

Part II. Description of Curricular Change

1. Syllabus of Record

I. Catalog Description

MATH 153 Elements of Algebra

3c-01-3cr

Prerequisite: MATH 151

Explores some of the basic algebraic concepts including: the real number system, solving linear equations and inequalities with one and two variables. Emphasis will also be placed on studying the coordinate plane, exploring the slope of a line, graphing lines and writing equations of lines. Connections will be made with the teaching and learning of algebraic concepts in the elementary and middle schools.

II. Course Outcomes

Student will:

1. illustrate the different roles numbers and operations play. (*PDE Guidelines 11.B.2.a*) (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9*)
2. illustrate the structure of the real number system. (*PDE Guidelines 11.B.2.b*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9.7*)
3. develop a deep understanding of rational numbers and operations on rational numbers. (*PDE Guidelines 11.B.2.c*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9.1*)
4. make sense of large and small numbers and use scientific notation. (*PDE Guidelines 11.B.2.e*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9.6*)
5. represent physical situations symbolically, graph linear and quadratic equations and inequalities, and exhibit fluency working with symbols. (*PDE Guidelines 11.B.2.h.ii*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 10*)
6. prepare for and engage in a field experience that embodies a concrete and visual to abstract approach of teaching mathematics in the elementary/middle level grades. (*PDE Guidelines 11.B.1.c*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3, 3.1-3.5 NCTM 16*)
7. demonstrate a factual knowledge needed to have students understand a mathematical problem or phenomenon. (*PDE Guidelines 11.B.1.a*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 1*)
8. demonstrate appropriate uses of calculator and computer-based technologies on a regular and frequent basis. Technology is an important topic where explorations and demonstrations are integrated throughout the entire course where appropriate. (*PDE Guidelines 11.B.6.f*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 6*)

| Course Outcome | College Conceptual Framework / Danielson | INTASC Standard/P rinciple | NCATE /NCTM—Standards for Middle Level Mathematics Teachers | Course Assessment Measuring Outcome |
|----------------|--|----------------------------|---|---|
| 1 | 1 | 1, 4 | 2.3 9 | Tests, Projects, and Quizzes |
| 2 | 1 | 1, 4 | 2.3 9.7 | Tests, Projects, and Quizzes |
| 3 | 1 | 1, 4 | 2.3 9.1 | Tests, Projects, and Quizzes |
| 4 | 1 | 1, 4 | 2.3 9.6 | Tests, Projects, and Quizzes |
| 5 | 1 | 1, 4 | 2.3 10 | Key Assessment: Test Midterm |
| 6 | 1, 2, 3, 4a | 6-9 | 2.3, 3.1-3.5 16 | Practice Teaching Project |
| 7 | 1 | 1, 4 | 2.3 1 | Tests, Projects, and Quizzes |
| 8 | 1 | 1, 4 | 2.3 6 | Tests, Projects, and Quizzes |

III. Course Outline

- A. Concepts related to and methods of teaching the real number system, polynomials and rational expressions
(*Outcomes #1, #2, #3, #4, #8*) 12 academic hours
- a. Integers
 - b. Exponents and scientific notation
 - c. Evaluating variable expressions
 - d. Operations on polynomials
 - e. Factoring polynomials
 - f. Operations on rational and expressions
 - g. Complex rational expressions
 - h. Solving rational equations
 - i. Rational numbers as exponents
- B. Concepts related to and methods of teaching linear equations and inequalities (*Outcomes #5, #7, #8*) 12 academic hours
- a. Graphing lines—coordinate plane
 - b. Slope of a line
 - c. Forms for the equation of a line
 - d. Linear inequalities and their graphs
- C. Concepts related to and methods of teaching systems of linear equations (*Outcomes #5, #7, #8*) 6 academic hours
- a. Graphically
 - b. Algebraically
 - c. With tables and charts

- D. Concepts related to and methods of teaching non-linear equations
(*Outcomes #5, #7, #8*) 6 academic hours
 - a. Solving
 - b. Graphing

- E. Teaching a mathematics lesson (*Outcome #6*) 3 academic hours
 - a. Planning for developmental instruction.
 - b. Examining teacher resources and classroom textbooks.
 - c. Interviewing/Tutoring/Teaching middle level students a mathematics concept.

