COVER SHEET FOR PROGRAM REVIEW
(Rules 2002)

DOCUMENT #2

INSTITUTION: Indiana University Kokomo

PROGRAM: Mathematics

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 Mathematics 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 Mathematics 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 36 credits in the Mathematics Teaching Major which include courses in: Number Systems and Algebra, Geometry and Measurement, Statistics and Probability, Calculus and Discrete Mathematics. Teaching Major requirements involve a prescribed course regiment that is aligned with DPS Content Standards.

INDIANA UNIVERSITY
KOKOMO
DIVISION OF EDUCATION

BACHELOR of SCIENCE in SECONDARY EDUCATION

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

Mathematics 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)			
One of the following: MATH M125 Pre-Calculus Mathematics (3) MATH M118 Finite Mathematics (3) MATH M119 Survey of Calculus (3) MATH M215 Calculus I (3)			
	Total		

NATURAL SCIENCES (Minimum of 8 credit hours required. Select from at least two of the following groups, one laboratory experience must be included)	**Course Taken**	**Credit Hours**	**Grade**
Life Science 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)			
Physical Science 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)			
Earth/Space Science AST A100 The Solar System (3) GEOL G107 Physical Systems of the Environment (3)			
COAS E105 Topics in Natural and Math Sciences (3)			
	Total		

SOCIAL AND BEHAVIORAL SCIENCES (Minimum of 9 credit hours required. Select from at least two of the following groups)	**Course Taken**	**Credit Hours**	**Grade**
History 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)			
Sociology and Psychology SOC S100 Introduction to Sociology (3) SOC S101 Social Problems and Politics (3) PSY P103 General Psychology (3)			
Political Science and Economics 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)			
	Total		

HUMANITIES **(Minimum of 6 credit hours required. Select from at least two of the following groups)**	**Course Taken**	**Credit Hours**	**Grade**
Literature 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)			
Fine Arts 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)			
Philosophy 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)			
Communications 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)			
	Total		

TEACHING MAJOR REQUIREMENTS

Teaching major requirements are fulfilled by completing a total of 36 credit hours in Mathematics. (Minimum GPA of 2.5 in teaching major and no grade less than C in the teaching major is required.) Indiana Division of Professional Standards requires you to complete courses that 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.

Principles	Required IU Kokomo Courses	Course Taken	Hours	Grade
Number Systems and Algebra	M303			
	M403			
Geometry and Measurement	T336			
Statistics and Probability	M360			
	M366			
Calculus	M215			
	M216			
	M311			
Discrete Mathematics	M447 or M347			

Additional Courses	Hours	Grade
Total		

*Other possible IU Kokomo courses: Elementary Differential Equations with Applications M313; Elementary Complex Variables with Applications M415; Introduction to Modern Algebra II M404; Introduction to Analysis I-II M413-M414; Mathematical Models and Applications II M448; Numerical Analysis I-II M471-M472; Visual Basic.net C297; C++ or JAVA C309

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

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

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:

Passage of PRAXIS I (PPST) (on transcript EDUC-M199)	Minimum Score	Score	Date
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

Cores II, II, and IV (18 credit hours) Core II (FALL semester)	Course Taken	Credit Hours	Grade
EDUC M312 General Methods Jr/High Middle			
EDUC S487 Principles of Senior High/Junior High/Middle School Education			
Core III (SPRING semester)	**Course Taken**	**Credit Hours**	**Grade**
EDUC M457 Methods of Teaching SH/JH/MD Mathematics			
SOC S100 Introduction to Sociology or approved multicultural course			
Core IV (FALL semester)	**Course Taken**	**Credit Hours**	**Grade**
EDUC M464 Methods of Teaching Reading			
EDUC H340 Education and American Culture			
	Total		

Admission to Core V Requirements

Passage of PRAXIS II Teaching Major Areas	Score	Date

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

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

Mathematics Course Descriptions

Number Systems and Algebra

MATH-M 303 Linear Algebra for Undergraduates (3 cr.)
P: MATH-M 216 or consent of instructor. Introduction to theory of real and complex vector spaces. Coordinate systems, linear dependence, bases. Linear transformations and matrix calculus. Determinants and rank. Credit not given for both MATH-M 301 and 303.

MATH-M 403/MATH-M 404 Introduction to Modern Algebra I-II (3-3 cr.)
P: MATH-M 301 or 303. Study of groups, rings, fields (usually including Galois theory), with applications to linear transformations.

