

EDCI 425: FALL 2008
TEACHING MATHEMATICS IN THE SECONDARY SCHOOL
Thursdays 1:30 - 3:20 pm
BRNG B260

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Office Hours:

COURSE DESCRIPTION

This course is designed for students who are planning to be secondary mathematics teachers. The course content is organized around proficiencies for teaching secondary mathematics content, theories of teaching and learning mathematics, and organization and planning for classroom instruction.

COURSE GOALS

1. To develop lesson plans promoting students' development of conceptual and procedural understanding.
2. To develop understanding of student learning and development through analyzing students' thinking.
3. To develop understanding of curriculum in context through assessing students' work, mathematics problems, and/or texts.
4. To develop understanding of the scope and significance of secondary school mathematics through an examination of state and national standards and mathematics education research.
5. To develop professionally through the demonstration of professional attitudes and work habits as well as the identification of professional organizations and resources that are available locally and nationally.

REQUIRED MEMBERSHIPS

Student membership to National Council of Teachers of Mathematics (NCTM):

For information regarding a student e-membership and ability to apply online: <http://www.nctm.org/benefits-student.aspx>. Establishing yourself within this important organization is professionally beneficial and allows you to gain access to valuable resources. School administration likes their teachers to be connected to the professional organization in their content area. A student membership is half price and costs \$39 for a year and will allow you online access to their *Principles and Standards*. Additionally, you will be given online access *The Mathematics Teacher* (the journal for high school mathematics teachers). If you would like to purchase a paper copy of the *Principles and*

Standards or any other of their resources, your membership will give you a 20% discount.

Student membership to Indiana Council of Teachers of Mathematics (ICTM):

Affiliation with the state chapter of NCTM (in our case, ICTM) can also provide rich learning and collaborative possibilities. To apply for student membership, go to <http://www.indianamath.org/> and mail \$6 along with your contact information to the address provided. In addition, these memberships indicate to future potential employers that you take an active role in your professional development.

ADDITIONAL COURSE READINGS

Readings will be drawn from journal articles, book chapters, and other materials. Selected articles will be distributed electronically.

POINT DISTRIBUTION:

Assignment	Pts
Mathematics and Me	10
NCTM/ICTM	10
Mathematics Education History Timeline	10
Curriculum Analysis	10
Warm-up	10
Gate C I Draft	5
Gate C I Peer Review	5
Gate C I Final	20
Gate C II Draft	5
Gate C II Peer Review	5
Gate C II Final	30
Gate C III Draft	5
Gate C III Peer Review	5
Gate C III Final	20
Field Trip Questions	10
Philosophy of Teaching and Learning Mathematics	10
Course Reflection Paper	10
Journal Reflections for Field Experience	50
15 Hrs Field Experience, Teaching, and Verification	50
Class Participation	20
TOTAL	300

GRADING SCALE (based on new Krannert School of Management policy of +/- grading):

A+	97 - 100.0%
A	92 - 96.9%
A-	90 - 91.9%
B+	87 - 89.9%
B	82 - 86.9%
B-	80 - 81.9%
C+	77 - 79.9%
C	72 - 76.9%
C-	70 - 71.9%
D+	67 - 69.9%
D	62 - 66.9%
D-	60 - 61.9%
F	< 60%

COURSE REQUIREMENTS

PARTICIPATION

Active participation in class discussions and activities, demonstrations that course assignments have been thoroughly read, and thoroughly completed assignments are required.

FIELD EXPERIENCE: PARTICIPATION & REFLECTIONS

A total of 15 hours of field experience is required during this course.