This syllabus covers 39 academic hours leaving 3 academic hours for testing and/or review. The final is an additional 2 academic hours.

IV. Evaluation Methods

Grades will be based upon homework and in-class assignments, lessons, quizzes, and exams.

| | |
|--|-----|
| Class work / participation / daily work | 30% |
| Presentations / projects / portfolios / journals | 20% |
| Practice Teaching Project | 20% |
| A requirement of this project is to engage middle school students in mathematics for a total of 3 hours. | |
| Midterm (<i>Key Assessment</i>) | 15% |
| Final | 15% |

The midterm is the key assessments and shall be required of all instructors.

V. Grading Scale

- A = 90% - 100 %
- B = 80% - 89%
- C = 70% - 79 %
- D = 60% - 69 %
- F < 60%

VI. Attendance Policy

The course attendance policy is consistent with the university policy.

VII. Required Textbook

Papick, I. J. (2004). *Algebra Connections: Mathematics for Middle School Teachers*. Upper Saddle River, NJ: Prentice Hall.

VIII. Special Course Requirement

None.

IX. Bibliography

- Bassarear, T. (2007). *Mathematics for Elementary School Teachers*. Boston: Houghton Mifflin.
- Beckmann, S. (2008). *Mathematics for elementary teachers*. New York: Pearson
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- Wickett, M. et al. (2002) *Lessons for Algebraic Thinking, Grades 3-5*. Sausalito, CA: Math Solutions Publications

2. Course Analysis Questionnaire

Section A: Details of the Course

A1 How does this course fit into the programs of the department? For what students is the course designed? (majors, students in other majors, liberal studies). Explain why this content cannot be incorporated into an existing course.

This course is one of the Middle Level Mathematics Track introductory courses for the Middle Level Grade 4-8 certification program. All students in this course should be seeking certification as a middle level teacher.

A2 Does this course require changes in the content of existing courses or requirements for a program? If catalog descriptions of other courses or department programs must be changed as a result of the adoption of this course, please submit as separate proposals all other changes in courses and/or program requirements.

This is a newly-developed course to satisfy the PDE requirements for middle level teachers.

A3 Has this course ever been offered at IUP on a trial basis (e.g. as a special topic) If so, explain the details of the offering (semester/year and number of students).

No.

A4 Is this course to be a dual-level course? If so, please note that the graduate approval occurs after the undergraduate.

This is not a dual-level course.

A5 If this course may be taken for variable credit, what criteria will be used to relate the credits to the learning experience of each student? Who will make this determination and by what procedures?

This is a three-credit course that cannot be taken for variable credit.

A6 Do other higher education institutions currently offer this course? If so, please list examples (institution, course title).

Other higher education institutions may soon be offering a similar math course to meet the PDE requirements for teacher certification, but not at this time.

A7 Is the content, or are the skills, of the proposed course recommended or required by a professional society, accrediting authority, law or other external agency? If so, please provide documentation.

The Pennsylvania Department of Education is changing the requirements for certification. This course would prepare teachers to assist learners in grades 4-8 with math skills.

Section B: Interdisciplinary Implications

B1 Will this course be taught by instructors from more than one department? If so, explain the teaching plan, its rationale, and how the team will adhere to the syllabus of record.

This course will be delivered by instructors from the Mathematics Department.

B2 What is the relationship between the content of this course and the content of courses offered by other departments? Summarize your discussions (with other departments) concerning the proposed changes and indicate how any conflicts have been resolved. Please attach relevant memoranda from these departments that clarify their attitudes toward the proposed change(s).

This course does not conflict with any other math methods or content course offered by any other department.

B3 Will this course be cross-listed with other departments? If so, please summarize the department representatives' discussions concerning the course and indicate how consistency will be maintained across departments.

This course will not be cross-listed with any other department. The course will only be taken by undergraduate students pursuing a teaching certification in Middle Level Grades 4-8.

Section C: Implementation

C1 Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty. What will be taught less frequently or in fewer sections to make this possible? Please specify how preparation and equated workload will be assigned for this course.