Geometry and Measurement

MATH-T 336 Topics in Euclidean Geometry (3 cr.)
P: MATH-M 301 or 303 and 391 or their equivalents. Axiom systems for the plane, the parallel postulate and non-Euclidean geometry, classical theorems. Geometric transformation theory, vectors and analytic geometry, convexity, theory of area and volume.

Statistics and Probability

MATH-M 360 Elements of Probability (3 cr.)
P: MATH-M 216. C: MATH-M 311. Introduction to mathematical theory of probability. Probability models, combinatorial problems, conditional probability and independence, random variables, discrete and continuous distributions, repeated Bernoulli trials, gambler's ruin problems, moments, moment generating functions, law of large numbers, central limit theorem, and applications.

MATH-M 366 Elements of Statistical Inference (3 cr.)
P: MATH-M 360. Sampling distributions (Chi square, t and F distributions), order statistical decisions, and inference. Hypothesis-testing concepts, Neyman-Pearson Lemma, likelihood ratio tests, power of tests. Point estimation, method of moments, maximum likelihood, Cramer-Rao bound, properties of estimators. Interval estimation, applications. Regression, correlation, analysis of variance, nonparametric methods.

Calculus

MATH-M 215/MATH-M 216 Calculus I-II (5-5 cr.)
P: two years of high school algebra and trigonometry, or both MATH-M 125 and 126. Coordinates, functions, straight line, limits, continuity, derivative and definite integral, applications, circles, conics, techniques of integration, infinite series. MATH-M 215 not open to those who have had MATH-M 119 or 211. A student cannot receive credit for both MATH-M 131 and 215, 119 and 215, 211 and 215, or 120 and 216 and MATH-M 212 and 216.

MATH-M 311 Calculus III (4 cr.)
P: MATH-M 216 or consent of instructor. Elementary geometry of 2, 3, and n-space; functions of several variables; partial differentiation; minimum and maximum problems; and multiple integration.

Discrete Mathematics

MATH-M 447/MATH-M 448 Mathematical Models and Applications I-II (3-3 cr.)
P: MATH-M 301 or 303, 311, and 360, which may be taken concurrently, or with consent of instructor. Formation and study of mathematical models used in the biological, social, and management sciences. Mathematical topics include games, graphs, Markov and Poisson processes, mathematical programming, queues, and equations of growth. Suitable for secondary school teachers.

MATH-M 347 Discrete Mathematics (3 cr.)
P: MATH-M 212 or MATH-M 216. Injective and subsurjectivejective functions; inverse functions; composition; reflexive, symmetric, and transitive relations; equivalence relations; sets including complements, products, and power sets; cardinality; introductory logic including truth tables and quantification; elementary techniques of proof including induction and recursion; counting techniques; graphs and trees; discrete probability.

Other

MATH-M 313 Elementary Differential Equations with Applications (3 cr.)
P: MATH-M 216 or consent of instructor. Ordinary differential equations of first order and linear equations of higher order with applications, series solutions, operational methods, Laplace transforms, and numerical techniques. A student may not receive credit for both MATH-M 313 and 343.

MATH-M 413/MATH-M 414 Introduction to Analysis I-II (3-3 cr.)
P: MATH-M 301 or 303, and 311, or consent of instructor. Modern theory of real number system, limits, functions, sequences and series, Riemann-Stieltjes integral, and special topics.

MATH-M 415 Elementary Complex Variables with Applications (3 cr.)
P: MATH-M 311. Algebra and geometry of complex numbers, elementary functions of a complex variable, power series, integrations, calculus of residues, conformal mapping. Application to physics.

MATH-M 471/MATH-M 472 Numerical Analysis I-II (3-3 cr.)
P: MATH-M 301 or 303, 313 or 343, and 311, or consent of instructor. R: CSCI-C 301 or FORTRAN programming.
Interpolation and approximation of functions, numerical integration and differentiation, solution of nonlinear equations, acceleration and extrapolation, solution of systems of linear equations, eigenvalue problems, initial and boundary value problems for ordinary differential equations, and computer programs applying these numerical methods.

CSCI-C297 Visual Basic with SQL (4 cr.)
P: CSCI-C 106. An intensive introduction to computer programming techniques using Visual Basic. Emphasis on proper program design and documentation. Includes interfacing VB with SQL.

