MSUM candidates are becoming professionals who are KNOWLEDGEABLE Humanistic Reflective Creative
COLLEGE OF EDUCATION & HUMAN SERVICES
MINNESOTA STATE UNIVERSITY MOORHEAD

# Mathematics for Special Education
# Math 306
# Fall 2011 Syllabus

Meeting T & R 3:00 – 4:15 in MacLean 269

*Professor*: Tim Harms
*Office Phone:* 218-477-4016
*Office:* MacLean 375F
*Office hrs:* M – F 9:30 – 10:20,
M, W, F 10:20-11:20, T, R 2:00 – 2:50
Additional meetings available by appointment
*e-mail:* harms@mnstate.edu
*Web page:* www.mnstate.edu/harms

**Required Text:**

Text: Helping Children Learn Mathematics, Wiley Publications, 9th Edition, by Reys, Lindquist, Lambdin, Smith, 2009.

**Recommended Supplies:**

Three ring binder, pencil, & scientific calculator

**Course Description:**
Development of content and methods for teaching mathematics in special education setting. Open only to majors and minors in special education. This course does not substitute for Math 406. Prerequisite: Math 303 and 304 with a grade of C- or higher.

**Course Objectives:**

To provide a general background in the concepts and skills of elementary – secondary mathematics, and students will demonstrate various methods of teaching math in a meaningful way for those with disabilities.

"Teaching = Knowing + Planning + Doing + Reflecting" by Andrew Johnson

**Student Expectations:**

- Regular and active classroom participation is a must as your communication of mathematics is to be developed and assessed - Contact Dr. Harms if you are going to be absent
- Learn more mathematics and hopefully experience some enjoyment in the learning
- Display behaviors and attitudes suitable for a professional educator
- Cell phone are to be turned off during class, and are not allowed to be used during testing
- Students will act in an honest and trustworthy manner. See your Student Handbook

http://www.mnstate.edu/sthandbook/academic_info/academicpolicies.htm#academichonesty

Spending time reading the book, completing your guided notes, completing assigned homework, preparing for co-teaching, completing your professional resource binder, and studying for exams is meant to be a significant part of this course.

**Course Outline:**

Unit 1- School Mathematics in a Changing World, Fractions, Ratios, Proportions, Geometry and Measurement (Chapters 1, 12-13, 15-16) Exam 1 on **Sept. 27th**

Unit 2- Planning, Assessment, Number Sense, Algebraic Thinking (Chapters 3-4, 7, 14) Exam 2 on **Oct. 25th**

Unit 3- Place Value, Operations, Computational Tools & Algorithms (Chapter 8-11) Exam 3 on **Nov. 22nd**

Unit 4- Mathematics Learning and Problem Solving (Chapters 2, 5, 6, 17) **Dec. 14 at 3:00**

**Evaluation:**

- Administer at least 5 hours of Math screening assessments in area schools and discuss the ramifications of different student responses – 20 pts.
- Three unit tests 100 pts./exam
- Quizzes worth 10 to 15 pts. each
- Problems collected from the textbook assignments, handouts, and activities each 5 to 10 pts.
- Class participation for the entire class period including: in-class discussions and activities 4 pts./day
- Co-Teaching lesson from Unit 2 or 3 worth 25 pts.
- Guided Notes & solutions for Data Analysis, Statistics, and Probability (Chapter 17) you created 20 pts.
- Professional Resource Binder 100 pts.
- Final over Unit 4 on Dec. 14 at 3:00 - 100 pts.

**Attendance Policy:**

Late work will lose 50% of its value each weekday beyond its due date. No make-up on missed quizzes or tests if prior arrangements have not been made with Professor Harms. Extra credit will be available only as an additional part of the Professional Resource Binder and bonus problems on exams.

**Grading Scale:**

-98 A+; 97-93 A; 92-90 A-

89-88 B+; 87-83 B; 82-80 B-

79-78 C+; 77-73 C; 72-70 C-

69-68 D+; 67-63 D; 62-60 D-

59%- F

**Assistance Available:**

If you are having trouble please see Dr. Harms during office hours or make an appointment. The Math Department offers drop in tutoring M-F in MacLean 383 beginning Aug. 29th with hours posted http://www.mnstate.edu/math/tutoring.html

**Special Accommodations:**

"Students with disabilities who believe they may need an accommodation in this class are encouraged to contact Greg Toutges, Director of Disability Services at 477-4318 (Voice) or 1-800-627-3529 (MRS/TTY), Flora Frick 154 as soon as possible to ensure that accommodations are implemented in a timely fashion."

## CONCEPTUAL FRAMEWORK OF THE MSUM TEACHER EDUCATION UNIT

MSUM candidates are professionals who are knowledgeable, reflective, humanistic, and creative.

**Knowledgeable:** MSUM candidates display competence in their subject matter, built upon a strong grounding in liberal studies. MSUM candidates understand the principles of learning, assessment and technology. They understand and apply legal and ethical considerations to all aspects of their work. MSUM candidates are able to integrate theory and practice, and view learning as an active process. MSUM candidates demonstrate the ability to model connections between philosophical foundations and best practices in the field. As life-long learners, MSUM candidates engage in research and complex thinking. They design opportunities for others to seek knowledge and to understand themselves as members of the world community.

**Reflective:** MSUM candidates engage in thoughtful analysis of the meaning and significance of their actions, decisions, and results with regard to their work in order to assess progress in meeting this guiding principle. It is through this reflective process that candidates improve instruction, implement new ideas, abandon ineffective methodologies, and enhance learning outcomes for their students. MSUM candidates are skilled at analyzing their teaching from a variety of perspectives and identifying connections between teaching strategies and student learning. In addition, candidates utilize a variety of techniques to question their procedures and consider alternatives for instruction and student growth. MSUM candidates recognize learning, motivational, and developmental variables and relate those dimensions to their teaching practices. Finally, MSUM candidates bring a questioning spirit to received wisdom and conventional practice when needed.

**Humanistic:** MSUM candidates value the personal worth of each individual. This is based on a belief in people's potential and innate ability to develop to their fullest. MSUM candidates' actions are grounded in knowledge of different cultural and ethnic groups within the world community, and in knowledge of the influence of culture and history, ethnicity, language, gender and socio-economics on one's life. This knowledge base informs candidates' decision-making as they create environments that promote freedom, compassion, and success for all learners. MSUM candidates are fair-minded in their interactions with others, as well as sensitive to and accepting of individual differences. Further, MSUM candidates have an understanding of aesthetics and the diversity that is part of the human experience and will incorporate this knowledge into their work. MSUM candidates recognize and accommodate a variety of linguistic and nonlinguistic interpersonal skills in their actions with others. MSUM candidates foster resiliency in the students with whom they work and model these qualities in their own work.

**Creative:** MSUM candidates understand the powerful resources of the arts and sciences and use their knowledge of these areas to bring the best of their imaginative and creative acts into the classroom. MSUM candidates recognize the important role creativity plays in the design of instruction and classroom environment. They will, for themselves and for their students, meet new situations with resourcefulness, excitement and curiosity, with an investigative attitude, and with the ability to pose, seek and design solutions to problems. MSUM candidates are cognizant of the aesthetic elements of the world and draw on that knowledge to make curricular decisions designed to help students not only learn about aesthetics, but to also learn how to think about the world at large.