Faculty resources to teach this course are adequate.

Currently the Mathematics Department offers six Elementary Education “Mathematics Concentrate” courses per year (three per semester). Under the proposed Middle School Mathematics Certification program, students are required to take six of these concentrate courses, along with two new courses, MATH 153 and MATH 413, during their last five semesters of study (not including the student teaching semester). By offering four concentrate courses per year, along with MATH 153 and MATH 413 once per year, Middle School Certification students can meet their requirements, and so can our current M.Ed. in Elementary and Middle School students. This rotation plan should also ensure adequate enrollment in the concentrate courses. It is anticipated that there would be no more than 60 Middle School Mathematics Certification students at IUP at any given time, although if this number should increase significantly, additional resources would be required. This plan to substitute six concentrate courses per year with four concentrate courses plus the two new courses keeps the resources needed the same as we use now.

C2 What other resources will be needed to teach this course and how adequate are the current resources? If not adequate, what plans exist for achieving adequacy? Reply in terms of the following:

- *Space
- *Equipment
- *Laboratory Supplies and other Consumable Goods
- *Library Materials
- *Travel Funds

No other resources would be needed to teach this course.

C3 Are any of the resources for this course funded by a grant? If so, what provisions have been made to continue support for this course once the grant has expired? (Attach letters of support from Dean, Provost, etc.)

There are no grant resources allocated for this course.

C4 How frequently do you expect this course to be offered? Is this course particularly designed for or restricted to certain seasonal semesters?

It is possible for one section of this course to be offered each year.

C5 How many sections of this course do you anticipate offering in any single semester?

One section of the course may be offered in any one semester.

C6 How many students do you plan to accommodate in a section of this course? What is the justification for this planned number of students?

It is anticipated that there would be 10-20 students in one section of the course. For hands-on activities and other interactive teaching strategies, for presentations and field experiences, 20 is an ideal number.

C7 Does any professional society recommend enrollment limits or parameters for a course of this nature? If they do, please quote from the appropriate documents.

There is no professional society that limits the enrollment of this course.

C8 If this course is a distance education course, see the Implementation of Distance Education Agreement and the Undergraduate Distance Education Review Form in Appendix D and respond to the questions listed.

This course is not a distance-education course.

Section D: Miscellaneous

Include any additional information valuable to those reviewing this new course proposal.

Part III. Letters of Support or Acknowledgement

Professional Studies



Professional Studies in Education Department
303 Davis Hall
Indiana, Pennsylvania 15705
724-357-2400

March 30, 2009

To Whom It May Concern:

I am writing in reference to two proposed new courses (i.e., MATH 153 and MATH 413) in the Department of Mathematics that will be an integral part of the newly designed Middle Level certification and degree program, with specialization in Mathematics, in our department.

The Professional Studies in Education faculty has collaborated successfully during the past year to develop this program and we are very familiar with the courses and the proposed changes. The program will offer a new degree program in Middle Level Education with a specialization in Mathematics and certification to teach at the middle level (i.e., 4th Grade through 8th Grade). This program and the courses in it, including MATH 153 and MATH 413) have been developed in response to the teacher certification changes dictated by the Pennsylvania Department of Education. The proposed new program and these courses are necessary for IUUP to maintain its position as the pre-eminent preparation institution for new teachers in Pennsylvania.

The proposed new courses have the full and unqualified support of the Department of Professional Studies in Education, and we encourage all relevant entities (i.e., UWUCC and the University Senate) to approve the proposed revisions.

Please feel free to contact me if you have a need for additional information, or if you have any questions.