CSCI-C309 Object-oriented Programming (4 cr.)
P: CSCI-C 297 or another programming course. An introduction to objected-oriented programming in an OOP language such as C++ or Java. Covers the transition from structured programming to OOP techniques to support encapsulation, inheritance, and polymorphism.

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B. CONTENT STANDARDS MATRIX SECTION

Teacher candidates in the Mathematics initial program have prescribed content course requirements in Mathematics. 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:

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

IU Kokomo Division of Education
Mathematics Content Standards Alignment Matrix

Standard #1: Teachers of mathematics understand the key concepts and procedures of mathematics and have a broad understanding of the mathematics curriculum. Teachers of mathematics understand the appropriate structures within the discipline and its interaction with technology.

Mathematics Content Standards Indicators	M457	M303	M403	T336	M360	M366	M215	M216	M311	M347
Knowledge										
1. The teacher knows the history of mathematics, the dynamic nature of mathematics, and the changing ways we learn, teach, and do mathematics.	A, B, G									
2. The teacher understands the role of technology in mathematics.	F, I, J, K	B			B	B	B	B		
3. The teacher understands major concepts, assumptions, tools of inquiry (problem solving), and mathematical reasoning that are central to the discipline.	G			B	B	B				
4. The teacher understands how students' conceptual frameworks and their conceptions/misconceptions of mathematical knowledge can influence their learning.	G		B	B	B	B				
5. The teacher knows and understands relevant mathematical connections within the discipline, the real-world context, and other subject areas.	G, J				B	B	B	B	B	B
Number systems, number theory, algebra, and linear algebra										
6. Teachers of mathematics should have a well-developed numbers sense (including mathematics, estimation, and reasonableness of results) and an understanding of the use of number concepts, operations, and properties (including basic number theory), of the role of algorithms, and of place value.	B, G				B	B				
7. Teachers of mathematics should understand algebraic structures, properties of the operation in these structures, and how they are reflected in the number systems of school mathematics, especially the use of matrices and matrix operations to record information and to deal with solutions of systems of equations.	B, G	B	B							
8. Teachers of mathematics should study the system of complex numbers including both geometric (vector) and polar representations of complex numbers and the interpretation of complex solutions to equations.	B, G									

IU Kokomo Division of Education
Mathematics Content Standards Alignment Matrix

Standard #1: Teachers of mathematics understand the key concepts and procedures of mathematics and have a broad understanding of the mathematics curriculum. Teachers of mathematics understand the appropriate structures within the discipline and its interaction with technology.

Mathematics Content Standards Indicators	M457	M303	M403	T336	M360	M366	M215	M216	M311	M347
9. Teachers of mathematics investigate selected algebraic structures including groups, rings, integral domains, and fields (including order relations).	G		B							
10. Teachers of mathematics should explore topics in number theory including modern topics such as coding theory.	B									
11. Teachers of mathematics should investigate linear algebra, additionally, functions acting on these structures, such as isomorphisms of groups and linear (matrix) functions acting on vector spaces.	B, G	B	B							
Geometry and Measurement										
12. Teachers of mathematics should understand how geometry is used to describe the world in which we live and how geometry can be used to solve real-world problems.	C, G						B	B	B	B
13. Teachers of mathematics should understand two- and three-dimensional figures, tessellations, symmetry, polygons, polyhedra, and curved shapes through the use of synthetic, coordinate and transformational geometry, using physical models, drawings, and computer graphics.	C, G								B	
14. Teachers of mathematics should understand vector geometry, non-Euclidean geometries, the foundations of geometry, and the power of the axiomatic method.	C, G	B		B					B	
15. Teachers of mathematics should study the interplay between algebra and geometry using experiences with linear algebra, matrix representations of transformations, geometric effects of transformations, and the algebraic structure of a set of transformations.	F, J	B	B							
16. Teachers of mathematics should understand that the units to record measure are different from the process of measurement itself through use of direct and indirect measurement explorations using both standard and nonstandard units.	C, G			B						

IU Kokomo Division of Education
Mathematics Content Standards Alignment Matrix

Standard #1: Teachers of mathematics understand the key concepts and procedures of mathematics and have a broad understanding of the mathematics curriculum. Teachers of mathematics understand the appropriate structures within the discipline and its interaction with technology.

