

**COVER SHEET FOR PROGRAM REVIEW  
(Rules 2002)**

***DOCUMENT #2***

**INSTITUTION: Indiana University Kokomo**

**PROGRAM: Earth/Space Science**

**DATE SUBMITTED: October 17, 2007**

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**To be filled in by DPS Staff**

**Document #1**

\_\_\_\_\_ **A. Unit Summary**

\_\_\_\_\_ **B. Teacher Education Courses**

\_\_\_\_\_ **C. Program Field Experiences**

**Document #2**

\_\_\_\_\_ **A. Curriculum**

\_\_\_\_\_ **B. Standards Matrix**

\_\_\_\_\_ **C. Assessment Data**

\_\_\_\_\_ **D. Faculty**



# INDIANA UNIVERSITY KOKOMO

## DIVISION OF EDUCATION

Indiana University Kokomo Division of Education has three baccalaureate degree programs that prepare candidates for initial licensure in Early Childhood, Middle Childhood, Early Adolescence and Adolescence Young Adult. The following table describes the degrees, licenses, and programs.

Indiana University Kokomo Division of Education Rules 2002 Approved Programs		
Bachelor of Science Degree	DPS Program	IDOE/Title II License
Early Childhood	Generalist: Early Childhood*	Preschool Generalist
		Elementary/Primary Generalist
Elementary	Generalist: Early and Middle Childhood	Elementary/Primary Generalist
		Elementary/ Intermediate Generalist
Secondary	Generalist: Early Adolescence Language Arts*	Early Adolescence Generalist: Language Arts
	Generalist: Early Adolescence Mathematics*	Early Adolescence Generalist: Mathematics
	Generalist: Early Adolescence Science*	Early Adolescence Generalist: Science
	Generalist: Early Adolescence Social Studies*	Early Adolescence Generalist: Social Studies
	Fine Arts: Visual Arts*	Fine Arts: Visual Arts Rules 2002
	Language Arts	English/Language Arts Rules 2002
	Mathematics	Mathematics
	Social Studies Economics**	Social Studies: Economics Rules 2002
	Social Studies Government and Citizenship**	Social Studies: Government and Citizenship Rules 2002
	Social Studies Historical Perspectives**	Social Studies: Historical Perspectives Rules 2002
	Social Studies Psychology**	Social Studies: Psychology Rules 2002
	Social Studies Sociology**	Social Studies: Sociology Rules 2002
	Chemistry	Chemistry Rules 2002
	Life Science	Life Science Rules 2002
	Earth/Space Science	Earth Space Science Rules 2002
Physics	Physics Rules 2002	
Physical Science***	Physical Science Rules 2002	

\*denotes programs not being reviewed 2007 in accordance with Indiana Program Review Protocol

\*\*Social Studies is being reviewed as one program and is not separated into licensure areas.

\*\*\*Physical Science is subsumed into the Chemistry and Physics review.

Note: Programs not being reviewed 2007 have recently been approved by DPS and the State Superintendent ([click here to view Dr. Reed letter](#))

The documents that follow will outline the Earth/Space Science program that is housed in the Division of Education's Bachelor of Science in Secondary Education degree program.

# DOCUMENT #2 – CONTENT PROGRAM SPECIFICS

[Content Curriculum](#) - [Content Standards Matrix](#) - [Assessment Data](#) - [Faculty](#)

(Click on links above to access bookmarked sections within Document #2)

## A. CONTENT CURRICULUM SECTION

Teacher candidates in the Earth/Space Science Education initial program have a minimum of 38 credit hours in General Education which include courses in: Fundamental Skills (15 cr.); Natural Sciences (8 cr.); Social and Behavioral Science (9 cr.); Humanities (6 cr.), parentheses denote minimum credit requirements. Teacher candidates are also required to have 51 credits in the Science Teaching Major, in which candidates choose either one licensure area and complete at least 36 credit hours or two licensure areas and complete at least 24 credit hours in each. Teaching Major requirements involve a prescribed course regiment that is aligned with DPS Content Standards.



### BACHELOR of SCIENCE in SECONDARY EDUCATION

The Professional Educator Model Program Guide  
 Early Adolescence and Adolescence Young Adult  
 Licensure: 5-12

#### Science Teaching Major

Last Name \_\_\_\_\_

First Name \_\_\_\_\_

IU ID # \_\_\_\_\_

IUK Email \_\_\_\_\_

#### GENERAL EDUCATION REQUIREMENTS

(Must have a minimum total of 38 credit hours and  
 all Fundamental Skills courses must have a grade of at least C)

FUNDAMENTAL SKILLS (Minimum of 15 credit hours required)	Course Taken	Credit Hours	Grade
ENG W131 Elementary Composition (3)			
ENG W132 Elementary Composition II (3)			
SPCH S121 Public Speaking (3)			
DPIS D250 Multimedia (3)			
<i>One of the following:</i>			
MATH M125 Pre-Calculus Mathematics (3)			
MATH M118 Finite Mathematics (3)			

MATH M119 Survey of Calculus (3)			
MATH M215 Calculus I (3)			
<b>Total</b>			

<b>NATURAL SCIENCES</b> <b>(Minimum of 8 credit hours required. Select from at least two of the following groups, one laboratory experience must be included)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
<i>Life Science</i> BIOL L100 Man and the Biological World (5) BIOL L105 Introduction to Biology (5) BIOL L270 Humans & Microorganisms (3) ANAT A215 Basic Human Anatomy (5) PHSL P215 Basic Human Physiology (5) PLSC B203 Survey of the Plant Kingdom (5) PLSC B364 Summer Flowering Plants (5)			
<i>Physical Science</i> PHYS P100 Physics in the Modern World (5) PHYS P201 General Physics I (5) CHEM C100 The World of Chemistry (3) and CHEM C120 Lab (2) CHEM C101 Elementary Chemistry I (3) and CHEM C121 Lab (2) CHEM C105 Principles of Chemistry (3) and CHEM C125 Lab (2) CHEM C390 Environmental Science (3)			
<i>Earth/Space Science</i> AST A100 The Solar System (3) GEOL G107 Physical Systems of the Environment (3) COAS E105 Topics in Natural and Math Sciences (3)			
<b>Total</b>			

<b>SOCIAL AND BEHAVIORAL SCIENCES</b> <b>(Minimum of 9 credit hours required. Select from at least two of the following groups)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
<i>History</i> HIST H105 American History I (3) HIST H106 American History II (3) HIST H113 History of Western Civ. I (3) HIST H114 History of Western Civ. II (3) ANTH A103 Human Origins & Prehistory (3) ANTH A104 Culture and Society (3)			
<i>Sociology and Psychology</i> SOC S100 Introduction to Sociology (3) SOC S101 Social Problems and Politics (3) PSY P103 General Psychology (3)			
<i>Political Science and Economics</i> SPEA J101 The Am. Criminal Justice Sys. (3) POLS Y103 Intro. to American Politics (3) POLS Y217 Intro. to Comparative Policies (3) POLS Y219 Introduction to World Politics (3) ECON E175 Survey of Econ. for Teachers (3) ECON E201 Intro. to Micro Economics (3) ECON E202 Intro. to Macro Economics (3)			
COAS E104 Topics in Social and Behavioral Sciences			

(3)			
	<b>Total</b>		

<b>HUMANITIES</b> <b>(Minimum of 6 credit hours required. Select from at least two of the following groups)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
<i>Literature</i> ENG L101 Western World Masterpieces I (3) ENG L102 Western World Masterpieces II (3) ENG W203 Creative Writing (3) FOLK F101 Introduction to Folklore (3) AFRO A150 Sur. of Culture of Black Am. (3) CLAS C205 Classical Mythology (3) CMLT C190 An Introduction to Film (3)			
<i>Fine Arts</i> FINA A101 Ancient & Medieval Art (3) FINA A102 Renaissance Thru Modern Art (3) FINA A108 Art of the Western World (3) MUS M174 Appreciation to Music (3) THTR C130 Introduction to Theater (3) THTR T120 Acting I (3) SPCH C205 Intro. to Oral Interpretation (3) HUMA U103 Introduction to Creative Arts (3)			
<i>Philosophy</i> PHIL P100 Introduction to Philosophy (3) PHIL P140 Elementary Ethics (3) PHIL P145 Introduction to Social and Political Philosophy (3) PHIL P150 Elementary Logic (3) PHIL P242 Applied Ethics (3) REL R152 Intro. to Religions of the West (3) REL R233 Introduction to the Hebrew Bible – Old Testament (3) REL R243 Intro. to the New Testament (3)			
<i>Communications</i> JOUR C200 Intro. to Mass Com. (3) SPCH S122 Interpersonal Communications (3) SPCH S205 Intro. to Speech Com. (3) SPCH S223 Business and Prof. Speaking (3) SPCH S229 Discuss. and Group Methods (3) SPCH S233 Intro. to Public Relations (3) JOUR J200 Writing for Mass Media (3)			
COAS E103 Topics in Arts and Humanities (3)			
	<b>Total</b>		

## TEACHING MAJOR REQUIREMENTS

Teaching major requirements are fulfilled by completing a total of 51 credit hours in Science. (Minimum GPA of 2.5 in teaching major and no grade less than C in the teaching major is required.) The IU Kokomo Teacher Education Program requires you to either choose one licensure area and complete at least 36 credit hours or two licensure areas and complete at least 24 credit hours in each (Exception: Physical Science has a 36 hour minimum requirement). The Indiana Division of Professional Standards requires you to complete one course in each of the General Science areas and meet all principles for your chosen licensure areas. (Courses taken to meet the General Science requirements may also be used to meet licensure area requirements, but cannot be counted twice towards the total 51 credits.)

Licensure Areas:

**Chemistry**  
**Physics**

**Physical Science**  
**Earth/Space Science**

**Life Science**

General Science Area	Recommended IU Kokomo Courses	Course
Physical Science Physics or Chemistry	See Recommended and Possible IU Kokomo courses for each licensure area.	
Life Science		
Earth/Space Science		

**Chemistry:** Courses completed need to meet all the following principles. Once those principles are met, you may select any other of the listed possible courses in the licensure area to attain the minimum hour requirement for the teaching major. At least two lab courses need to be included

Principles	Recommended IU Kokomo Courses	Course Taken	Hours	Grade
Matter and Energy	C105/C125			
Energy and Change	C106/C126			
Organic Chemicals	C341/C343; C342/C344			
Analytical Chemistry	C210/C211			
		<b>Additional Courses</b>	<b>Hours</b>	<b>Grade</b>
		<b>Total</b>		

\*Other possible IU Kokomo courses: Biological Chemistry C483; Inorganic Chemistry C430; Physical Chemistry C361, C362, C363; Principles of Chemical Instrumentation C410, C411

**Physics:** Courses completed need to meet all the following principles. Once those principles are met, you may select any other of the listed possible courses in the licensure area to attain the minimum hour requirement for the teaching major. At least two lab courses need to be included

Principles	Recommended IU Kokomo Courses	Course Taken	Hours	Grade
Mechanics	P201			
Electricity and Magnetism	P202			
Atomic and Subatomic Physics	P301			
Environmental Physics	P310			
		Additional Courses	Hours	Grade
		<b>Total</b>		

**Life Science:** Courses completed need to meet all the following principles. Once those principles are met, you may select any other of the listed possible courses in the licensure area to attain the minimum hour requirement for the teaching major. At least two lab courses need to be included

Principles	Recommended IU Kokomo Courses	Course Taken	Hours	Grade
Molecules and Cells	L105; L367; M310			
Developmental and Organismal	Z315; P416			
Genetics and Evolution	L364			
Ecology	L473			
		Additional Courses	Hours	Grade
		<b>Total</b>		