Sincerely,

George R. Bieger

George R. Bieger, Ph.D.
Professor and Acting Chairperson

| | | | | |
|------------------|------------------|--------------------|--------------------|---------------------|
| LSC Use Only No: | LSC Action-Date: | UWUCC USE Only No. | UWUCC Action-Date: | Senate Action Date: |
|------------------|------------------|--------------------|--------------------|---------------------|

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

| | |
|--|--|
| Contact Person <p align="center">John D. Baker</p> | Email Address <p align="center">jdbaker@iup.edu</p> |
| Proposing Department/Unit <p align="center">Mathematics</p> | Phone <p align="center">724-357-3795</p> |

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

| | | |
|---|--|---|
| 1. Course Proposals (check all that apply) <input checked="" type="checkbox"/> New Course <input type="checkbox"/> Course Prefix Change <input type="checkbox"/> Course Deletion <input type="checkbox"/> Course Revision <input type="checkbox"/> Course Number and/or Title Change <input type="checkbox"/> Catalog Description Change | | |
| | | MATH 153 Elements of Algebra |
| <i>Current Course prefix, number and full title</i> | | <i>Proposed course prefix, number and full title, if changing</i> |
| 2. Additional Course Designations: check if appropriate <input type="checkbox"/> This course is also proposed as a Liberal Studies Course. <input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African) <input type="checkbox"/> This course is also proposed as an Honors College Course. | | |
| 3. Program Proposals <input type="checkbox"/> New Degree Program <input type="checkbox"/> Program Title Change <input type="checkbox"/> Other <input type="checkbox"/> New Minor Program <input type="checkbox"/> New Track <input type="checkbox"/> Catalog Description Change <input type="checkbox"/> Program Revision | | |
| <i>Current program name</i> | | <i>Proposed program name, if changing</i> |
| 4. Approvals | | Date |
| Department Curriculum Committee Chair(s) | | |
| Department Chair(s) | | |
| College Curriculum Committee Chair | | |
| College Dean | | |
| Director of Liberal Studies * | | |
| Director of Honors College * | | |
| Provost * | | |
| Additional signatures as appropriate: (include title) | | |
| UWUCC Co-Chairs | | |

* where applicable

Part II. Description of Curricular Change

1. Syllabus of Record

I. Catalog Description

MATH 153 Elements of Algebra

3c-01-3cr

Prerequisite: MATH 151

Explores some of the basic algebraic concepts including: the real number system, solving linear equations and inequalities with one and two variables. Emphasis will also be placed on studying the coordinate plane, exploring the slope of a line, graphing lines and writing equations of lines. Connections will be made with the teaching and learning of algebraic concepts in the elementary and middle schools.

II. Course Outcomes

Student will:

1. illustrate the different roles numbers and operations play. (*PDE Guidelines 11.B.2.a*) (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9*)
2. illustrate the structure of the real number system. (*PDE Guidelines 11.B.2.b*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9.7*)
3. develop a deep understanding of rational numbers and operations on rational numbers. (*PDE Guidelines 11.B.2.c*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9.1*)
4. make sense of large and small numbers and use scientific notation. (*PDE Guidelines 11.B.2.e*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 9.6*)
5. represent physical situations symbolically, graph linear and quadratic equations and inequalities, and exhibit fluency working with symbols. (*PDE Guidelines 11.B.2.h.ii*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 10*)
6. prepare for and engage in a field experience that embodies a concrete and visual to abstract approach of teaching mathematics in the elementary/middle level grades. (*PDE Guidelines 11.B.1.c*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3, 3.1-3.5 NCTM 16*)
7. demonstrate a factual knowledge needed to have students understand a mathematical problem or phenomenon. (*PDE Guidelines 11.B.1.a*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 1*)
8. demonstrate appropriate uses of calculator and computer-based technologies on a regular and frequent basis. Technology is an important topic where explorations and demonstrations are integrated throughout the entire course where appropriate. (*PDE Guidelines 11.B.6.f*), (*INTASC Standard/Principle 1, 4*), (*NCATE / ACEI 2.3 NCTM 6*)

| Course Outcome | College Conceptual Framework / Danielson | INTASC Standard/Principle | NCATE /NCTM—Standards for Middle Level Mathematics Teachers | Course Assessment Measuring Outcome |
|----------------|--|---------------------------|---|---|
| 1 | 1 | 1, 4 | 2.3 9 | Tests, Projects, and Quizzes |
| 2 | 1 | 1, 4 | 2.3 9.7 | Tests, Projects, and Quizzes |
| 3 | 1 | 1, 4 | 2.3 9.1 | Tests, Projects, and Quizzes |
| 4 | 1 | 1, 4 | 2.3 9.6 | Tests, Projects, and Quizzes |
| 5 | 1 | 1, 4 | 2.3 10 | Key Assessment: Test Midterm |
| 6 | 1, 2, 3, 4a | 6-9 | 2.3, 3.1-3.5 16 | Practice Teaching Project |
| 7 | 1 | 1, 4 | 2.3 1 | Tests, Projects, and Quizzes |
| 8 | 1 | 1, 4 | 2.3 6 | Tests, Projects, and Quizzes |