Mathematics Content Standards Indicators	M457	M303	M403	T336	M360	M366	M215	M216	M311	M347
17. Teachers of mathematics should understand the the System International d'Units (the metric system).	G						B	B		
Statistics and probability										
18. Teachers of mathematics should study both descriptive and inferential statistics and probability from both experimental and theoretical viewpoints	A, J, K				B	B				
19. Teachers of mathematics should understand key statistical concepts such as: measures of dispersion and central tendency, measures of variation (range, standard deviation, interquartile range, and outliers), confidence intervals, hypothesis testing, correlations, regression, and general distributions through use of a variety of experiences in the collection, organization, representation, analysis, interpretation of data, and communication of results.	A, J, K					B				
20. Teachers of mathematics should be able to represent data in various ways including: graphs, including bar, line, circle, and pictographs, as well as line plots, stem-and-leaf plots, box plots, histograms, and scatter plots.	G, J, K					B				
21. Teachers of mathematics should explore empirical probability from simulations and from data they have collected and analyze theoretical probability on the basis of a description of the underlying sample space using dice, spinners, random numbers, and computer programs.	G, J, K				B					
22. Teachers of mathematics should become aware of common misconceptions and potential misuses of statistics and probability.	G				B	B				
23. Teachers of mathematics should become aware of fair games and expected value, odds, elementary counting techniques, conditional probability, and the use of an area model to represent probability geometrically.	C				B	B				

IU Kokomo Division of Education
Mathematics Content Standards Alignment Matrix

Standard #1: Teachers of mathematics understand the key concepts and procedures of mathematics and have a broad understanding of the mathematics curriculum. Teachers of mathematics understand the appropriate structures within the discipline and its interaction with technology.

Mathematics Content Standards Indicators	M457	M303	M403	T336	M360	M366	M215	M216	M311	M347
24. Teachers of mathematics should study both discrete and continuous probability distributions and should use such distributions to make inferences about populations.	C				B	B				
Functions and use of variables										
25. Teachers of mathematics should understand the concepts of functions and their use in the growth of mathematical ideas, different representations of functions (tabular, graphical, symbolic, verbal), how to move among these representations, and the strengths and limitations of each.	G	B	B		B	B	B	B	B	
Problem Solving										
26. Teachers of mathematics should know how to use mathematical inquiry, including questioning techniques, discovery, reasoning process, identifying strategies, reflective process, analysis and justification, formulating the problem and moving from simple ideas to complex to solve problems.	J	B	B	B	B	B	B	B	B	B
Calculus and analysis										
27. Teachers of mathematics should acquire conceptual knowledge of the process of differentiation and integration, including examples of applications of these ideas in the sciences and in modeling and solving problems in mathematics.	I, J						B	B	B	
28. Teachers of mathematics should explore functions, graphs, and the notion of limits starting with concrete problems such as maximizing the volume of a box than can be folded from a rectangular sheet of grid paper.	I, J						B	B	B	
29. Teachers of mathematics should explore the concepts of limit and infinity for their role in the history of the development of calculus and in the study of geometry.	I, J						B	B	B	

IU Kokomo Division of Education
Mathematics Content Standards Alignment Matrix

Standard #1: Teachers of mathematics understand the key concepts and procedures of mathematics and have a broad understanding of the mathematics curriculum. Teachers of mathematics understand the appropriate structures within the discipline and its interaction with technology.

Mathematics Content Standards Indicators	M457	M303	M403	T336	M360	M366	M215	M216	M311	M347
30. Teachers of mathematics should have a firm conceptual grasp of the notions of limit, continuity, differentiation, and integration and a thorough background in the techniques and applications of calculus.	B, J, K						B	B	B	
31. Teachers of mathematics need to appreciate that the development and use of calculus to model and solve problems involving rates of change, optimization, and measurement were fundamentally important intellectual achievements in the history of mathematics.	B, J, K						B	B	B	
Discrete mathematics										
32. Teachers of mathematics should be attentive to symbolic logic, induction and recursion, relations, equivalence relations and functions, sequences and series, difference equations, and a introduction to combinatorics.	B, J, K									B
33. Teachers of mathematics should explore A wide range of modeling applications of graphs and trees along with properties of graphs and trees, matrix representations of graphs, and incidence paths in graphs.	B, J, K									B