\*Other possible IU Kokomo courses: Basic Human Anatomy A215; Humans and Microorganisms L270; Principles of Immunology L321/K339; Plants, Animals, and Civilization L370; Survey of the Plant Kingdom B203; Summer Flowering Plants B364; Microbiology and Immunology J200/J201; Microbiology M310/M315;

**Physical Science:** Courses completed need to meet all the following principles. Once those principles are met, you may select any other of the listed possible courses in the licensure area to attain the minimum hour requirement for the teaching major. At least two lab courses need to be included

Principles	Recommended IU Kokomo Courses	Course Taken	Hours	Grade												
Matter and Energy	C105/C125															
Energy and Change	C106/C125															
Organic Chemicals	C341/C343; C342/C344															
Analytical Chemistry	C210/C211															
Motion and Forces	P201															
Electricity and Magnetism	P202															
Atomic and Subatomic Physics	P301															
Environmental Physics	P310															
<table border="1"> <thead> <tr> <th>Additional Courses</th> <th>Hours</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Total</b></td> <td></td> <td></td> </tr> </tbody> </table>					Additional Courses	Hours	Grade							<b>Total</b>		
Additional Courses	Hours	Grade														
<b>Total</b>																

\*Other possible IU Kokomo courses see Chemistry or Physics Requirements

**Earth/Space Science:** Courses completed need to meet all the following principles. Once those principles are met, you may select any other of the listed possible courses in the licensure area to attain the minimum hour requirement for the teaching major. At least two lab courses need to be included

Principles	Recommended IU Kokomo Courses	Course Taken	Hours	Grade																		
Universe	A100																					
Earth and Natural Resources	G107; G315; C390																					
Environmental Systems and Hazards	G107; C390																					
Matter and Energy	C105/C125; C106/C126																					
Populations	L473																					
<table border="1"> <thead> <tr> <th>Additional Courses</th> <th>Hours</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Total</b></td> <td></td> <td></td> </tr> </tbody> </table>					Additional Courses	Hours	Grade													<b>Total</b>		
Additional Courses	Hours	Grade																				
<b>Total</b>																						

\*Other possible IU Kokomo courses: Environmental Physics P310; Biological Chemistry C483; Plants, Animals, and Civilization L370; Survey of the Plant Kingdom P203; Summer Flowering Plants B364



**PROFESSIONAL EDUCATION REQUIREMENTS**  
(All courses must have minimum grade of C+)

<b>Core I: Pre-professional (12 credit hours)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
EDUC M101 Introduction to Education			
EDUC P253 Educational Psychology for Secondary Teachers			
EDUC K205 Introduction to Exceptional Children			
DPIS D250 Multimedia			
	<b>Total</b>		

**REQUIREMENTS for ADMISSION to TEACHER EDUCATION PROGRAM**  
(on transcript EDUC-M299)

Submit application for admission to the Teacher Education Program and permission to take courses in Cores II, III, and IV.

**Admission to TEP Requirements:**

<b>Passage of PRAXIS I (PPST) (on transcript EDUC-M199)</b>	<b>Minimum Score</b>	<b>Score</b>	<b>Date</b>
Reading	176		
Writing	172		
Mathematics	175		

**Minimum Overall GPA of 2.5**

**Minimum GPA in Teaching Major courses of 2.5 as well as no grade less than a C**

**Completion of at least 55 credit hours of General Education and/or Teaching Major credit hours**

**Completion of W131, W132, S121, M118/M125 with a grade of C or better**

**Completion of Core I with a grade of C+ or better**

**Faculty Approval for Continuation**

<b>Cores II, III, and IV (18 credit hours)</b>			
<b>Core II (FALL semester)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
EDUC M312 General Methods Jr/High Middle			
EDUC S487 Principles of Senior High/Junior High/Middle School Education			
<b>Core III (SPRING semester)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
EDUC M446 Methods of Teaching SH/JH/MD Science			
SOC S100 Introduction to Sociology or approved multicultural course			
<b>Core IV (FALL semester)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
EDUC M464 Methods of Teaching Reading			
EDUC H340 Education and American Culture			
	<b>Total</b>		

**Admission to Core V Requirements**

<b>Passage of PRAXIS II Teaching Major Areas</b>	<b>Score</b>	<b>Date</b>

<b>Core V (SPRING semester) (15 credit hours)</b>	<b>Course Taken</b>	<b>Credit Hours</b>	<b>Grade</b>
	EDUC M480 Student Teaching Secondary		
	EDUC M440 Teaching Problems and Issues Seminar		
	<b>Total</b>		

NOTE: At the completion of each CORE, faculty review and approval are required as conditions for program continuation

## Earth/Space Science Course Descriptions

### *Universe*

AST-A 100 The Solar System (3 cr.)

Celestial sphere and constellations, measurement of time, astronomical instruments, earth as a planet, the moon, eclipses, planets and their satellites, comets, meteors, theories of origin of solar system.

### *Earth and Natural Resources*

GEOG-G 107 Physical Systems of the Environment (3 cr.)

Physical environment as the home of humans, emphasizing the distribution and interaction of environmental variables (landforms, vegetation, soils, and climate). Note: Business majors may count GEOG G107 only as a social science.

GEOG-G 315 Environmental Conservation (3 cr.)

R: 3 credit hours of geography or junior standing. Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality.

### *Environmental Systems and Hazards*

CHEM-C 390 Environmental Science (3 cr.)

Exploration of the complex interrelationships among the physical, chemical, biological, cultural, economic, and political forces that shape the global environment. Note: CHEM-C 390 will not count toward a Bloomington or Kokomo chemistry degree.

### *Matter and Energy*

CHEM-C 105 Principles of Chemistry I (3 cr.)

P: two years of high school algebra or MATH-M 125, which may be taken concurrently; one year of high school chemistry. C: CHEM-C 125. Basic principles, including stoichiometry, thermochemistry, atomic and molecular structure, gases, solutions, and selected topics in descriptive chemistry. Credit given for only one of the following, CHEM-C 100, 101, or 105-125.

CHEM-C 125 Experimental Chemistry I (2 cr.)

C: CHEM-C 105. Introduction to laboratory experimentation, with particular emphasis on the collection and use of experimental data, some properties of solutions, stoichiometry, thermochemistry, and synthesis. Credit given for only one of the following: CHEM-C 121, or 125.

CHEM-C 106 Principles of Chemistry II (3 cr.)

P: CHEM-C 125. C: CHEM-C 126 Chemical equilibrium with emphasis on acids, bases, solubility and electrochemistry, elementary thermodynamics, chemical kinetics, and selected topics in descriptive chemistry. Credit not given for both C102, and C106-C126.

CHEM-C 126 Experimental Chemistry II (2 cr.)

P: CHEM-C 125. C: CHEM-C 106. A continuation of CHEM-C 125 with emphasis on equilibria; qualitative analysis; acids and bases; oxidation-reduction reactions including electrochemistry, chemical kinetics, and synthesis. Credit given for only one of the following: CHEM-C 126, or 122.

### *Populations*

BIOL-L 473 Ecology (3 cr.)

P: 8 hours of biology. R: BIOL-L 364. Major concepts of ecology for science majors; relation of individual organisms to their environment, population ecology, and structure and function of ecosystems.

### *Other*

PHYS-P 310 Environmental Physics (3 cr.)

P: PHYS-P 201 or consent of instructor. Relationship of physics to current environmental problems. Energy production, comparison of sources and by-products; nature of and possible solutions to problems of noise; particulate matter in atmosphere.

CHEM-C 483 Biological Chemistry Lecture (3 cr.)

P: 18 credit hours of chemistry, including CHEM-C 341. Introduction to structure, chemical properties, and interrelationships of biological substances.

BIOL-L 370 Plants, Animals, and Civilization (3 cr.)

R: junior or senior standing. The principal domesticated plants and animals from prehistoric times to the present, with consideration of their origin, spread, and relationship to development of civilization and to present problems of hunger. Not open to students who have had PLSC-B 368. Note: BIOL-L 370 will not count toward a Bloomington or Kokomo biological science degree.

PLSC-B 203 Survey of the Plant Kingdom (5 cr.)

Survey of various groups of plants, including their structure, behavior, life histories, classification, and economic importance.

PLSC-B 364 Summer Flowering Plants (5 cr.)

P: one introductory biology course. A course for students desiring a broad, practical knowledge of common wild and cultivated plants.

[Home](#)

## **B. CONTENT STANDARDS MATRIX SECTION**

Teacher candidates in the Earth/Space Science initial program have prescribed content course requirements in Earth/Space Science. At Indiana University Kokomo, all content courses are offered through the School of Arts and Sciences. The School of Arts and Sciences and the Division of Education have a partnership through a committee titled the Joint Committee on Indiana Professional Standards, formed August 25, 2004. Joint Committee members, which include administration and faculty from Education and Arts and Sciences, were charged with the alignment of all content courses with DPS Content Standards. This process which took place during the 2004-05 academic year resulted in the updating of the secondary education program planning guides in the Division of Education. The Joint Committee conducts reviews of the course to standard alignment on a three year cycle.

In the following matrices, evidence of standards alignment is reported through assessment outcomes, which have been identified using thirteen categories of assessments:

<b>Category Designation</b>	<b>Assessment Outcome</b>
<b>A</b>	<b>Papers</b>
<b>B</b>	<b>Exams/Quizzes</b>
<b>C</b>	<b>Simulations</b>
<b>D</b>	<b>Portfolios</b>
<b>E</b>	<b>Research/Inquiry</b>
<b>F</b>	<b>Presentations</b>
<b>G</b>	<b>Critical Readings/Discussions</b>
<b>H</b>	<b>Service Learning</b>
<b>I</b>	<b>Case Study/Vignette Analysis</b>
<b>J</b>	<b>Field Performance</b>
<b>K</b>	<b>Curriculum/Lesson Plans</b>
<b>L</b>	<b>Assessment/Rubrics</b>
<b>M</b>	<b>Other (specify)</b>

## IU Kokomo Division of Education

### Science: Earth/Space Content Standards Alignment Matrix

**Standard #1:** The teacher of science understands the central concepts, tools of inquiry, and the history and nature of science in order to create learning experiences that make these aspects of science meaningful for the student.