Classroom Participation (50 pts):

10-15 hours of your field experience will fall into this category. These will be completed in a local secondary mathematics classroom to which you will be assigned based on your availability during the school day. You will make some observations of the teacher, assist with classroom activities, and then teach a minimum of one time. I strongly encourage you to teach and do as much as your teacher will allow, as it will make your transition into student teaching all the more easy. Your participation **MUST** be structured into *one visit per week or one visit every other week* until you have completed your hours. While you may stay as long as you like for each visit, one visit can count for a maximum of two hours of credit. Only by completing the Field Experience Verification Form will the participation requirement be fulfilled. Please begin the participation as soon as you are able to coordinate your visits with your assigned teacher. Be very appreciative of him/her for allowing you to come into their classroom!

Alternative Activities – You may get credit for up to 5 hours of participation with any combination of the alternate activities listed below. For *each activity* you need to provide documentation of participation.

- 1) Tutor
- 2) Attend Wabash College Teacher Research Workshop
- 3) Attend ICTM Conference
- 4) Assist with a Purdue Mathematics Outreach Activity
- 5) TA/SI experience in mathematics courses at Purdue University
- 6) Classroom observations in other high schools
- 7) Assist with middle school or high school math teams/clubs such as MATHCOUNTS
- 8) Propose your own activity related to math education (subject to instructor approval).

Reflections (50 pts): After each participation visit, a journal reflection is required on Blackboard, responding to the Field Experience Response Prompts (distributed in class). A minimum of ½ page is expected for each hour of the participation. For alternative activities (max of five hours) you need to contribute one reflection per activity that reflects on how your participation in the activity(s) helped you meet one or more of the course goals. For example, if you volunteer at the Alternative School you might address how your experiences help develop your understanding of students' learning in mathematics, supported with examples.

POLICIES

CAMPUS EMERGENCY

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Here are ways to get information about changes in *this* course: janewton@purdue.edu or 494-5679.

BEERING HALL EMERGENCY

Students are required to visit <http://www.education.purdue.edu/ODFD/resources.html> to review the response procedures for emergencies in Beering Hall. It is necessary that you review these directions within the first week of your Beering classes. If you have any questions see your instructor.

ADAPTIVE PROGRAMS

Students with disabilities must be registered with Adaptive Programs in the Office of the Dean of Students before classroom accommodations can be provided. If you are eligible for academic accommodations because you have a documented disability that will impact your work in this class, please schedule an appointment with me as soon as possible to discuss your needs.

ACADEMIC DISHONESTY

Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, *University Regulations*] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972]

ATTENDANCE

Your attendance to each class meeting is critical to the success of our learning community. You are expected to attend each class session, to arrive on time, and to stay for the entire class session. You should contact me as soon as you are aware that you will be unable to attend a class session. An unexcused absence results in a 5% reduction of the total possible points available for this course. Official documentation is required in order for an absence to be deemed as excused.

CELLULAR PHONES

Please turn off cell phones before entering the classroom. If you must leave your cell phone on, please put the cell phone on vibrate and take calls outside of class.

LATE ASSIGNMENTS

Assignments are due at the beginning of the class session unless otherwise noted. Assignments submitted late resulting from an excused absence will be accepted without penalty. A revised due date for these assignments should be negotiated with the instructor the day you return to class. Five percent per day late will be deducted from all other late assignments.

PROFESSIONALISM

You are expected to demonstrate professionalism. When conducting observations and making professional presentations in class, students are expected to dress in a professional manner. You will sign a professionalism agreement in class. The Professionalism Agreement can also be found at www.edci.purdue.edu/misc/Professionalism_Agreement.pdf

REVISIONS

An assignment may be deemed unsatisfactory, and consequently, you will be expected to revise or redo the assignment. Under such circumstances, you are expected to schedule an appointment with the instructor, immediately, to discuss the revision. Rewrites are due one week from the date of which the assignment is returned with a request for a resubmission. To help ensure that you meet the deadline for all requirements to student teach, all revised work must be submitted by 5:00 p.m. on December 10, 2008.

TASKSTREAM

TaskStream is a commercial electronic portfolio system for which you must purchase a license. A four-year license as well as a short-term license is available. You may purchase your license directly from TaskStream or from Purdue University. You will use TaskStream to submit your Gate assessment items. See section **GATE C ASSESSMENT** for more details. TaskStream can be found online at: <http://www.taskstream.com> You may also use TaskStream to compose lesson plans. You may need to customize the designs available in order to conform to the format required for this course.