IU Kokomo Division of Education
Mathematics Content Standards Alignment Matrix

Mathematics Content Standards #2 - 10	M457
#2: Teachers of mathematics understand how students learn mathematics and provide learning opportunities that support their intellectual, social, and personal development.	G, J, K
#3: Teachers of mathematics understand how students differ in their approaches to learning and create instructional opportunities that are adapted to diverse learners.	G, J, K
#4: Teachers of mathematics understand and use a variety of instructional strategies to encourage students' development of critical thinking, problem-solving, and performance skills.	G, J, K
#5: Teachers of mathematics use 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.	G, J, K
#6: Teachers of mathematics use knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.	G, J, K
#7: Teachers of mathematics plan instruction based upon knowledge of subject matter, students, the community, and curriculum goals.	J, K
#8: Teachers of mathematics understand and use formal and informal assessment strategies to evaluate and ensure the ongoing intellectual, social, and personal development of the learner.	G, J, K, L
#9: Teachers of mathematics are reflective practitioners who continually evaluate the effects of their choices and actions on others (students, parents, families, and other professionals in the learning community) and who actively seek out opportunities to grow professionally.	A, J
#10: Teachers of mathematics foster relationships with school colleagues, parents, families, and agencies in the larger community to support student learning and well being.	J

Home

C. ASSESSMENT DATA SECTION

Teachers candidates in the Mathematics 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 Sciences.

Mathematics Assessment Data						
Element Assessed	**Describe the Assessment Activity**	**When is it assessed?**	**Title of the Instrument or Rubric**	**Aggregated Data Summary** **Program Completers** **2006 - 2007 = 0** **2005 - 2006 = 4** **Total [05-07] = 4**	**Curriculum/ Program/Unit operations modifications made based on this data**	**Content Standards addressed by this Assessment Activity**
Content Knowledge for Teacher Candidates	*Praxis II*	*Prior to Student Teaching*	*Praxis II*	**2006 - 2007 = N/A** **2005 - 2006 = 166** **Total [05-07] = 166** **(see complete data summary)**	*Joint Committee will further align course offerings and capstone content exams with Praxis II content areas.*	**N/A** **As per DPS Instructions**
	Capstone Content Knowledge Exam	*Prior to Graduation*	*Mathematics General Exam* (see exam overview)	**2006 - 2007 = N/A** **2005 - 2006 = 76** **Total [05-07] = 76** **(see complete data summary)**	*Development and approval of new B.S. in Secondary Education degree program.*	***Standard 1*** ***(see specific category alignment)***
	Utilization of Content Knowledge as performance assessment	*During Field and Clinical Practice (Benchmark 3-6)*	*Metastandards Rubric*	**2006 - 2007 = 3.4** **2005 - 2006 = N/A** **Total [05-07] = 3.4** **(see complete data summary)**	*Development and inclusion of Components for the Metastandards.*	Benchmark Standard *3 1-5* *4 1-8* *5 1-8* *6 1-10*
	Self-evaluation of preparedness for utilization of content knowledge	*At program completion (Benchmark 6)*	*Program Completers Survey*	**2006 - 2007 = 4.0** **2005 - 2006 = N/A** **Total [05-07] = 4.0** **(see complete data summary)**	*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*
	Stakeholder evaluation of preparedness for utilization of content knowledge	*At program completion (Benchmark 6) and for alumni*	*Administrators Survey*	**2006 - 2007 = 3.5** **2005 - 2006 = N/A** **Total [05-07] = 3.5** **(see complete data summary)**	*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*

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

Home

Section C Appendices

Mathematics

Capstone Assessment for Mathematics Majors

Assessment Overview		
Assessment Name	Mathematics General Exam	
Publisher	IU Kokomo Mathematics Faculty	
Number of Questions	10	
Approx. Completion Time	4 weeks	
Format	Take-home exam	
Assessment Content Categories	**Number of Questions**	**% of Assessment**
Calculus	2-3	20-30
Linear Algebra	1-2	10-20
Abstract Algebra	1-2	10-20
Probability	1	10
Statistics	1	10
Geometry	1	10
Differential Equations	1	10
DPS Standard Categories	**Number of Questions**	**% of Assessment**
Number Systems and Algebra	3	30
Geometry and Measurement	1	10
Statistics and Probability	2	20
Calculus	3	30
Discrete Mathematics	1	10

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

Each Mathematics General Exam is written specifically for each graduating student in mathematics which includes secondary certification students with a teaching major in mathematics. The number of questions varies according to the students' specific program of study, but is generally 1 question per course taken. Exams are usually given in the last month of the students' last semester.