Science: Earth/Space Content Standards Indicators	M446	A100	G107	G315	C390	C105	C125	C106	C126	L473
<b>Central Concepts:</b>										
1. The teacher of science possesses a knowledge and understanding of science appropriate to the developmental level and subject area needs of students.	J, K	B	B							
2. The teacher of science understands the unifying concepts and processes of science.	J, K	B	B			A,B		A,B		
3. The teacher of science understands the fundamental concepts and major principles of Physical, Life, and Earth and Space science and the interconnections between these disciplines.	J, K	B	B			A,B				
4. The teacher of science understands the abilities of technological design and the relationship between science and technology.	J, K	B				A,B				
5. The teacher of science understands the interrelationship of personal and social perspectives in science.	J, K	B	M (Journal)		A,B,G I					
6. The teacher of science understands the habits of mind particular to science.	J, K					A,B		A,B		
7. The teacher of science knows which science concepts and processes are appropriate at the developmental level at which they teach.	J, K									
<b>Tools of Inquiry:</b>										
8. The teacher of science understands how to identify questions and concepts that guide scientific investigations.	J, K	B					A		A	
9. The teacher of science understands how to design and conduct scientific investigations.	J, K						A		A	
10. The teacher of science understands how to use technology and mathematics to improve investigations and communications.	J, K					A,B	A	A,B	A	
11. The teacher of science knows how to interpret the results of an investigation and make sense of findings using logic and evidence.	J, K					A,B	A		A	

## IU Kokomo Division of Education

### Science: Earth/Space Content Standards Alignment Matrix

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Science: Earth/Space Content Standards Indicators	M446	A100	G107	G315	C390	C105	C125	C106	C126	L473
12. The teacher of science understands how to recognize and analyze alternative explanations and models.	J, K			B		A,B		A,B		B
13. The teacher of science understands how to communicate and defend a scientific argument.	J, K						A		A	
14. The teacher of science knows when, where, and how to access needed information.	J, K					A,B		A,B		
<b>History of Science:</b>										
15. The teacher of science knows that the history of science can help students build an understanding of the scientific enterprise.										B
16. The teacher of science recognizes that some episodes in the history of science have led to major changes in our view of the world.		B	B	B		A,B		A,B		B
17. The teacher of science knows that science often changes by small modifications in existing knowledge, but that new scientific ideas that lead to major changes in scientific thinking can be slow to be accepted.		B	B			A,B		A,B		B
18. The teacher of science knows that science has been practiced by different individuals in different cultures throughout history.		B	B		A,B,G I					
19. The teacher of science knows that individual scientists and teams of scientists have made significant contributions to our current understanding of scientific principles.		B	B			A,B		A,B		
<b>Nature of Science:</b>										
20. The teacher of science understands that science is a human endeavor, involving both genders and all social, cultural, and ethnic groups, in teams and alone, that relies on human qualities such as reasoning, insight, energy, skill, and creativity as well as scientific habits of mind such as intellectual honesty, skepticism, and openness to new ideas.	G, J, K	B		B	A,B,G I					B

## IU Kokomo Division of Education

### Science: Earth/Space Content Standards Alignment Matrix

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Science: Earth/Space Content Standards Indicators	M446	A100	G107	G315	C390	C105	C125	C106	C126	L473
21. The teacher of science understands that scientists are influenced by societal, cultural, and personal beliefs.	G				A,B,G I					
22. The teacher of science understands that the scientific community plays an important role, through public reporting and peer review, in deciding what counts as significant questions and reasonable evidence.	G		B	B	A,B,G I					
23. The teacher of science knows that science is a way of knowing that involves devising the best possible explanations for phenomena in the natural world.	G	B	B			A,B	A	A,B	A	B
24. The teacher of science knows that scientific explanations are formulated and tested using observations, experiments, and/or theoretical models.	G	B	B		A,B,G I	A,B	A	A,B	A	B
25. The teacher of science understands that scientists often differ with one another about the interpretation of the evidence or theory being considered, yet also understands that although scientists may disagree about explanations or evidence, they agree that critical evaluation of the results of scientific investigations, models, and explanations is an essential part of science.	G		B	B	A,B,G I	A,B		A,B		B
26. The teacher of science knows that scientific explanations must be consistent with evidence, make accurate predictions, be logical, be open to criticism, and be public.	G		B	B	A,B,G I		A		A	
27. The teacher of science knows that scientific knowledge is tentative and subject to change as new evidence or new ways of thinking become available.	G		B	B		A,B		A,B		B



**IU Kokomo Division of Education**

**Science: Earth/Space Content Standards Alignment Matrix**

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Science: Earth/Space Content Standards Indicators	M446	A100	G107	G315	C390	C105	C125	C106	C126	L473
<b>ENERGY IN THE EARTH SYSTEM</b>										
28. Earth systems have internal and external sources of energy, both of which create heat. The sun is the major external source of energy. Two primary sources of internal energy are the decay of radioactive isotopes and the gravitational energy from the earth's original formation.			B	B				A,B		B
29. The outward transfer of earth's internal heat drives convection circulation in the mantle that propels the plates comprising earth's surface across the face of the globe.			B	B						B
30. Heating of earth's surface and atmosphere by the sun drives convection within the atmosphere and oceans, producing winds and ocean currents.			B	B						B
31. Global climate is determined by energy transfer from the sun at and near the earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and the earth's rotation, and static conditions such as the position of mountain ranges and oceans.			B	B						B

## IU Kokomo Division of Education

### Science: Earth/Space Content Standards Alignment Matrix

**Standard #1:** The teacher of science understands the central concepts, tools of inquiry, and the history and nature of science in order to create learning experiences that make these aspects of science meaningful for the student.

Science: Earth/Space Content Standards Indicators	M446	A100	G107	G315	C390	C105	C125	C106	C126	L473
<b>GEOCHEMICAL CYCLES</b>										
32. The earth is a system containing essentially a fixed amount of each stable chemical atom or element. Each element can exist in several different chemical reservoirs. Each element on earth moves among reservoirs in the solid earth, oceans, atmosphere, and organisms as part of geochemical cycles.			B	B	A,B, G,I	A,B		A,B		B
33. Movement of matter between reservoirs is driven by the earth's internal and external sources of energy. These movements are often accompanied by a change in the physical and chemical properties of the matter. Carbon, for example, occurs in carbonate rocks such as limestone, in the atmosphere as carbon dioxide gas, in water as dissolved carbon dioxide, and in all organisms as complex molecules that control the chemistry of life.			B	B						B
<b>THE ORIGIN AND EVOLUTION OF THE EARTH SYSTEM</b>										
34. The sun, the earth, and the rest of the solar system formed from a nebular cloud of dust and gas 4.6 billion years ago. The early earth was very different from the planet we live on today.		B	B	B						B
35. Geologic time can be estimated by observing rock sequences and using fossils to correlate the sequences at various locations. Current methods include using the known decay rates of radioactive isotopes present in rocks to measure the time since the rock was formed.		B	B	B						B

## IU Kokomo Division of Education

### Science: Earth/Space Content Standards Alignment Matrix

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Science: Earth/Space Content Standards Indicators	M446	A100	G107	G315	C390	C105	C125	C106	C126	L473
36. Interactions among the solid earth, the oceans, the atmosphere, and organisms have resulted in the ongoing evolution of the earth system. We can observe some changes such as earthquakes and volcanic eruptions on a human time scale, but many processes such as mountain building and plate movements take place over hundreds of millions of years.			B	B						B
37. Evidence for one-celled forms of life--the bacteria-- extends back more than 3.5 billion years. The evolution of life caused dramatic changes in the composition of the earth's atmosphere, which did not originally contain oxygen.			B							
<b>THE ORIGIN AND EVOLUTION OF THE UNIVERSE</b>										
38. The origin of the universe remains one of the greatest questions in science. The "big bang" theory places the origin between 10 and 20 billion years ago, when the universe began in a hot dense state; according to this theory, the universe has been expanding ever since.		B	B	B						B
39. Early in the history of the universe, matter, primarily the light atoms hydrogen and helium, clumped together by gravitational attraction to form countless trillions of stars. Billions of galaxies, each of which is a gravitationally bound cluster of billions of stars, now form most of the visible mass in the universe.			B							

## IU Kokomo Division of Education

### Science: Earth/Space Content Standards Alignment Matrix

**Standard #1:** The teacher of science understands the central concepts, tools of inquiry, and the history and nature of science in order to create learning experiences that make these aspects of science meaningful for the student.

Science: Earth/Space Content Standards Indicators	M446	A100	G107	G315	C390	C105	C125	C106	C126	L473
40. Stars produce energy from nuclear reactions, primarily the fusion of hydrogen to form helium. These and other processes in stars have led to the formation of all the other elements.		B	B	B						B

**IU Kokomo Division of Education**  
**Science: Earth/Space Content Standards Alignment Matrix**

Science: Earth/Space Science Content Standards #2 - 10	M446
#2: The teacher of science understands how students learn science and provides science learning opportunities that support their intellectual, social, and personal development.	G, J, K
#3: The teacher of science understands how students differ in their approaches to learning science and creates instructional opportunities that are adapted to diverse learners.	G, J, K
#4: The teacher of science understands and uses a variety of instructional strategies to encourage students' development of conceptual understanding, inquiry skills, and scientific habits of mind.	G, J, K
#5: The teacher of science uses an understanding of individual and group motivation and behavior to create science learning environments that encourage positive social interaction and active engagement in learning.	G, J, K
#6: The teacher of science understands and uses a variety of communication techniques to foster equity, inquiry, collaboration, and supportive interaction in the classroom.	G, J, K
#7: The teacher of science plans meaningful science instruction based upon knowledge of science, students, the community, science curricula, and curriculum goals.	J, K
#8: The teacher of science understands and uses a variety of authentic and equitable assessment strategies to evaluate and ensure the continuous intellectual, social, and personal development of the learner.	G, J, K, L
#9: The teacher of science is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others, and who actively pursues opportunities to grow professionally.	A, J
#10: In order to support student learning and well-being, the teacher of science fosters relationships with students and their families, colleagues, and concerned others.	J

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## C. ASSESSMENT DATA SECTION

Teachers candidates in the Earth/Space Science initial program are assessed continually through course assignments, field experiences, program performance assessments (e.g. e-Portfolio), and program surveys. Each teacher candidate will be assessed by a variety of stakeholders – i.e., faculty, host teachers, student teaching supervisors, principals, and portfolio reviewers – as well as engage in reflective self-assessment. Assessment data are used to evaluate individual candidate performance at each benchmark and provide guidance for successful program completion. Assessment data are also aggregated to provide insight and guide/inform course improvement, program improvement, and unit policy and procedures.

### Secondary (5 – 12) Program

Purpose of Evaluation	Frequency of Evaluation	Evaluator
Field Experience Assessment (Dispositions)	8 x within program	Host teachers
Completion of academic coursework aligned with standards (GPA)	10x within program	Faculty
Field Experience Assessment (Metastandards and Dispositions)	6 x within program	Host Teachers
Formative and Summative Portfolio Review (Metastandards Rubrics)	2 x within program	Faculty Host Teachers
Clinical Practice (Metastandards and Dispositions)	2 x within program (Student teaching: midterm and final)	Host Teachers and University Supervisors

The B.S. in Secondary Education degree program was implemented in the Fall Semester 2007. All data reflected in the following assessment chart were collected within the Division's Secondary Certification program. Teacher candidates within the Secondary Certification program were post-baccalaureate students and/or students simultaneously enrolled in a B.A. program within the respective discipline within the School of Arts and Science.