Go to the TaskStream website and log-in to confirm that you have access to Gate C. If you do not, please contact Christian Mattix, e-Portfolio Coordinator, cmattix@purdue.edu. Also, if you are unfamiliar with TaskStream and would like a refresher training session, contact Christian Mattix, cmattix@purdue.edu.

WORK SUBMITTED

Unless otherwise noted, all assignments are to be submitted electronically before class on the due date. Five percent per day late will be deducted for work submitted late. Assignments should be double-spaced and use 12 point font. References should follow the APA (American Psychological Association, 5th edition) format. Each assignment should be proofread before submission. Rewrites are not granted to address errors related to proofing or grammar.

GATE C ASSESSMENT

The Gate C assessments connected with this course are requirements to proceed to student teaching. Note that you can pass this course, but not satisfy the requirements for Gate C assignments. These assignments, with corresponding rubrics, will be distributed during the first few weeks of the course. Resubmissions of unsatisfactory work are permitted and encouraged. Your Gate C assessment items are to be included as an artifact in your electronic portfolio (Task Stream).

Tentative Schedule

Date	Topic	Readings(s) Due	Assignment(s) Due
Aug 28	Course Introduction	-----	-----
Sep 4	<ul style="list-style-type: none"> • Overview of <i>PSSM</i> • Classroom Inquiry 	<ul style="list-style-type: none"> • <i>PSSM</i> Chapter 1, Chapter 2&3 (first page only) • Hubbard & Power (Ch 1), 2003 	Mathematics & Me
Sep 11	The Equity Principle	<ul style="list-style-type: none"> • <i>PSSM</i> Chapter 2 (Equity) • Robert (Bob) Moses Algebra Project 	NCTM/ICTM
Sep 18	The Curriculum Principle	<ul style="list-style-type: none"> • <i>PSSM</i> Chapter 2 (Curriculum) 	Curriculum Analysis
Sep 25	History of Mathematics Education in the U.S.	Research the History of Mathematics Education in the U.S.	Timeline
Oct 2	The Teaching Principle	<i>PSSM</i> Chapter 2 (Teaching)	Gate C I Draft
Oct 9	The Learning Principle	<i>PSSM</i> Chapter 2 (Learning)	Gate C I Peer Review
Oct 16	The Assessment Principle	<i>PSSM</i> Chapter 2 (Assessment)	Gate C I Final
Oct 23	<ul style="list-style-type: none"> • Geometry • Measurement • Data Analysis & Probability 	<i>PSSM</i> 9-12 (Geometry, Measurement, Data Analysis & Probability)	Gate C II Draft
Oct 30	<ul style="list-style-type: none"> • Number & Operations • Algebra 	<i>PSSM</i> 9-12 (Number & Operations, Algebra)	Gate C II Peer Review & 5 Reflections
Nov 6	<ul style="list-style-type: none"> • The Technology Principle - Geometry • Problem Solving 	<i>PSSM</i> Chapter 2, (Technology), 9-12 (Problem Solving)	Gate C II Final
Nov 13	<ul style="list-style-type: none"> • The Technology Principle - Statistics • Reasoning & Proof 	<i>PSSM</i> 9-12 (Reasoning & Proof)	Gate C III Draft
Nov 20	The Technology Principle - Algebra	-----	Gate C III Peer Review & Philosophy of Teaching and Learning Mathematics

Nov 27	Happy Thanksgiving!	-----	-----
Dec 4	Communication	<i>PSSM</i> 9-12 (Communication)	Gate C III Final & 5 Reflections
Dec 11	Connections	<i>PSSM</i> 9-12 (Connections)	Course Reflection Paper
Dec 18	Representations	<i>PSSM</i> 9-12 (Representations)	-----