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Mathematics

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Assessment Data for 2005-2006

FALL Semester		SPRING Semester		SUMMER Semester	
Individual Student (no names needed)	Individual Score (Passing Points needed: ____)	Individual Student (no names needed)	Individual Score (Passing Points needed ____)	Individual Student (no names needed)	Individual Score (Passing Points needed: 70)
Student A		Student A		Student A	78
Student B		Student B		Student B	70
Student C		Student C		Student C	81
No Secondary Mathematics Certification students at Benchmark 5 during this semester	Overall Mean Score	No Secondary Mathematics Certification students at Benchmark 5 during this semester	Overall Mean Score		Overall Mean Score 78
	Secondary Cert. Mean Score		Secondary Cert. Mean Score		Secondary Cert. Mean Score 76

Assessment Data for 2006-2007

FALL Semester		SPRING Semester		SUMMER Semester	
Individual Student (no names needed)	Individual Score (Passing Points needed: ____)	Individual Student (no names needed)	Individual Score (Passing Points needed ____)	Individual Student (no names needed)	Individual Score (Passing Points needed ____)
Student A		Student A		Student A	
Student B		Student B		Student B	
Student C		Student C		Student C	
No Secondary Mathematics Certification students at Benchmark 5 during this semester	Overall Mean Score	No Secondary Mathematics Certification students at Benchmark 5 during this semester	Overall Mean Score	No Secondary Mathematics Certification students at Benchmark 5 during this semester	Overall Mean Score
	Secondary Cert. Mean Score		Secondary Cert. Mean Score		Secondary Cert. Mean Score

BACK

Content Knowledge

Field Experiences and Clinical Practice

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	*Components were not implemented until Spring 2007*
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

BACK

Content Knowledge
Program Completer Survey

Spring 2007

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

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.

BACK

Content Knowledge
Administrators Survey

Spring 2007

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

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.

BACK

Pedagogical Content Knowledge

Portfolio

Fall 2006

Secondary Portfolios

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

Spring 2007

Secondary Portfolios

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

BACK

Pedagogical Content Knowledge

Field Experiences and Clinical Practice

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 2006

Metastandard 3: Curriculum and Content Knowledge	Overall Mean	*Components were not implemented until Spring 2007*
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

BACK

Pedagogical Skills

Portfolio

Fall 2006

Secondary Portfolios

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

Spring 2007

Secondary Portfolios

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

BACK

Pedagogical Skills

Field Experiences and Clinical Practice

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

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

Metastandard 2: Diversity	Overall Mean	2.1 Knowledge of students' cultural identities	2.2 Valuing cultural diversity	2.3 Complex nature of diversity	2.4 Culturally sensitive techniques	2.5 Multiple perspectives	2.6 Understanding exceptionality
Benchmark 3	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)
Benchmark 5	3.9	4	4	4	3.9	3.9	3.9

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

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

BACK

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.

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

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

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

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

Metastandard #5 Assessment		
	Benchmark 3	**Benchmark 5**
5.2 Assessment of student learning	**2.7**	**3.4**
5.3 Using assessment to promote learning	**2.8**	**3.9**

Metastandard #7 Parent and Community Involvement		
	Benchmark 3	**Benchmark 5**
7.2 Student learning	**3.2**	**3.8**

BACK

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.

Metastandard #1 **Child Development and Learning**		
1.3 Multiple influences on development and behavior	• Set challenging and appropriate expectations of learning and performance for students.	3.8
1.4 Healthy learning environments for all children	• Understand how students' social, emotional, physical, and cognitive development influences learning.	4.3

Metastandard #2 **Diversity**		
2.3 Complex nature of diversity	• Understand how different students in the classroom are learning.	4.0
2.4 Culturally sensitive techniques	• Choose teaching strategies to meet different student needs.	3.8
2.5 Multiple perspectives		

Metastandard #3 **Curriculum and Content Knowledge**		
3.1 Knowledge of content	• Help all children achieve high academic standards.	3.3
3.2 Representation of content	• Develop a curriculum that builds on students' experiences, interests, and abilities.	4.0
3.3 Knowledge of students' misconceptions about content		
3.4 Materials and resources		
3.5 Planning and supporting challenging curricula		