## Earth/Space Science Assessment Data

Element Assessed	Describe the Assessment Activity	When is it assessed?	Title of the Instrument or Rubric (Each item is hyperlinked to complete document)	Aggregated Data Summary Program Completers 2006 - 2007 = 0 2005 - 2006 = 0 Total [05-07] = 0	Curriculum/Program/Unit operations modifications made based on this data	Content Standards addressed by this Assessment Activity
Content Knowledge for Teacher Candidates	<i>Praxis II</i>	<i>Prior to Student Teaching</i>	<a href="#">Praxis II</a>	2006 - 2007 = N/A 2005 - 2006 = N/A Total [05-07] = N/A	Joint Committee will further align course offerings and capstone content exams with Praxis II content areas.	N/A  As per DPS Instructions
	<i>Capstone Content Knowledge Exam</i>	<i>Prior to Graduation</i>	<a href="#">General Science: Content Knowledge (see exam overview)</a>	2006 - 2007 = N/A 2005 - 2006 = N/A Total [05-07] = N/A	Development and approval of new B.S. in Secondary Education degree program.	<b>Standard 1</b> ( <a href="#">see specific category alignment</a> )
	<i>Utilization of Content Knowledge as performance assessment</i>	<i>During Field and Clinical Practice (Benchmark 3-6)</i>	<a href="#">Metastandards Rubric</a>	2006 - 2007 = 3.4 2005 - 2006 = N/A Total [05-07] = 3.4 ( <a href="#">see complete data summary</a> )	Development and inclusion of Components for the Metastandards.	<u>Benchmark Standard</u> 3 1-5 4 1-8 5 1-8 6 1-10
	<i>Self-evaluation of preparedness for utilization of content knowledge</i>	<i>At program completion (Benchmark 6)</i>	<a href="#">Program Completers Survey</a>	2006 - 2007 = 4.0 2005 - 2006 = N/A Total [05-07] = 4.0 ( <a href="#">see complete data summary</a> )	Utilization of the Joint Committee will be expanded to enhance the breadth and depth of evaluation of teacher candidate content knowledge	Standards 2, 3, 6, 7, 9
	<i>Stakeholder evaluation of preparedness for utilization of content knowledge</i>	<i>At program completion (Benchmark 6) and for alumni</i>	<a href="#">Administrators Survey</a>	2006 - 2007 = 3.5 2005 - 2006 = N/A Total [05-07] = 3.5 ( <a href="#">see complete data summary</a> )	Creation of Assistant Dean for Program Review position in the Division to enhance the assessment efforts and evaluation of teacher candidate content knowledge	Standards 2, 3, 6, 7, 9

<b>Pedagogical Content Knowledge for Teacher Candidates</b>	<i>Portfolio Assessment and Performance Assessment</i>	<b>Portfolio: At Formative and Summative Review (Benchmark 4 and Benchmark 6)</b> <b>Performance Assessment: During Field and Clinical Practice (Benchmark 3-6)</b>	<a href="#">Metastandards Rubric: Portfolio Review</a>	<b>2006 - 2007 = 3.3</b> <b>2005 - 2006 = N/A</b> <b>Total [05-07] = 3.3</b> <a href="#">(see complete data summary)</a>	<i>Re-evaluation of the Metastandard components to more specifically address content</i>	<u>Benchmark</u> <u>Standard</u> 3 1-5 4 1-8 5 1-8 6 1-10
			<a href="#">Metastandards Rubric: Field Performance</a>	<b>2006 - 2007 = 3.4</b> <b>2005 - 2006 = N/A</b> <b>Total [05-07] = 3.4</b> <a href="#">(see complete data summary)</a>		
<b>Professional and Pedagogical Knowledge and Skills for Teacher Candidates</b>	<i>Portfolio Assessment and Performance Assessment</i>	<b>Portfolio: At Formative and Summative Review (Benchmark 4 and Benchmark 6)</b> <b>Performance Assessment: During Field and Clinical Practice (Benchmark 3-6)</b>	<a href="#">Metastandards Rubric: Portfolio Review</a>	<b>2006 - 2007 = 3.1</b> <b>2005 - 2006 = N/A</b> <b>Total [05-07] = 3.1</b> <a href="#">(see complete data summary)</a>	<i>Moved to online reviews of portfolios, field experiences, and clinical practice. Formalized and enhanced the use and role of stakeholders within the UAS.</i>	<u>Benchmark</u> <u>Standard</u> 3 1-5 4 1-8 5 1-8 6 1-10
			<a href="#">Metastandards Rubric: Field Performance</a>	<b>2006 - 2007 = 3.4</b> <b>2005 - 2006 = N/A</b> <b>Total [05-07] = 3.4</b> <a href="#">(see complete data summary)</a>		
<b>P-12 Student Learning for Teacher Candidates</b>	<i>Performance Assessment</i>	<i>During Field and Clinical Practice (Benchmark 3-6)</i>	<a href="#">Metastandards Rubric</a>	<b>2006 - 2007 = 3.5</b> <b>2005 - 2006 = N/A</b> <b>Total [05-07] = 3.5</b> <a href="#">(see complete data summary)</a>	<i>More closely evaluate field experiences and clinical practice to fully address/align with NCATE's P-12 student learning assessment model.</i>	<u>Benchmark</u> <u>Standard</u> 3 1-5 4 1-8 5 1-8 6 1-10
	<i>Self-evaluation of Effect on P-12 Student Learning</i>	<i>At program completion (Benchmark 6)</i>	<a href="#">Program Completers Survey</a>	<b>2006 - 2007 = 3.8</b> <b>2005 - 2006 = N/A</b> <b>Total [05-07] = 3.8</b> <a href="#">(see complete data summary)</a>	<i>More closely evaluate field experiences and clinical practice to fully address/align with NCATE's P-12 student learning assessment model.</i>	Standards 1-8,10

Notes:

- The reported number of program completers is not aligned with the content exam data summary due to completion of the content exam during an earlier academic year.
- N/A denotes absence of data due to either no program completers or due to data not realized because of UAS formalization, including the addition of Metastandard Components and online review which was implemented in Fall 2006.



Summary Statement: The Fall 2006 data were lacking pertinent information regarding teacher candidates' progress toward mastery of the Metastandards. The Division of Education learned that the Metastandards rubric was in need of greater focus/specificity (i.e., Components) to further evaluate candidates' progress, to help inform stakeholders of Division expectations, and to assist candidates in the creation of their e-Portfolios. Adding the Components also led the Division to digitize the process of collecting data from stakeholders, candidates, and faculty, as well as to create the new position of Associate Dean for Assessment and Accreditation to oversee these data collection, analysis, and reporting processes. As a result of these efforts, a comprehensive online rubric data collection system has been successfully implemented. Portfolio data also indicated that candidates were lacking experiences/opportunities relevant to Metastandards 6: Professionalism/Learning Communities and 7: Family/Community Involvement. The Division, therefore, made the decision to examine possible University Partnership School arrangements with area schools for implementation in the next academic year in order to provide professional development and service learning opportunities for the candidates. Content preparation data suggested that Division of Education teacher candidates had comparable and sometimes greater content knowledge as compared to majors in the School of Arts and Sciences. As a result, the Division of Education decided to pursue develop and pursue approval for a B.S. in Secondary Education degree program to provide these individuals an opportunity to receive a degree in Education and avoid the dual department admission and advising. The B.S. in Secondary Education degree program was approved in April 2007 and was implemented in Fall 2007 ([click here to view Change Document and Approval letter](#)).

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# Section C Appendices

## Earth/Space Science

### Capstone Assessment for

Assessment Overview		
Assessment Name	General Science: Content Knowledge	
Publisher	ETS	
Number of Questions	120	
Approx. Completion Time	2 hours	
Format	Multiple-choice	
Assessment Content Categories	Number of Questions	% of Assessment
Scientific Methodology, Techniques, and History	12	10
The Physical Sciences	48	40
The Life Sciences	24	20
The Earth Sciences	24	20
Science, Technology, and Society	12	10
DPS Standard Categories	Number of Questions	% of Assessment
Universe	5	4
Earth and Natural Resources	10	8
Environmental Systems and Hazards	10	8
Matter and Energy	30	25
Populations	3	3

**Assessment Description:** (include when and how often administered at IU Kokomo)

The General Science: Content Knowledge exam is required for students choosing Earth/Space science as a licensure area. Passing scores on the exam are required to move from Benchmark 5 to Benchmark 6.



# Earth/Space Science

## Capstone Assessment for

Assessment Overview		
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# Content Knowledge

## Field Experiences and Clinical Practice

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Content Knowledge is captured by Metastandard #3: Curriculum and Content Knowledge, specifically components 1,2, and 3. Scores reported below were collected from the online Metastandard rubric completed by host teachers of candidates in field experiences and student teaching. The scale is 1 – 4, with 1 being basic and 4 being exemplary.

### Fall 2006

Metastandard 3: Curriculum and Content Knowledge	Overall Mean	<i>Components were not implemented until Spring 2007</i>
Benchmark 4	3.2	
Benchmark 5	3.0	
Benchmark 6	3.8	

### Spring 2007

Metastandard 3: Curriculum and Content Knowledge	Overall Mean	3.1 Knowledge of content	3.2 Represent. of content	3.3 Knowledge of students' misconceptions about content
Benchmark 3	3.2	3.4	3.3	2.8
Benchmark 5	3.8	4	3.8	3.8



# Content Knowledge Program Completer Survey

Spring 2007

<b>Secondary Program Completers (self evaluation)</b>	<b><i>n=4</i></b>
Develop a curriculum that builds on students' experiences, interests, and abilities.	<b>4.0</b>
Evaluate curriculum materials for their usefulness and appropriateness for students.	<b>3.8</b>
Use technology in the classroom.	<b>4.3</b>
Teach subject matter concepts, knowledge and skills in ways that enable students to learn.	<b>3.8</b>

Survey statements above are aligned with Metastandard #3: Curriculum and Content Knowledge and capture program completers self-evaluation of preparedness for utilization of content knowledge. The scale is 1 – 5, 1 being not at all prepared and 5 being extremely well prepared.



# Content Knowledge Administrators Survey

Spring 2007

<b>Administrators</b>	<b><i>n=14</i></b>
Develop a curriculum that builds on students' experiences, interests, and abilities.	<b>3.4</b>
Evaluate curriculum materials for their usefulness and appropriateness for students.	<b>3.5</b>
Use technology in the classroom.	<b>3.7</b>
Teach subject matter concepts, knowledge and skills in ways that enable students to learn.	<b>3.5</b>

Survey statements above are aligned with Metastandard #3: Curriculum and Content Knowledge and capture stakeholders evaluation of program completers' preparedness for utilization of content knowledge. The scale is 1 – 5, 1 being not at all prepared and 5 being extremely well prepared.



# Pedagogical Content Knowledge

## Portfolio

### Fall 2006

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#### Secondary Portfolios

	Formative n/a	Summative n/a
<b>Metastandard 1</b>	<i>*The formative evaluation was not implemented until Spring 2007</i>	<i>*There were no program completers Fall 2006</i>
<b>Metastandard 2</b>		
<b>Metastandard 3</b>		
<b>Metastandard 4</b>		
<b>Metastandard 5</b>		
<b>Metastandard 6</b>		
<b>Metastandard 7</b>		
<b>Overall Mean</b>		

### Spring 2007

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#### Secondary Portfolios

	Formative n/a	Summative n=6
<b>Metastandard 1</b>	<i>*There were no formative reviews Spring 2007 for secondary</i>	2.92
<b>Metastandard 2</b>		3.00
<b>Metastandard 3</b>		3.25
<b>Metastandard 4</b>		3.17
<b>Metastandard 5</b>		3.17
<b>Metastandard 6</b>		3.17
<b>Metastandard 7</b>		3.17
<b>Overall Mean</b>		3.12

Candidate portfolios are reviewed by faculty and outside stakeholders. Minimum passing score for the formative review is 2.0. Minimum passing score for the summative review is 3.0. These data highlight portfolio scores for Metastandard #3: Curriculum and Content Knowledge.



# Pedagogical Content Knowledge

## Field Experiences and Clinical Practice

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Pedagogical Content Knowledge is captured by Metastandard #3: Curriculum and Content Knowledge, specifically components 4 and 5. Scores reported below were collected from the online Metastandard rubric completed by host teachers of candidates in field experiences and student teaching. The scale is 1 – 4, 1 being basic and 4 being exemplary.