III. Course Outline

- A. Concepts related to and methods of teaching the real number system, polynomials and rational expressions
(*Outcomes #1, #2, #3, #4, #8*) 12 academic hours
- a. Integers
 - b. Exponents and scientific notation
 - c. Evaluating variable expressions
 - d. Operations on polynomials
 - e. Factoring polynomials
 - f. Operations on rational and expressions
 - g. Complex rational expressions
 - h. Solving rational equations
 - i. Rational numbers as exponents
- B. Concepts related to and methods of teaching linear equations and inequalities (*Outcomes #5, #7, #8*) 12 academic hours
- a. Graphing lines—coordinate plane
 - b. Slope of a line
 - c. Forms for the equation of a line
 - d. Linear inequalities and their graphs
- C. Concepts related to and methods of teaching systems of linear equations (*Outcomes #5, #7, #8*) 6 academic hours
- a. Graphically
 - b. Algebraically
 - c. With tables and charts

- D. Concepts related to and methods of teaching non-linear equations
(*Outcomes #5, #7, #8*) 6 academic hours
- a. Solving
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- E. Teaching a mathematics lesson (*Outcome #6*) 3 academic hours
- a. Planning for developmental instruction.
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 - c. Interviewing/Tutoring/Teaching middle level students a mathematics concept.

This syllabus covers 39 academic hours leaving 3 academic hours for testing and/or review. The final is an additional 2 academic hours.

IV. Evaluation Methods

Grades will be based upon homework and in-class assignments, lessons, quizzes, and exams.

| | |
|--|-----|
| Class work / participation / daily work | 30% |
| Presentations / projects / portfolios / journals | 20% |
| Practice Teaching Project | 20% |
| A requirement of this project is to engage middle school students in mathematics for a total of 3 hours. | |
| Midterm (<i>Key Assessment</i>) | 15% |
| Final | 15% |

The midterm is the key assessments and shall be required of all instructors.

V. Grading Scale

- A = 90% - 100 %
- B = 80% - 89%
- C = 70% - 79 %
- D = 60% - 69 %
- F < 60%

VI. Attendance Policy

The course attendance policy is consistent with the university policy.

VII. Required Textbook

Papick, I. J. (2004). *Algebra Connections: Mathematics for Middle School Teachers*. Upper Saddle River, NJ: Prentice Hall.

VIII. Special Course Requirement

None.

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2. Course Analysis Questionnaire

Section A: Details of the Course

A1 How does this course fit into the programs of the department? For what students is the course designed? (majors, students in other majors, liberal studies). Explain why this content cannot be incorporated into an existing course.

This course is one of the Middle Level Mathematics Track introductory courses for the Middle Level Grade 4-8 certification program. All students in this course should be seeking certification as a middle level teacher.

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This is a newly-developed course to satisfy the PDE requirements for middle level teachers.

A3 Has this course ever been offered at IUP on a trial basis (e.g. as a special topic) If so, explain the details of the offering (semester/year and number of students).

No.

A4 Is this course to be a dual-level course? If so, please note that the graduate approval occurs after the undergraduate.

This is not a dual-level course.

A5 If this course may be taken for variable credit, what criteria will be used to relate the credits to the learning experience of each student? Who will make this determination and by what procedures?

This is a three-credit course that cannot be taken for variable credit.

A6 Do other higher education institutions currently offer this course? If so, please list examples (institution, course title).

Other higher education institutions may soon be offering a similar math course to meet the PDE requirements for teacher certification, but not at this time.

A7 Is the content, or are the skills, of the proposed course recommended or required by a professional society, accrediting authority, law or other external agency? If so, please provide documentation.