Metastandard #4 Instruction		
4.2 Choice of instructional approaches	• Teach subject matter concepts, knowledge and skills in ways that enable students to learn.	3.8
4.3 Structure	• Maintain an orderly and purposeful learning environment to improve student learning and performance.	3.0
4.5 Approaches for classroom management and addressing challenging behavior		

Metastandard #5 Assessment		
5.2 Assessment of student learning	• Use a variety of assessment to determine student strengths and learning needs.	3.8
5.3 Using assessment to promote learning	• Assess and tracks student achievement in order to evaluate student learning.	4.0

Metastandard #7 Parent and Community Involvement		
7.2 Student learning	• Work with parents and families to better understand students and to support their learning.	4.0
	• Understand how factors in the students' environment outside of school may influence their life and learning.	3.8

BACK

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

BACK

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

Metastandard #1: Adolescent and Young Adult Development and Learning				
	Basic (Knowledge and Comprehension)	**Proficient (Application)**	**Mastery (Analysis and Synthesis)**	**Exemplary (Evaluation)**
Proficiency	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.
Objective	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.
Components				
1.1 Knowledge of major developmental theories	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.
1.2 Knowledge of behaviors	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.
1.3 Multiple influences on development and behavior	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.

1.4 Healthy learning environments for all early adolescents and young adults	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.

Metastandard #2: Diversity				
	Basic (Knowledge and Comprehension)	**Proficient (Application)**	**Mastery (Analysis and Synthesis)**	**Exemplary (Evaluation)**
Proficiency	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.
Objective	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.
Components				
2.1 Knowledge of students' cultural identities	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.
2.2 Valuing cultural diversity	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/her effectiveness of addressing the values, virtues, and ethical codes shared by various cultural groups and individuals.

2.3 Complex nature of diversity	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.
2.4 Culturally sensitive techniques	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.
2.5 Multiple perspectives	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.
2.6 Understanding exceptionality	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				
	Basic (Knowledge and Comprehension)	**Proficient (Application)**	**Mastery (Analysis and Synthesis)**	**Exemplary (Evaluation)**
Proficiency	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.
Objective	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.
Components				
3.1 Knowledge of content	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.
3.2 Representation of content	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.
3.3 Knowledge of students' misconceptions about content	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.
3.4 Materials and resources	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.

3.5 Planning and supporting challenging curricula	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.

Metastandard #4: Instruction				
	Basic (Knowledge and Comprehension)	**Proficient (Application)**	**Mastery (Analysis and Synthesis)**	**Exemplary (Evaluation)**
Proficiency	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.
Objective	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.
Components				
4.1 Core teaching approaches supported by research	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
4.2 Choice of instructional approaches	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.
4.3 Structure	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.

4.4 Approaches for classroom management and addressing challenging behavior	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.
4.5 Knowledge of the individual child in planning curriculum, instruction, and materials	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.
4.6 Ability to vary instructional approaches	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				
	Basic (Knowledge and Comprehension)	**Proficient (Application)**	**Mastery (Analysis and Synthesis)**	**Exemplary (Evaluation)**
Proficiency	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.
Objective	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, ad physically.
Components				
5.1 Assessment criteria and standards	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. .

5.2 Assessment of student learning	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)..
5.3 Using assessment to promote learning	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.
5.4 Using assessment to inform teaching	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.

Metastandard #6: Professionalism/Learning Communities				
	Basic (Knowledge and Comprehension)	**Proficient (Application)**	**Mastery (Analysis and Synthesis)**	**Exemplary (Evaluation)**
Proficiency	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.
Objective	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				
6.1 Reflection and self-analysis	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.
6.2 Decision making	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)
6.3 Collaboration with other professionals	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.
6.4 Participation in school, corporation, and other professional activities	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)**
Proficiency	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.
Objective	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				
7.1 Communicating	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.
7.2 Student learning	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.
7.3 Parent involvement	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 successof using a variety of strategies to bring parents/guardians and parental input into the classroom curriculum and instruction
7.4 Advocacy	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)
7.5 Collaboration with community	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
7.6 Unity and diversity in communities	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.

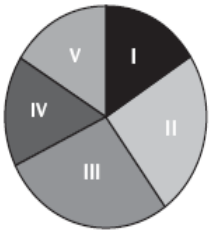
Nitko, A.J. & Brookhart, S.M. (2007). Educational Assessment of Students. New Jersey: Pearson/Merrill Prentice Hall.