### Fall 06

Metastandard 3: Curriculum and Content Knowledge	Overall Mean	<i>Components were not implemented until Spring 2007</i>	
Benchmark 4	3.2		
Benchmark 5	3.0		
Benchmark 6	3.8		

### Spring 07

Metastandard 3: Curriculum and Content Knowledge	Overall Mean	3.4 Materials and resources	3.5 Planning and supporting challenging curricula
Benchmark 3	3.2	3.3	3.1
Benchmark 5	3.8	3.9	3.8



# Pedagogical Skills

## Portfolio

### Fall 2006

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#### Secondary Portfolios

	Formative n/a	Summative n/a
<b>Metastandard 1</b>	<i>*The formative evaluation was not implemented until Spring 2007</i>	<i>*There were no program completers Fall 2006</i>
<b>Metastandard 2</b>		
<b>Metastandard 3</b>		
<b>Metastandard 4</b>		
<b>Metastandard 5</b>		
<b>Metastandard 6</b>		
<b>Metastandard 7</b>		
<b>Overall Mean</b>		

### Spring 2007

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#### Secondary Portfolios

	Formative n/a	Summative n=6
<b>Metastandard 1</b>	<i>*There were no formative reviews Spring 2007 for secondary</i>	2.92
<b>Metastandard 2</b>		3.00
<b>Metastandard 3</b>		3.25
<b>Metastandard 4</b>		3.17
<b>Metastandard 5</b>		3.17
<b>Metastandard 6</b>		3.17
<b>Metastandard 7</b>		3.17
<b>Overall Mean</b>		3.12

Candidate portfolios are reviewed by faculty and outside stakeholders. Minimum passing score for the formative review is 2.0. Minimum passing score for the summative review is 3.0. These data highlight portfolio scores for Metastandard #1, 2, 4, and 5





# Pedagogical Skills

## Field Experiences and Clinical Practice

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Professional and Pedagogical Knowledge and skills are captured by Metastandard #1, 2, 4, and 5. Scores reported below were collected from the online Metastandard rubric completed by host teachers of candidates in field experiences and student teaching. The scale is 1 – 4, 1 being basic and 4 being exemplary.

### Fall 2006\*

Metastandard 1: Child Development and Learning	Overall Mean
Benchmark 4	3.20
Benchmark 5	3.00
Benchmark 6	4.00

Metastandard 2: Diversity	Overall Mean
Benchmark 4	3.20
Benchmark 5	2.88
Benchmark 6	4.00

Metastandard 4: Instruction	Overall Mean
Benchmark 4	3.20
Benchmark 5	3.25
Benchmark 6	3.6

Metastandard 5: Assessment	Overall Mean
Benchmark 4	3.20
Benchmark 5	3.00
Benchmark 6	4.00

\*Components were not implemented until Spring 2007

# Spring 2007

<b>Metastandard 1: Child Development and Learning</b>	<b>Overall Mean</b>	<b>1.1 Knowledge of major developmental theories</b>	<b>1.2 Knowledge of behaviors</b>	<b>1.3 Multiple influences on development and behavior</b>	<b>1.4 Healthy learning environments for all children</b>
<b>Benchmark 3</b>	3.1	3	3.2	2.9	3.2
<b>Benchmark 5</b>	3.8	3.9	3.8	3.7	3.9

<b>Metastandard 2: Diversity</b>	<b>Overall Mean</b>	<b>2.1 Knowledge of students' cultural identities</b>	<b>2.2 Valuing cultural diversity</b>	<b>2.3 Complex nature of diversity</b>	<b>2.4 Culturally sensitive techniques</b>	<b>2.5 Multiple perspectives</b>	<b>2.6 Understanding exceptionality</b>
<b>Benchmark 3</b>	3.3	3.1(n/o=3)	3.4 (n/o=3)	3.3(n/o=3)	3.5(n/o=4)	3.4(n/o=3)	3.3(n/o=3)
<b>Benchmark 5</b>	3.9	4	4	4	3.9	3.9	3.9

<b>Metastandard 4: Instruction</b>	<b>Overall Mean</b>	<b>4.1 Core teaching approaches supported by research</b>	<b>4.2 Choice of instructional approaches</b>	<b>4.3 Structure</b>	<b>4.4 Approaches for classroom management and addressing challenging behavior</b>	<b>4.5 Knowledge of the individual child in planning curriculum, instruction, and materials</b>	<b>4.6 Ability to vary instructional approaches</b>
<b>Benchmark 3</b>	3	2.9	3	3.2	2.9	2.9	3.2
<b>Benchmark 5</b>	3.8	3.7	3.9	4	3.7	3.7	3.8

<b>Metastandard 5: Assessment</b>	<b>Overall Mean</b>	<b>5.1 Assessment criteria and standards</b>	<b>5.2 Assessment of student learning</b>	<b>5.3 Using assessment to promote learning</b>	<b>5.4 Using assessment to inform teaching</b>
<b>Benchmark 3</b>	2.8	3 (n/o=3)	2.7(n/o=4)	2.8 (n/o=5)	2.8 (n/o=5)
<b>Benchmark 5</b>	3.7	3.8	3.4	3.9	3.8



# P-12 Student Learning Field Experiences and Clinical Practice Spring 2007

Student Learning is captured by the following Metastandard components. Scores reported below were collected from the online Metastandard rubric completed by host teachers of candidates in field experiences and student teaching. The scale is 1 – 4, 1 being basic and 4 being exemplary.

<b>Metastandard #1 Child Development and Learning</b>		
	<b>Benchmark 3</b>	<b>Benchmark 5</b>
<b>1.3 Multiple influences on development and behavior</b>	2.9	3.7
<b>1.4 Healthy learning environments for all children</b>	3.2	3.9

<b>Metastandard #2 Diversity</b>		
	<b>Benchmark 3</b>	<b>Benchmark 5</b>
<b>2.3 Complex nature of diversity</b>	3.3	4
<b>2.4 Culturally sensitive techniques</b>	3.5	3.9
<b>2.5 Multiple perspectives</b>	3.4	3.9

<b>Metastandard #3 Curriculum and Content Knowledge</b>		
	<b>Benchmark 3</b>	<b>Benchmark 5</b>
<b>3.1 Knowledge of content</b>	3.4	4
<b>3.2 Representation of content</b>	3.3	3.8
<b>3.3 Knowledge of students' misconceptions about content</b>	2.8	3.8
<b>3.4 Materials and resources</b>	3.3	3.9
<b>3.5 Planning and supporting challenging curricula</b>	3.1	3.8

<b>Metastandard #4 Instruction</b>		
	<b>Benchmark 3</b>	<b>Benchmark 5</b>
<b>4.2 Choice of instructional approaches</b>	3	3.9
<b>4.3 Structure</b>	3.2	4
<b>4.5 Approaches for classroom management and addressing challenging behavior</b>	2.9	3.7

<b>Metastandard #5 Assessment</b>		
	<b>Benchmark 3</b>	<b>Benchmark 5</b>
<b>5.2 Assessment of student learning</b>	2.7	3.4
<b>5.3 Using assessment to promote learning</b>	2.8	3.9

<b>Metastandard #7 Parent and Community Involvement</b>		
	<b>Benchmark 3</b>	<b>Benchmark 5</b>
<b>7.2 Student learning</b>	3.2	3.8



# P-12 Student Learning Program Completers Survey Spring 2007

Survey statements below are aligned with Metastandards components and capture program completers' self-evaluation of one's effect on P-12 student learning. The scale is 1 – 5, 1 being not at all prepared and 5 being extremely well prepared.

<b>Metastandard #1 Child Development and Learning</b>		
<b>1.3 Multiple influences on development and behavior</b>	<ul style="list-style-type: none"> <li>• Set challenging and appropriate expectations of learning and performance for students.</li> </ul>	3.8
<b>1.4 Healthy learning environments for all children</b>	<ul style="list-style-type: none"> <li>• Understand how students' social, emotional, physical, and cognitive development influences learning.</li> </ul>	4.3

<b>Metastandard #2 Diversity</b>		
<b>2.3 Complex nature of diversity</b>	<ul style="list-style-type: none"> <li>• Understand how different students in the classroom are learning.</li> </ul>	4.0
<b>2.4 Culturally sensitive techniques</b>	<ul style="list-style-type: none"> <li>• Choose teaching strategies to meet different student needs.</li> </ul>	3.8
<b>2.5 Multiple perspectives</b>		

<b>Metastandard #3 Curriculum and Content Knowledge</b>		
<b>3.1 Knowledge of content</b>	<ul style="list-style-type: none"> <li>• Help all children achieve high academic standards.</li> </ul>	3.3
<b>3.2 Representation of content</b>	<ul style="list-style-type: none"> <li>• Develop a curriculum that builds on students' experiences, interests, and abilities.</li> </ul>	4.0
<b>3.3 Knowledge of students' misconceptions about content</b>		
<b>3.4 Materials and resources</b>		
<b>3.5 Planning and supporting challenging curricula</b>		

<b>Metastandard #4 Instruction</b>		
<b>4.2 Choice of instructional approaches</b>	<ul style="list-style-type: none"> <li>Teach subject matter concepts, knowledge and skills in ways that enable students to learn.</li> </ul>	3.8
<b>4.3 Structure</b>	<ul style="list-style-type: none"> <li>Maintain an orderly and purposeful learning environment to improve student learning and performance.</li> </ul>	3.0
<b>4.5 Approaches for classroom management and addressing challenging behavior</b>		

<b>Metastandard #5 Assessment</b>		
<b>5.2 Assessment of student learning</b>	<ul style="list-style-type: none"> <li>Use a variety of assessment to determine student strengths and learning needs.</li> </ul>	3.8
<b>5.3 Using assessment to promote learning</b>	<ul style="list-style-type: none"> <li>Assess and tracks student achievement in order to evaluate student learning.</li> </ul>	4.0

<b>Metastandard #7 Parent and Community Involvement</b>		
<b>7.2 Student learning</b>	<ul style="list-style-type: none"> <li>Work with parents and families to better understand students and to support their learning.</li> </ul>	4.0
	<ul style="list-style-type: none"> <li>Understand how factors in the students' environment outside of school may influence their life and learning.</li> </ul>	3.8



**Program Completer Survey**  
Spring 2007

*Please answer the following questions to the best of your ability:*

1. I currently have a \_\_\_\_\_ GPA.
2. It has taken me approximately \_\_\_\_\_ years to complete the Education Program at Indiana University Kokomo.
3. I have transferred approximately \_\_\_\_\_ credits from other institutions.
4. I currently have interviewed for \_\_\_\_\_ teaching positions.
5. Do you currently have a full-time teaching position within the school system? \_\_\_yes \_\_\_no  
 If yes, please indicate the school corporation \_\_\_\_\_
6. Do you currently have a part-time teaching position within the school system? \_\_\_yes \_\_\_no  
 If yes, please indicate the school corporation \_\_\_\_\_
7. Do you currently have an education-related position outside the school system? \_\_\_yes \_\_\_no  
 If yes, please indicate the position \_\_\_\_\_

*After completing the Teacher Education Program at Indiana University Kokomo, how prepared are you to do the following:*

1. Set challenging and appropriate expectations of learning and performance for students.  
 Not at all Prepared  
 Poorly Prepared  
 Adequately Prepared  
 Well Prepared  
 Extremely Well Prepared
2. Understand how students' social, emotional, physical, and cognitive development influences learning.  
 Not at all Prepared  
 Poorly Prepared  
 Adequately Prepared  
 Well Prepared  
 Extremely Well Prepared
3. Understand how different students in the classroom are learning.  
 Not at all Prepared  
 Poorly Prepared  
 Adequately Prepared  
 Well Prepared  
 Extremely Well Prepared

4. Identify and obtain materials and use community resources to create a multicultural curriculum.
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
5. Choose teaching strategies to meet different student needs.
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
6. Understand how students' family and cultural backgrounds may influence learning.
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
7. Help all children achieve high academic standards.
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
8. Develop a curriculum that builds on students' experiences, interests, and abilities.
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
9. Evaluate curriculum materials for their usefulness and appropriateness for students.
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
10. Use technology in the classroom.
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared



11. Teach subject matter concepts, knowledge and skills in ways that enable students to learn.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

12. Choose teaching strategies for different instructional purposes.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

13. Maintain an orderly and purposeful learning environment to improve student learning and performance.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

14. Use a variety of assessment to determine student strengths and learning needs.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

15. Assess and tracks student achievement in order to evaluate student learning.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

16. Evaluate and reflect on your practice to improve instruction.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

17. Plan and solve problems with colleagues.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

18. Assume leadership responsibilities at school.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

19. Work with parents/guardians and families to better understand students and to support their learning.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