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Section B: Interdisciplinary Implications

B1 Will this course be taught by instructors from more than one department? If so, explain the teaching plan, its rationale, and how the team will adhere to the syllabus of record.

This course will be delivered by instructors from the Mathematics Department.

B2 What is the relationship between the content of this course and the content of courses offered by other departments? Summarize your discussions (with other departments) concerning the proposed changes and indicate how any conflicts have been resolved. Please attach relevant memoranda from these departments that clarify their attitudes toward the proposed change(s).

This course does not conflict with any other math methods or content course offered by any other department.

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Section C: Implementation

C1 Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty. What will be taught less frequently or in fewer sections to make this possible? Please specify how preparation and equated workload will be assigned for this course.

Faculty resources to teach this course are adequate.

Currently the Mathematics Department offers six Elementary Education “Mathematics Concentrate” courses per year (three per semester). Under the proposed Middle School Mathematics Certification program, students are required to take six of these concentrate courses, along with two new courses, MATH 153 and MATH 413, during their last five semesters of study (not including the student teaching semester). By offering four concentrate courses per year, along with MATH 153 and MATH 413 once per year, Middle School Certification students can meet their requirements, and so can our current M.Ed. in Elementary and Middle School students. This rotation plan should also ensure adequate enrollment in the concentrate courses. It is anticipated that there would be no more than 60 Middle School Mathematics Certification students at IUP at any given time, although if this number should increase significantly, additional resources would be required. This plan to substitute six concentrate courses per year with four concentrate courses plus the two new courses keeps the resources needed the same as we use now.

C2 What other resources will be needed to teach this course and how adequate are the current resources? If not adequate, what plans exist for achieving adequacy? Reply in terms of the following:

- *Space
- *Equipment
- *Laboratory Supplies and other Consumable Goods
- *Library Materials
- *Travel Funds

No other resources would be needed to teach this course.

C3 Are any of the resources for this course funded by a grant? If so, what provisions have been made to continue support for this course once the grant has expired? (Attach letters of support from Dean, Provost, etc.)

There are no grant resources allocated for this course.

C4 How frequently do you expect this course to be offered? Is this course particularly designed for or restricted to certain seasonal semesters?

It is possible for one section of this course to be offered each year.

C5 How many sections of this course do you anticipate offering in any single semester?

One section of the course may be offered in any one semester.

C6 How many students do you plan to accommodate in a section of this course? What is the justification for this planned number of students?

It is anticipated that there would be 10-20 students in one section of the course. For hands-on activities and other interactive teaching strategies, for presentations and field experiences, 20 is an ideal number.

C7 Does any professional society recommend enrollment limits or parameters for a course of this nature? If they do, please quote from the appropriate documents.

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C8 If this course is a distance education course, see the Implementation of Distance Education Agreement and the Undergraduate Distance Education Review Form in Appendix D and respond to the questions listed.

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Section D: Miscellaneous

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Part III. Letters of Support or Acknowledgement

Professional Studies



Professional Studies in Education Department
303 Davis Hall
Indiana, Pennsylvania 15705
724-357-2400

March 30, 2009

To Whom It May Concern:

I am writing in reference to two proposed new courses (i.e., MATH 153 and MATH 413) in the Department of Mathematics that will be an integral part of the newly designed Middle Level certification and degree program, with specialization in Mathematics, in our department.

The Professional Studies in Education faculty has collaborated successfully during the past year to develop this program and we are very familiar with the courses and the proposed changes. The program will offer a new degree program in Middle Level Education with a specialization in Mathematics and certification to teach at the middle level (i.e., 4th Grade through 8th Grade). This program and the courses in it, including MATH 153 and MATH 413) have been developed in response to the teacher certification changes dictated by the Pennsylvania Department of Education. The proposed new program and these courses are necessary for IUP to maintain its position as the pre-eminent preparation institution for new teachers in Pennsylvania.

The proposed new courses have the full and unqualified support of the Department of Professional Studies in Education, and we encourage all relevant entities (i.e., UWUCC and the University Senate) to approve the proposed revisions.

Please feel free to contact me if you have a need for additional information, or if you have any questions.

Sincerely,

George R. Bieger

George R. Bieger, Ph.D.
Professor and Acting Chairperson