BACK

Mathematics: Content Knowledge (0061)

Test at a Glance

Test Name	**Mathematics: Content Knowledge**
Test Code	**0061**
Time	**2 hours**
Number of Questions	**50**
Format	**Multiple-choice questions, graphing calculator required**



	Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
I.	Algebra and Number Theory	8	16%
II.	Measurement	3	6%
	Geometry	5	10%
	Trigonometry	4	8%
III.	Functions	8	16%
	Calculus	6	12%
IV.	Data Analysis and Statistics	5–6	10–12%
	Probability	2–3	4–6%
V.	Matrix Algebra	4–5	8–10%
	Discrete Mathematics	3–4	6–8%

Process Categories	
Mathematical Problem Solving Mathematical Reasoning and Proof Mathematical Connections Mathematical Representation Use of Technology	Distributed Across Content Categories

HEA - Title II
2005-2006 Academic Year
Mathematics

Institution Name	INDIANA UNIV KOKOMO
Institution Code	1337
State	Indiana
Number of Program Completers	4

		Indiana University Kokomo			**Statewide**		
Type of Assessment	***Assessment Code Number***	***Number Taking Assessment***	***Number Passing Assessment***	***Institutional Pass Rate***	***Number Taking Assessment***	***Number Passing Assessment***	***Statewide Pass Rate***
Academic Content Areas							
Mathematics: Content Knowledge	061	4	4	100%	189	184	97%

Indiana University Kokomo	
Score Data	
Mean	166
Median	165
Hi Score	190
Low Score	144
Passing	136

Change Document Fall 2006 – Fall 2009							
	Fall 06	Spring 07	Fall 07	Spring 08	Fall 08	Spring 09	Fall 09
Administrative Program Initiatives							
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		√	√				

Change Document Fall 2006 – Fall 2009							
	Fall 06	Spring 07	Fall 07	Spring 08	Fall 08	Spring 09	Fall 09
Data Aggregation, Digitization and Improvements							
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			√				

Change Document Fall 2006 – Fall 2009							
	Fall 06	Spring 07	Fall 07	Spring 08	Fall 08	Spring 09	Fall 09
Benchmark Requirement and Timeline							
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
e-Portfolio Program							
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
Metastandards Rubric Development							
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
Academic and Instructional Developments							
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 for HIGHER EDUCATION

March 13, 2007

President Adam Herbert
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

Stan Jones
Commissioner

cc: Charles Bantz
Robert Sandy
Barbara Bickelmeyer
JoAnne Bowen

101 W. Ohio St., Suite 550 Indianapolis, Indiana 46204-1971 http://www.che.state.in.us
p: [317] 464-4400 f: [317] 464-4410 Stanley G. Jones, Commissioner

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D. FACULTY SECTION

Teacher candidates in the Mathematics 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.

Mathematics

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 Develop.	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
Kristina Welsh	M.Ed.	Curriculum and Instruction, Elementary Education, Reading Education, Action Research	M457 Meth Teaching SH/JH/MS Mathematics (3)		7 years
Carl Widland	Ph.D.	Algebraic Geometric	M215 Calculus I M216 Calculus II M311 Calculus III M303 Linear Algebra for Undergraduates M360 Elements of Probability M366 Elements of Statistical Inference M403 Introduction to Modern Algebra I M347 Discrete Mathematics		½ year

Faculty Name	Highest Degree Attained	Area(s) of Specialization	Courses Taught in Program	Additional Responsibility in Program	Years of P-12 Experience
Mary Hansen	Ph.D.	Ordered Algebraic Structures	M215 Calculus I M216 Calculus II M311 Calculus III M303 Linear Algebra for Undergraduates M360 Elements of Probability M366 Elements of Statistical Inference M403 Introduction to Modern Algebra I M347 Discrete Mathematics		
Robin Symonds	Ph.D.	Ring Theory	M215 Calculus I M216 Calculus II M311 Calculus III M303 Linear Algebra for Undergraduates M360 Elements of Probability M366 Elements of Statistical Inference M403 Introduction to Modern Algebra I T336 Topics in Euclidean Geometry M347 Discrete Mathematics		

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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,

Dr. Suellen Reed
Superintendent of
Public Instruction

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