20. Understand how factors in the students' environment outside of school may influence their life and learning.

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared



**Administrator Survey  
Spring 2007**

*At your school, how prepared are the Indiana University Kokomo teacher candidates or resident teachers prepared to do the following:*

1. **Set challenging and appropriate expectations of learning and performance for students.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
2. **Understand how students' social, emotional, physical, and cognitive development influences learning.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
3. **Understand how different students in the classroom are learning.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
4. **Identify and obtain materials and use community resources to create a multicultural curriculum.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
5. **Choose teaching strategies to meet different student needs.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
6. **Understand how students' family and cultural backgrounds may influence learning.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
7. **Help all children achieve high academic standards.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared

8. **Develop a curriculum that builds on students' experiences, interests, and abilities.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
9. **Evaluate curriculum materials for their usefulness and appropriateness for students.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
10. **Use technology in the classroom.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
11. **Teach subject matter concepts, knowledge and skills in ways that enable students to learn.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
12. **Choose teaching strategies for different instructional purposes.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
13. **Maintain an orderly and purposeful learning environment.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
14. **Use a variety of assessment to determine student strengths, needs and programs.**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared
15. **Assess and track student achievement**
  - Not at all Prepared
  - Poorly Prepared
  - Adequately Prepared
  - Well Prepared
  - Extremely Well Prepared

**16. Evaluate and reflect on your practice to improve instruction.**

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

**17. Plan and solve problems with colleagues.**

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

**18. Assume leadership responsibilities at school.**

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

**19. Work with parents and families to better understand students and to support their learning.**

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared

**20. Understand how factors in the students' environment outside of school may influence their life and learning.**

- Not at all Prepared
- Poorly Prepared
- Adequately Prepared
- Well Prepared
- Extremely Well Prepared



**Division of Education—Indiana University Kokomo  
Metastandards Rubric  
Secondary (5-12) Initial Teacher Education Program**

<b>Metastandard #1: Adolescent and Young Adult Development and Learning</b>				
	<b>Basic (Knowledge and Comprehension)</b>	<b>Proficient (Application)</b>	<b>Mastery (Analysis and Synthesis)</b>	<b>Exemplary (Evaluation)</b>
<b>Proficiency</b>	Candidate understands the range of developmental characteristics of early adolescents and young adults within social, cultural, and societal contexts.	Candidate uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.	Candidate facilitates student learning by utilizing the knowledge of early adolescents and young adults' complex developmental characteristics and how these change in relation to family setting and society.	Candidate considers the range of developmental characteristics of early adolescents and young adults to gage the effectiveness of a supportive, congenial, and purposeful learning environment.
<b>Objective</b>	Candidate will recognize and discuss the major concepts, principles, theories, and research related to the development of early adolescents and young adults.	Candidate will practice theoretically grounded and research-based teaching and learning strategies with their peers	Candidate will create developmentally appropriate curricula and implement with all students sound theory-based instructional strategies.	Candidate will evaluate the effectiveness of theoretically based teaching and learning strategies through action research.
<b>Components</b>				
<b>1.1 Knowledge of major developmental theories</b>	Candidate can explain developmental theories and theorists in the field.	Candidate utilizes developmental theories in implementing curriculum for the middle school and secondary school classroom.	Candidate develops curriculum within the classroom that reflects and incorporates a variety of developmental theories.	Candidate evaluates the effectiveness of curriculum that incorporates a variety of developmental theories.
<b>1.2 Knowledge of behaviors</b>	Candidate can explain typical developmental behaviors of early adolescents and young adults.	Candidate utilizes developmentally appropriate curriculum.	Candidate creates developmentally appropriate curriculum.	Candidate evaluates curriculum to determine if it meets the developmental needs of early adolescents and young adults within the classroom.
<b>1.3 Multiple influences on development and behavior</b>	Candidate understands that there are a variety of factors that will influence development of children.	Candidate understands that there are a variety of factors that will influence development of children and can apply best practices, which may include the use of technology, to promote positive development and student learning.	Candidate understands that there are a variety of factors that will influence development of children and can develop curriculum that incorporates best practices which may include the use of technology to promote positive development and student learning.	Candidate understands that there are a variety of factors that will influence development of children and can evaluate curriculum to determine how effectively they employ best practices which may include the use of technology to promote positive development and student learning.

<b>1.4 Healthy learning environments for all early adolescents and young adults</b>	Candidate recognizes the importance of healthy learning environments in promoting an early adolescent's and young adult's social-emotional, cognitive-intellectual, physical, psychological, and moral development.	Candidate incorporates knowledge of healthy learning environments in the creation of lesson plans and classroom activities that promote social-emotional, cognitive-intellectual, physical, psychological, and moral development.	Candidate incorporates a variety of best practices of healthy learning environments in the creation of lesson plans and classroom activities that promote social-emotional, cognitive-intellectual, physical, psychological, and moral development.	Candidate evaluates the learning environment to determine how effectively it promotes social-emotional, cognitive-intellectual, physical, psychological, and moral development.
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**Metastandard #2: Diversity**

	<b>Basic (Knowledge and Comprehension)</b>	<b>Proficient (Application)</b>	<b>Mastery (Analysis and Synthesis)</b>	<b>Exemplary (Evaluation)</b>
<b>Proficiency</b>	Candidate understands how early adolescent and young adult learners differ socially and culturally and in their approach to learning.	Candidate uses his/her understanding of early adolescent and young adult challenges to provide opportunities to enhance students' reflective decision making skills.	Candidate uses his/her understanding of early adolescent and young adult diversity in learning, challenges, family setting, culture, and social settings to adapt instructional opportunities to meet students' needs.	Candidate understands the complexity of early adolescent and young adult development and how changes in social, cultural, and societal contexts affect development.
<b>Objective</b>	Candidate will recall developmental stages, positions of difference, and a variety of approaches to learning.	Candidate will develop learning experiences that address a variety of learning approaches focusing on enhancing students' reflective decision-making skills.	Candidate will create learning opportunities to meet students' diverse needs in regards to culture, family, learning, society, and adolescent/young adult challenges.	Candidate will create supportive learning environments based on appropriate developmental means.
<b>Components</b>				
<b>2.1 Knowledge of students' cultural identities</b>	Candidate recognizes the importance of diverse identities of groups and individual students within the school and the classroom.	Candidate identifies the differences and tensions between identities of groups and individual students.	Candidate incorporates students' diverse identities of groups and individual students into the curriculum.	Candidate evaluates his/her effectiveness at incorporating the diverse identities of groups and individual students into the curriculum and can make any necessary adjustments.
<b>2.2 Valuing cultural diversity</b>	Candidate recognizes the importance of values, virtues, and ethical codes shared by various cultural groups and individuals.	Candidate uses curriculum that addresses the values, virtues, and ethical codes shared by various cultural groups and individuals.	Candidate creates curriculum in order to help students understand that no perspective is "value neutral" and that knowledge reflects the interests, cultural biases, power, positions, and histories of individuals or group involved.	Candidate evaluates her/his effectiveness of addressing the values, virtues, and ethical codes shared by various cultural groups and individuals.

<b>2.3 Complex nature of diversity</b>	Candidate recognizes the diversity of cultures and groups within the United States.	Candidate utilizes curriculum to demonstrate the complex characteristics of cultures and groups within the United States and the ways in which race, ethnicity, gender, language, and social class interact to influence behavior.	Candidate creates curriculum to demonstrate the complex characteristics of cultures and groups and attempts to work with all students to meet their education needs.	Candidate evaluates her/his own efficacy to demonstrate the complex characteristics of cultures and groups and attempts to work with all students to meet their education needs.
<b>2.4 Culturally sensitive techniques</b>	Candidate identifies culturally sensitive techniques to address complex cognitive and social skills.	Candidate utilizes some culturally sensitive techniques to address complex cognitive and social skills.	Candidate formulates many culturally sensitive techniques to address complex cognitive and social skills.	Candidate evaluates the effectiveness of the multiple culturally sensitive techniques employed within the classroom in addressing complex cognitive and social skills.
<b>2.5 Multiple perspectives</b>	Candidate recognizes the limitations of having only one perspective on issues and the benefit of multiple perspectives.	Candidate utilizes a range of perspectives for students on various issues within the classroom.	Candidate plans opportunities to provide multiple perspectives for students to help develop strategies and skills to engage with those who are not like themselves.	Candidate determines the effectiveness of providing multiple perspectives to help students develop strategies and skills to engage with those who are not like themselves.
<b>2.6 Understanding exceptionality</b>	Candidate recognizes that early adolescents and young adults with exceptionalities should be included within the regular education classroom and are familiar with the state and federal statutes that guide that practice.	Candidate chooses curriculum that will reflect an inclusive environment.	Candidate creates curriculum that affords early adolescents and young adults with exceptionalities the opportunity to participate in the overall community of life within the regular classroom.	Candidate evaluates the efficacy of curriculum that affords early adolescents and young adults with exceptionalities the opportunity to participate in the overall community of life within the regular classroom.



**Metastandard #3: Curriculum/Content Knowledge**

	<b>Basic (Knowledge and Comprehension)</b>	<b>Proficient (Application)</b>	<b>Mastery (Analysis and Synthesis)</b>	<b>Exemplary (Evaluation)</b>
<b>Proficiency</b>	Candidate understands established state-mandated curriculum, key concepts, tools of inquiry and structure of his/her specific discipline (Language Arts/English, Science, Social Studies, Mathematics).	Candidate uses his/her knowledge of the interdisciplinary nature of their subject matter to foster well-rounded student learning.	Candidate uses his/her knowledge of subject matter, its interactions and interdisciplinary nature to provide meaningful learning for students.	Candidate plans, implements, and modifies original curriculum and instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
<b>Objective</b>	Candidate will recall and master content knowledge and appropriate knowledge and skills related to state-mandated curriculum.	Candidate will create interdisciplinary curriculum and lessons.	Candidate will develop and adapt quality content appropriate curriculum utilizing content and pedagogical knowledge.	Candidate will plan and implement integrated curriculum encompassing student, school, state, and community goals.
<b>Components</b>				
<b>3.1 Knowledge of content</b>	Candidate demonstrates content knowledge required by his/her specific discipline (Language Arts/English, Science, Social Studies, Mathematics).	Candidate utilizes his/her specific discipline (Language Arts/English, Science, Social Studies, Mathematics) content knowledge effectively within the curriculum.	Candidate illustrates interconnections to other parts of his/her specific discipline (Language Arts/English, Science, Social Studies, Mathematics) and other disciplines.	Candidate evaluates the effectiveness of mastered content knowledge based on student learning.
<b>3.2 Representation of content</b>	Candidate recognizes that content should be presented utilizing good examples.	Candidate represents content well with examples that are linked to students' pre-knowledge and experience.	Candidate describes content incorporating a variety of methods that are appropriate and link students' pre-knowledge and experience.	Candidate considers student feedback and input to determine effectiveness of methods that are utilized to represent content.
<b>3.3 Knowledge of students' misconceptions about content</b>	Candidate recognizes students' misconceptions concerning concepts and relationships among concepts.	Candidate utilizes curricula that promote conceptual understanding.	Candidate creates curricula that promote conceptual understanding.	Candidate evaluates the effectiveness of curriculum that promote conceptual understanding.
<b>3.4 Materials and resources</b>	Candidate understands the importance of choosing developmentally appropriate instructional materials and resources which includes the use of technology whenever possible.	Candidate chooses developmentally appropriate instructional materials and resources that engage students cognitively which includes the use of technology whenever possible.	Candidate creates relevant and developmentally appropriate instructional materials and resources which support and engage students cognitively which includes the use of technology whenever possible.	Candidate evaluates the effectiveness of the instructional materials and resources to support and engage students cognitively by assessing student progress which includes the use of technology whenever possible.

