scope of Certificate:

A person holding a valid PA certificate for general science is qualified to teach all General Science courses in grades 7 through 12.

Certification Assignment:

An educator holding a valid PA certificate for general science is qualified to teach content to include the areas of: life science, physical science, introduction to earth and space science and societal impact of these applications. A general science certificated educator can teach environmental science coursework

At the middle level, the General Science educator will also provide science instruction, adjusted to the students' abilities when below proficient.

Restrictions:

An educator holding a General Science certificate is not qualified to teach Advanced Earth and Space Science, unless also holding that certificate.

Special Considerations:

An educator certified in this field may provide school staff development services regarding their collegial studies/skills, may serve in the role of mentor or advisor, and may assist students in understanding the "reading" content area materials related to this subject area.

References:

Program Specific Guidelines for Certification.

Other CSPG's for Reference: Biology

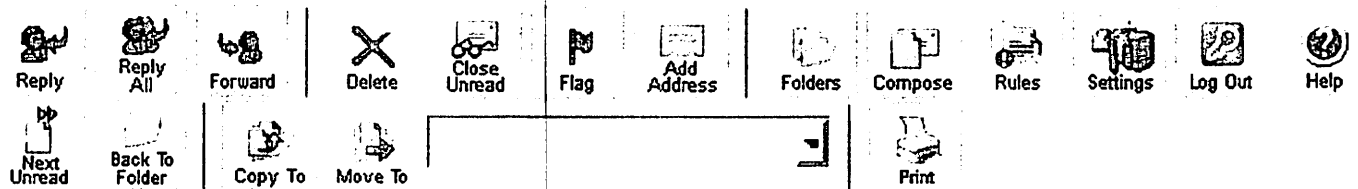
PA Public School Code: §1202
 §1212
 §1604

22 PA Code: Chapter 4: §4.22
 §4.23
 §4.31

Chapter 49: §49.11
 §49.81

CSPG No. 46
Page 2 of 2
July 1, 2004

THIS REVISION SUPERSEDES ALL EARLIER CSPG'S CARRYING THIS NUMBER AND/OR ADDRESSING THIS SUBJECT. PREVIOUS PRINTING DATES ON THIS SUBJECT: 1973, 3/75, 3/78, 2/82, 1/87

IUP I-Mail:  Message from InBox Folder

From: Ken Coles <kcoles@iup.edu>

Subject: General Science Education program

Date: Thu, 20 Sep 2007 09:19:31 -0400

To: Steve Hovan <hovan@iup.edu>, 'John Woolcock' <woolcock@iup.edu>, Carl S. Luciano <luciano@iup.edu>, talwar@iup.edu

Cc: Holly Travis <h.j.travis@iup.edu>, Mike W. Briggs <m.w.briggs@iup.edu>, Michael Poage <mpoage@iup.edu>, Stanley Sobolewski <sobolews@iup.edu>




Colleagues,

The Geoscience Department has prepared a written proposal to delete the General Science Education program. As you know, this major includes four tracks: Biology, Chemistry, Earth and Space Science, and Physics. Historically, it was taken by students so they could teach middle grades in addition to grades 9-12 in their subject area. The new Certification and Staffing Policy Guidelines (CSPGs, available at <http://www.pde.state.pa.us/teaching/cwp/view.asp?a=131&Q=105885>) issued by the Pennsylvania Dept. of Education in 2004 have rendered this program unnecessary for our students. The teaching certificates in Biology, Chemistry, Earth and Space Science, and Physics now cover grades 7-12 and permit the teaching of General Science. Furthermore, the latter certificates allow employment across all secondary grades, whereas in practice General Science limits employment to middle grades only. Students in science education have responded to these changes by majoring in the four subject areas in larger numbers, and only two students remain in GSCE, both of whom will be out of the program by next May.

The General Science program is too scant on subject courses for good preparation to be a science teacher. If, as we anticipate, you agree that this program is no longer necessary, a written memo to that effect, sent to Michael Poage, will help to limit our students' choices to sound options for a science teacher. If you have any questions, please contact me (7-5626, kcoles@iup.edu) or Prof. Michael Poage, Geoscience curriculum committee (7-5627, or mpoage@iup.edu).

Sincerely,
Ken Coles

=====
K. Coles
Geoscience Dept.
Indiana Univ. of Pennsylvania

From: "Mike W. Briggs" <m.w.briggs@iup.edu>
Subject: **Re: Details on GSCE deletion**
Date: September 21, 2007 2:44:33 PM EDT
To: "Ken Coles" <kcoles@iup.edu>
Cc: <woolcock@iup.edu>, "Wendy L. Elcesser" <endyw@iup.edu>
 1 Attachment, 29.5 KB

Ken,

Thank you for your counsel on this. I agree with your department that the GSCE program has outlived its usefulness. I'll take this to our curriculum committee next week and shepherd thru a letter of support.

Cheers,

Mike

----- Original Message ----- From: "Ken Coles" <kcoles@iup.edu>
To: "Holly Travis" <h.j.travis@iup.edu>; "Mike W. Briggs" <m.w.briggs@iup.edu>; "Stanley Sobolewski" <sobolews@iup.edu>; "Karen Rose Cercone" <kcercone@iup.edu>
Cc: "Michael Poage" <mpoage@iup.edu>
Sent: Friday, September 21, 2007 1:08 PM
Subject: Details on GSCE deletion

Hi gang,

Here is the written rationale for the deletion of the now-obsolete GSCE program. Your chairs may ask you about this since we have requested letters of support from them. I can of course address any questions you may have.

Ken

=====

K. Coles
Geoscience Dept.
Indiana Univ. of Pennsylvania
(724)-357-5626
Fall 2007 office hours: T and Th 9:30-11:30 A.M., Weds. 4:30-5:30 P.M.



[Gen Sci Deletion.doc \(29.5 KB\)](#)

Sharon Aikins

From: "Gail S. Sechrist" <gailsech@iup.edu>
To: "Todd Potts" <potts@iup.edu>; "Terrylynn Pearlman" <Pearlman@iup.edu>; "Sharon Aikins" <SAIKINS@iup.edu>; "Sally McCombie" <smccomb@iup.edu>; "Russell Peterson" <rpeterso@iup.edu>; "Muhammad Numan" <mznuman@iup.edu>; "Mary Sadler" <msadler@iup.edu>; "Mary Anne Hannibal" <hannibal@iup.edu>; "LeAnn Wilkie" <wilkie@iup.edu>; "Jianfeng Wang" <jwang@iup.edu>; "Jack Scandrett" <jscandt@iup.edu>; "Gary Stoudt" <gsstoudt@iup.edu>; "Carmy Carranza" <carmycgc@iup.edu>; "Cheryl Samuels" <CSAMUELS@iup.edu>
Sent: Wednesday, November 14, 2007 11:59 AM
Subject: Geoscience Deletion

Marcy Rearick says that they will remove the program from the catalog this summer. She checked her records and tells me that they have not been accepting students since 2002. She agreed that it should be sent to Senate for information. She noted that this also needs to be reported to the State System.

Gail