<b>3.5 Planning and supporting challenging curricula</b>	Candidate identifies the importance of planning and developing a challenging curriculum for all early adolescents and young adults.	Candidate implements challenging curriculum supporting early adolescents' and young adults' learning and growth.	Candidate designs curriculum that utilizes a variety of techniques that support and challenge early adolescents' and young adults' learning and growth.	Candidate evaluates curriculum through a variety of assessment methods to determine the effectiveness of supporting and challenging early adolescents' and young adults' learning and growth.
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<b>Metastandard #4: Instruction</b>				
	<b>Basic (Knowledge and Comprehension)</b>	<b>Proficient (Application)</b>	<b>Mastery (Analysis and Synthesis)</b>	<b>Exemplary (Evaluation)</b>
<b>Proficiency</b>	Candidate knows and understands the teaching/learning research base and the breadth of instructional options available.	Candidate understands the effectiveness of using a variety of instructional strategies and applies knowledge of effective communication techniques via technology.	Candidate employs a variety of instructional strategies as well as entertaining technological instructional resources to advance students' into high level thinking skills.	Candidate understands the value of using high quality instructional resources, including technology to encourage students' development of critical thinking, problem solving, and performance skills.
<b>Objective</b>	Candidate will recall and explain a variety of instructional options and how each are related to educational research.	Candidate will develop and deliver instruction based on sound pedagogical principles using effective media communication techniques.	Candidate will develop and implement instruction using a variety of strategies including technological instructional resources.	Candidate will integrate multiple instructional strategies, including technology, to encourage critical thinking, problem solving and performance skills.
<b>Components</b>				
<b>4.1 Core teaching approaches supported by research</b>	Candidate recalls core research-based teaching strategies.	Candidate utilizes core research-based teaching approaches.	Candidate synthesizes core research-based teaching approaches within developed curricula.	Candidate judges the utilization of core research-based teaching approaches
<b>4.2 Choice of instructional approaches</b>	Candidate demonstrates awareness of the various factors affecting the choice of instructional approach and makes technology a part of the instructional choices.	Candidate makes use of a variety of instructional approaches when delivering content and makes technology a part of the instructional choices.	Candidate blends a variety of instructional approaches when delivering content to maximize student learning and makes technology a part of the instructional choices.	Candidate explores a variety of instructional methods to determine the best instructional approach when delivering content to maximize student learning and makes technology a part of the instructional choices.
<b>4.3 Structure</b>	Candidate recognizes that lessons must be structured in a clear and organized format.	Candidate structures lessons in a comprehensive format that clearly includes a defined beginning and ending.	Candidate constructs lessons in a comprehensive format that clearly includes a defined beginning and ending and increases opportunity for student learning and discovery.	Candidate assesses lessons structure and evaluates the format and the learning opportunities for students.

<b>4.4 Approaches for classroom management and addressing challenging behavior</b>	Candidate recognizes the importance of classroom management in addressing group and individual behaviors.	Candidate implements suggested classroom management techniques to address group and individual behaviors.	Candidate independently develops a variety of classroom management strategies to address group and individual behaviors.	Candidate monitors and alters a variety of classroom management strategies as needed to address group and individual behaviors.
<b>4.5 Knowledge of the individual child in planning curriculum, instruction, and materials</b>	Candidate understands that teaching approaches, materials, and technology should address the child's individual learning needs.	Candidate can utilize teaching approaches, materials and technology that address the child's individual learning needs.	Candidate can develop teaching approaches, materials and technology that address the child's individual learning needs.	Candidate utilizes evidence to determine if teaching approaches, materials and technology are addressing the child's individual learning needs.
<b>4.6 Ability to vary instructional approaches</b>	Begins to recognize that varying instructional approaches produce different educational results and uses technology as part of instruction.	Adequately and appropriately varies instructional approaches as necessary and uses technology as part of instruction	Skillfully and appropriately varies instructional approaches as necessary and uses technology as part of instruction	Demonstrates a repertoire of instructional approaches consistent with best practice and uses technology as part of instruction

#### Metastandard #5: Assessment

	<b>Basic (Knowledge and Comprehension)</b>	<b>Proficient (Application)</b>	<b>Mastery (Analysis and Synthesis)</b>	<b>Exemplary (Evaluation)</b>
<b>Proficiency</b>	Candidate knows and understands a variety of authentic and equitable assessment strategies.	Candidate understands how to use formal and informal assessments to obtain useful information about student learning and development.	Candidate is knowledgeable about a variety of assessment strategies and utilizes multiple assessments in curriculum planning and implementation.	Candidate uses a variety of assessment strategies to evaluate and ensures the continuous intellectual, social, and physical development of the learner.
<b>Objective</b>	Candidate will recall a variety of authentic and equitable assessment methods.	Candidate will use formal and informal assessment strategies to evaluate the development of their students.	Candidate will develop, implement, and utilize curriculum, which encompass a variety of assessment methods.	Candidate will evaluate, utilize, and appropriately share assessment results to continue student progress intellectually, socially, and physically.
Components				
<b>5.1 Assessment criteria and standards</b>	Candidate recognizes the importance of standards and assessment criteria	Candidate incorporates standards and assessment criteria into lesson plans.	Candidate effectively integrates a variety of standards and assessment criteria into lesson plans.	Candidate determines the effectiveness of lesson plans assesses by utilizing a variety of standards and assessment criteria. .

<b>5.2 Assessment of student learning</b>	Candidate identifies that assessment is used to determine long term and short term goals and can identify its importance in determining students' strength and weaknesses in a specific discipline (Language Arts/English, Science, Social Studies, Mathematics).	Candidate uses assessment to determine long term and short term goals for students and students' strength and weaknesses in a specific discipline (Language Arts/English, Science, Social Studies, Mathematics).	Candidate creates assessment that is integrated into the curriculum and uses the results to analyze long term and short term goals and students' strength and weaknesses in a specific discipline (Language Arts/English, Science, Social Studies, Mathematics).	Candidate evaluates assessment that is integrated into the curriculum specifically its usefulness of analyzing long term and short term goals and determining students' strength and weaknesses in a specific discipline (Language Arts/English, Science, Social Studies, Mathematics)..
<b>5.3 Using assessment to promote learning</b>	Candidate identifies that assessment can be used as part of the learning experience and recognizes the importance of appropriate, timely feedback.	Candidate uses assessment as a learning experience and gives appropriate and timely feedback.	Candidate constructs their own assessments that reflects actual knowledge and guides the learning process for students.	Candidate judges assessment and makes alterations based on analysis of student learning.
<b>5.4 Using assessment to inform teaching</b>	Candidate identifies that assessment can be used to inform their teaching and to improve the quality of their instruction.	Candidate applies assessment techniques that can be used to inform their teaching and to improve the quality of their instruction.	Candidate designs an assessment agenda using a variety of techniques that can be used to inform their teaching and to improve the quality of their instruction.	Candidate evaluates e assessment techniques and materials used in the classroom and actively integrates this to inform teaching and to improve the quality of instruction.

<b>Metastandard #6: Professionalism/Learning Communities</b>				
	<b>Basic (Knowledge and Comprehension)</b>	<b>Proficient (Application)</b>	<b>Mastery (Analysis and Synthesis)</b>	<b>Exemplary (Evaluation)</b>
<b>Proficiency</b>	Candidate understands the unique philosophical foundations and organizational structure of secondary education and the role the teacher plays within this structure.	Candidate incorporates his/her knowledge of secondary schools into the design of educational programs that reflect sound principles of teaching and learning.	Candidate demonstrates a commitment to lifelong learning through reflection and professional behaviors.	Candidate is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others, and actively seeks out opportunities to grow professionally.
<b>Objective</b>	Candidate will recognize and explain the foundation and structure of secondary education including the role of the teacher.	Candidate will construct sound educational programs conducive to the structure and foundation of secondary schools.	Candidate will reflect on his/her own practice, on students' performance, and on developments in the field to continue their own growth as teachers.	Candidate will participate in professional experiences and opportunities that further his/her professional development and will use student learning as a professional gauge.

Components				
<b>6.1 Reflection and self-analysis</b>	Candidate recognizes the importance of reflection and self-analysis for improving professional practices.	Candidate engages in reflection in an attempt to improve her/his professional practice.	Candidate uses reflection and self-analysis to improve her/his professional practice in an ongoing manner.	Candidate selects opportunities for reflection and self-analysis, solicits evaluation of her/his performance from varied sources, to improve her/his professional practice.
<b>6.2 Decision making</b>	Candidate recognizes the complexities of decision making processes within school settings (e.g., IEPs, 504 plans)	Candidate participates in a variety of decision making processes within school settings (e.g., IEPs, 504 plans)	Candidate analyzes the role of an educator in the complexities of decision making processes within school settings (e.g., IEPs, 504 plans)	Candidate assess his/her own effectiveness to institute change through the decision making processes within school settings (e.g., IEPs, 504 plans)
<b>6.3 Collaboration with other professionals</b>	Candidate recognizes the importance of collaboration with other professionals to improve schools and student learning.	Candidate uses collaboration with other professionals for the purpose of improving schools and student learning.	Candidate seeks collaboration opportunities with an expanding range of professionals, and uses these relationships to improve schools and student learning.	Candidate selects collaboration opportunities to effectively improve schools and student learning.
<b>6.4 Participation in school, corporation, and other professional activities</b>	Candidate recognizes the importance of participation in school, corporation, and other professional activities.	Candidate participates in school, corporation, and other professional activities.	Candidate seeks participation opportunities in school, corporation, and other professional activities in order to build a stronger learning community.	Candidate evaluates knowledge gained from participation in school, corporation, and other professional activities in order to build a stronger learning community

Metastandard #7: Family/Community Involvement				
	Basic (Knowledge and Comprehension)	Proficient (Application)	Mastery (Analysis and Synthesis)	Exemplary (Evaluation)
<b>Proficiency</b>	Candidate understands the importance and role of the family and community on the development of early adolescents and young adults.	Candidate understands the importance of engagement with community resource persons and groups.	Candidate understands how to facilitate and support the education of early adolescents and young adults with the knowledge of the impact of family structure and home life.	Candidate understands the importance of fostering relationships with students, families, colleagues, community, and other school-related constituencies.
<b>Objective</b>	Candidate will explain the role of the family and community on the development of early adolescents and young adults.	Candidate will use community resources to build classroom environments and curriculum.	Candidate will develop a classroom environment and curriculum that supports the unique impressionistic early adolescent and young adult learning.	Candidate will develop and maintain positive working relationships with students, families, colleagues, community, and other school-related constituencies.

Components				
<b>7.1 Communicating</b>	Candidate recognizes the role of parent/guardian communication in relation to student success.	Candidate explores a variety of ways to communicate effectively with parents/guardians.	Candidate communicates effectively with parents/guardians through a variety of means.	Candidate reflects on her/his communication with parents/guardians and evaluates the methods employed.
<b>7.2 Student learning</b>	Candidate recognizes the importance of communicating academic and behavioral expectations to the parent/guardian in a clear manner.	Candidate endeavors to communicate academic and behavioral expectations to the parents/guardians.	Candidate develops communication strategies to explain academic and behavioral expectations to the parents/guardians in a clear manner	Candidate assesses the effectiveness and impact of parental communication strategies.
<b>7.3 Parent involvement</b>	Candidate recognizes the value of involving parents/guardians as active participants in the classroom and school settings.	Candidate incorporates parents/guardians through curriculum and instruction choices.	Candidate designs a variety of strategies to bring parents/guardians and parental input into the classroom curriculum and instruction.	Candidate reflects on the impact and success of using a variety of strategies to bring parents/guardians and parental input into the classroom curriculum and instruction
<b>7.4 Advocacy</b>	Candidate identifies the legal responsibilities of a teacher (e.g., students' rights and welfare, issues of confidentiality)	Candidate upholds the legal responsibilities of a teacher (e.g., students' rights and welfare, issues of confidentiality)	Candidate proposes ways to ensure that the legal responsibilities of a teacher are reflected in practice (e.g., students' rights and welfare, issues of confidentiality)	Candidate appraise his/her effectiveness in carrying out the legal responsibilities of a well-informed teacher (e.g., students' rights and welfare, issues of confidentiality)
<b>7.5 Collaboration with community</b>	Candidate recognizes the various stakeholder groups that comprise the school community.	Candidate partners with stakeholders through curriculum and instruction choices.	Candidate designs partnership arrangements with stakeholders through curriculum and instruction choices to strengthen schools, families, and student learning	Candidate evaluates the partnerships developed with stakeholders and determines optimal utilization to strengthen schools, families, and student learning
<b>7.6 Unity and diversity in communities</b>	Candidate recognizes the complex relationships between unity and diversity in communities.	Candidate uses curriculum to compare and contrast the role of and relationships between unity and diversity in various communities.	Candidate creates curriculum to help students understand the complex relationships between unity and diversity in their local communities.	Candidate evaluates curriculum developed to help students understand the complex relationships between unity and diversity in their local communities and makes appropriate modifications

Components adapted from:

Banks, J.A., Cookson, P., Gay, G., Hawley, W. D., Irvine, J. J. Nieto, S., Schofield, J. W., Stephan, W. G. (2001). Diversity Within Unity: Essential Principles For Teaching and Learning in a Multicultural Society. *Phi Delta Kappan*, , (83) 3, 196-203.

Danielson, C. (1996). Enhancing Professional Practice: A Framework for Teaching. *Association for Supervision and Curriculum Development*, Alexandria, VA.

Nitko, A.J. & Brookhart, S.M. (2007). Educational Assessment of Students. New Jersey: Pearson/Merrill Prentice Hall.



## Earth and Space Sciences: Content Knowledge (0571)

<i>Test at a Glance</i>			
Test Name	Earth and Space Sciences: Content Knowledge		
Test Code	0571		
Time	2 hours		
Number of Questions	100		
Format	Multiple-choice questions		
	Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
	I. Basic Scientific Principles of Earth and Space Sciences II. Tectonics and Internal Earth Processes III. Earth Materials and Surface Processes IV. History of the Earth and its Life-Forms V. Earth's Atmosphere and Hydrosphere VI. Astronomy	8–12 18–22 23–27 13–17 18–22 8–12	8–12% 18–22% 23–27% 13–17% 18–22% 8–12%





## General Science: Content Knowledge (0435)

<i>Test at a Glance</i>			
Test Name	General Science: Content Knowledge		
Test Code	0435		
Time	2 hours		
Number of Questions	120		
Format	Multiple-choice questions		
	Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
	I. Scientific Methodology, Techniques, and History	12	10%
	II. The Physical Sciences	48	40%
	III. The Life Sciences	24	20%
	IV. The Earth Sciences	24	20%
V. Science, Technology, and Society	12	10%	



Change Document Fall 2006 – Fall 2009							
	Fall 06	Spring 07	Fall 07	Spring 08	Fall 08	Spring 09	Fall 09
<b>Administrative Program Initiatives</b>							
Program Review: 2002 & 2005 IR	√		√				
TEC Program Approval		√					
Program Review: 2002 & 2005 BOE AFIs & NCATE Part C Rpts	√		√				
Program Review: ETS PRAXIS II Data & Title II Rpts	√		√				
Conceptual Framework Update	√	√	√				
Division Program Improvement Faculty and Staff Meeting			√				
Division Student Policy Manual Developed			√				
Division Student Teaching Handbook Developed			√				
Division Disposition Policy Document		√	√				

<b>Change Document Fall 2006 – Fall 2009</b>							
	<b>Fall 06</b>	<b>Spring 07</b>	<b>Fall 07</b>	<b>Spring 08</b>	<b>Fall 08</b>	<b>Spring 09</b>	<b>Fall 09</b>
<b>Data Aggregation, Digitization and Improvements</b>							
Data Aggregation: Historical (AY 2004 - 2006)	√						
Data Aggregation: Historical (AY 2006 - 2007)	√	√					
Metastandards Rubric Digitized and Online: Secondary (5-12)	√						
e-Portfolio Rubric Digitized		√					
Formative and Summative e-Portfolio Program Online			√				

<b>Change Document Fall 2006 – Fall 2009</b>							
	<b>Fall 06</b>	<b>Spring 07</b>	<b>Fall 07</b>	<b>Spring 08</b>	<b>Fall 08</b>	<b>Spring 09</b>	<b>Fall 09</b>
<b>Benchmark Requirement and Timeline</b>							
Benchmark Document Update: Secondary (5-12)	√		√				
Inclusion of Disposition Expectations within Benchmark Document			√				
Inclusion of Metastandards Expectation within the Benchmark Document			√				

Change Document Fall 2006 – Fall 2009							
	Fall 06	Spring 07	Fall 07	Spring 08	Fall 08	Spring 09	Fall 09
<b>e-Portfolio Program</b>							
e-Portfolio Initiative & Sequence Document: Secondary (5-12)	√	√	√				
e- Portfolio Classroom Teacher Initiative	√	√	√				
e-Portfolio Classroom Teacher Program			√				

Change Document Fall 2006 – Fall 2009							
	Fall 06	Spring 07	Fall 07	Spring 08	Fall 08	Spring 09	Fall 09
<b>Metastandards Rubric Development</b>							
Metastandards Rubric Components: Secondary (5-12)	√						
Data Collection Instrument - Survey: Program Completers	√	√	√				
Data Collection Instrument - Survey: P-12 Administrators	√	√	√				
Data Collection Instrument - Survey: Host Teachers	√	√	√				

**Change Document Fall 2006 – Fall 2009**

	Fall 06	Spring 07	Fall 07	Spring 08	Fall 08	Spring 09	Fall 09
<b>Academic and Instructional Developments</b>							
Education Learning Community For Freshmen			√				
Training and Orientation for all Student Teacher-Host teachers	√	√	√				
Training and Orientation for all Student Teacher-University Supervisors	√	√	√				



INDIANA COMMISSION  
HIGHER EDUCATION

March 13, 2007

President Adam Helbert  
Indiana University  
Bryan Hall 200  
Bloomington, IN 47405

Dear Adam:

At its March 9, 2007 meeting, the Commission for Higher Education took the following action:

Program: B.A./B.S. in Human Biology  
CIP Codes: Federal – 269999; State – 269999  
Action: Approved for Indiana University Bloomington to be offered at Bloomington

Program: B.S. in Secondary Education  
CIP Codes: Federal – 131205; State – 131205  
Action: Approved for Indiana University Kokomo to be offered at Kokomo

Program: Master of Public Management  
CIP Codes: Federal – 440401; State – 440401  
Action: Approved for Indiana University Kokomo to be offered at Kokomo

Program: M.F.A. in Visual Art and Public Life  
CIP Codes: Federal – 500101; State – 500101  
Action: Approved for Indiana University through the IUPUI campus

The Commission's Academic Program Inventory (API) is posted on the CHE Information Center website at: <https://www.che.state.in.us/Reports/Pages/Folder.aspx>. It is downloadable in different formats and updated monthly. Please review your institution's API for accuracy and notify the Commission's office if additions, deletions or changes are needed.

Please feel free to call on me should you have any questions regarding this action.

Sincerely,

Stan Jones  
Commissioner

cc: Charles Bantz  
Robert Sandy  
Barbara Bickelmeyer  
JoAnne Bowen



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## **D. FACULTY SECTION**

Teacher candidates in the Earth/Space Science Education initial program have the distinct privilege to engage in intellectual conversation, discussion, and practice with highly talented faculty among the ranks of Professor, Associate Professor, Assistant Professor, Lecturer, and Adjunct. All content and pedagogy courses are taught by highly qualified instructors with extensive experience teaching as well as providing their field of study with scholarly and service contributions. Many instructors are recipients of teaching awards on the IU Kokomo campus, within the IU system, and within their respective discipline fields.

## Earth Space Science

Faculty Name	Highest Degree Attained	Area(s) of Specialization	Courses Taught in Program	Additional Responsibility in Program	Years of P-12 Experience
D. Antonio Cantu	Ph.D.	Curriculum and Instruction, Educational Research (Naturalistic), Educational Technology, Social Studies Education		Dean of Education	9 years
Margo Sorgman	Ed.D.	Curriculum and Instruction, K-6 Social Studies Education Methods, Economics	M101 Lab/Field Experience (3) M440 Teaching Problems and Issues Seminar (3)		6 years
Michael Tulley	Ed.D.	K-12 Literacy Education Methods, Educational Research, Textbook Selection Policies and Processes	M464 Methods of Teaching Reading (3) M440 Teaching Problems and Issues Seminar (3)		5 years
Ellen Sigler	Ed.D.	Educational Psychology, Educational Assessment and Evaluation	K205 Intro to Exceptional Children (3) P250 General Educational Psychology (3)	Associate Dean for Assessment and Accreditation	*2 years Psychologist at Head Start
Julie Saam	Ph.D.	Curriculum and Instruction, K-12 Science Education, Middle School Education	M312 Gen Meth-JR High Middle School Education (3)	Assistant Dean for Program Review and Graduate Studies	6 years
Shirley Aamidor	Ph.D.	Curriculum and Instruction, P-6 Teaching Methods, Early Development	M440 Teaching Problems and Issues Seminar (3)		7 years



Faculty Name	Highest Degree Attained	Area(s) of Specialization	Courses Taught in Program	Additional Responsibility in Program	Years of P-12 Experience
Masato Ogawa	Ed.D.	Secondary Curriculum and Instruction, 5-12 Social Studies Education, Building Multiple Historical Perspectives, Middle School Education	H340 Education & American Culture (3) S487 Principles of SR/JR/MS Education (3)		4 years
Amber Reed	Ph.D.	Curriculum and Instruction, Elementary Education, P-6 Language/Literacy Education, Childhood Studies, Action Research	M440 Teaching Problems & Issues Seminar (3)		8 years
Gary Dolph	Ph.D.	Botany	L473 Ecology		
Lea Gilbertson	M.S.	Geology	G107 Physical Systems of the Environment G315 Environmental Conservation		
F. Rick Steldt	Ph.D.	Physics	A100 The Solar System		
Marcia Gillette	Ph.D.	Chemistry	C390 Environmental Science C105 Principles of Chemistry I C125 Experimental Chemistry I C106 Principles of Chemistry II C126 Experimental Chemistry II		

[Home](#)

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# Appendix

STATE OF INDIANA

DEPARTMENT OF EDUCATION  
DR. SUELLEN REED, SUPERINTENDENT



INDIANAPOLIS 46204-2798

ROOM 229 - STATE HOUSE  
AREA CODE 317-232-6665

June 21, 2007

Dr. Dean Cantu  
Indiana University—Kokomo  
2300 S. Washington Street  
Box 9003  
Kokomo, IN 46904-9033

Dear Dr. Cantu:

This letter is to officially notify you that the following new program proposals were recommended to the State Superintendent for Public Instruction for approval by the Division of Professional Standards Advisory Board at its June 20, 2007, meeting:

**Generalist: Early Childhood (Preschool)**

**Fine Arts: Visual Arts**

**Generalist: Early Adolescence**

**Master of Science in Education**

These programs have been approved. Congratulations and best wishes to your unit as you continue to prepare teachers for the state of Indiana.

Sincerely,

A handwritten signature in cursive script that reads "Dr. SuelLEN Reed".

Dr. SuelLEN Reed  
Superintendent of  
Public Instruction

[Home](#)