

## **MATH 200-01: Secondary Education 1: Mathematics**

ROBI 419: T/R: 8:30 – 11:30 (3 credits)

NOTE: Class times are subject to changes as needed based on Steve's student-teaching observation schedule and other obligations. You should have no other commitments from 8:00 – 2:00 other than other Block courses. Time is built into classtime for students to do work that would normally be done outside of class.

**Professor:** Steve Williams, Ph.D.

**E-mail:** swillia6@lhup.edu (don't forget the 6)

**Office:** ROBI 405, 570-484-2275

**Office Hours:** M: 2:30 – 3:00

T: 12:00 – 3:30

R: 12:00 – 1:00

(Note that it is sometimes necessary for me to change office hours to accommodate student-teachers.)

### **I. COURSE DESCRIPTION:**

Provides the first in a two-course sequence of methods of teaching mathematics in grades 7-12. This course includes field experiences and practice teaching. The concentration in this course is on the nature of mathematics, psychology of learning mathematics, teaching of mathematics, history of mathematics education, national and state standards, lesson planning, mathematics-oriented technology, and diversity issues. In addition to these, as the specific topics arise, this course helps students understand the mathematics concepts they will be teaching.

### **II. RESTRICTIONS UPON REGISTRATION:**

This course is open to any secondary mathematics education students with the prerequisites of MATH141, EDTF101, SPEC204, and PSYC103. Students should also be enrolled in at least MATH142 and MATH205 during the same semester as this course. Students must also have passed all Praxis I exams and have obtained all clearances.

### **III. PREREQUISITE KNOWLEDGE:**

This course begins your analysis and understanding of the teaching of mathematics in grades 7-12. It is assumed that you already have a fairly deep understanding of the content taught at this level; however, several course discussions will certainly increase your depth of this knowledge. You should also have a working knowledge of the foundations of education and adolescent psychology, as these topics will be interwoven with and applied to knowledge gained in this course. Furthermore, this course assumes that you have an open mind as to studying the teaching of mathematics in a different light than you may have experienced in the past.

### **IV. COURSE OBJECTIVES:**

Upon completion of this course, the students will be able to do the following:

1. explain the history and present state of mathematics education.
2. develop a philosophy of education in general and mathematics education in particular in order to make critical judgments about the focus and delivery of the mathematics curriculum.
3. examine and critique classroom lesson plans, techniques, and materials that will assist the development of an effective strategy for the future teaching of mathematics.
4. examine current research concerning curriculum, methodology, and psychology related to the teaching of mathematics.

5. reflect upon teaching mathematics as recommended by the NCTM Standards and current research.
6. determine and use modern technology appropriate to the mathematics classroom.
7. become an active participant in the public debate and political process in determining the role of mathematics in the public schools.
8. investigate issues surrounding teaching mathematics to diverse and multicultural audiences.
9. recognize his/her own teaching assumptions and techniques.
10. communicate mathematics in a clear and accurate manner compatible to classroom instruction.
11. develop lesson plans that contain the recommendations made by NCTM Standards and current research.
13. examine NCTM and PA standards for teaching mathematics.

## V. REQUIRED TEXTS/ACCOUNTS/CLEARANCES:

No physical textbook is required. We will be using laptops for internet resources. Therefore, your laptop should be brought to class every day, unless otherwise instructed.

National Council of Teachers of Mathematics (2000). Principles and Standards for School Mathematics. NCTM. ISBN: 0-87343-480-8. (You will obtain a free 90-day online subscription when needed.)

You will need to obtain a LiveText account near the end of this course. This is required in order to continue in the LHU teacher education programs. Some course assignments will be done in LiveText during this course and Methods 2, and your Developing Portfolio next year will need to be in it as well. Also, during student-teaching you use this program to create lesson plans and your Senior Portfolio. It costs about \$100, but it is a 5 year subscription.

You will need to gain your Clearances and TB test **before** you can enter the classrooms for your Field Experience component to this course. As these take some time to obtain, you need to have already applied for them. If you didn't, you will probably not get them in time and it may be in your best interest to postpone taking this Block until next year.

## VI. MATERIALS NEEDED:

Laptop, 3-ring binder for handouts/3-ring binder for graded work-portfolio (however you want to organize your work...see evaluation section below), TI-83/84 graphing calculator, looseleaf filler paper, pencils (all graded work must be in pencil or typed unless otherwise stated), a LiveText account.

## VII. MAJOR UNITS

1. What is mathematics?
2. What is mathematics education?
3. Standards in mathematics education
4. How do adolescents learn mathematics: The psychology of learning math
5. Technology in mathematics education
6. Preparing to teach mathematics
6. Field Experience
7. Microteaching

## **VIII. EVALUATION:**

You will be assessed on your understanding (knowledge) of mathematics and pedagogical concepts, ability to “do” (skill) in both real and simulated situations, and your disposition towards (participation) learning and discussing the material. This means that you will have a variety of assignments throughout the semester. In fact, some assignments have not even been planned yet, simply due to the nature of the course and the directions it may lead us. So be prepared to be an active participator in the entire evaluation process of your knowledge, skills, and dispositions.

I will be trying something new this semester with respect to determining your overall course grade. Rather than assigning made up point-values for your assignments in order to determine a letter grade, I am going to simply assign letter grades (rubrics will be given as needed), with general comments, to each assignment. Each letter grade will correspond to its numerical value (A = 4.0, A- = 3.7, B+ = 3.3, B = 3.0, B- = 2.7, etc.). I will then determine your average numerical grade to determine your course grade (the average will be rounded up). All assignments will be weighted the same, even though some will take more time than others (time spent does not equal importance).

It should be easy to keep track of your grade throughout the semester. Simply average your numerical scores received. I am not keeping a traditional spreadsheet of grades. Rather, I am keeping an individual packet of grades for each of you, with comments. My plan is to periodically meet with you to discuss how you are doing in the course.

Specific assignments are listed below; however, this may not be an exhaustive list. The details of each assignment will be given under separate cover.

1. Portfolio of work effort
2. Research Paper
3. Field Experience
4. In-class contributions (discussion points, insights, comments, etc.)
5. Online contributions (discussion groups, contributions to Google Docs, etc.)
6. Presentations in class (of various research results, assignments, technology demonstrations, etc.)
7. Projects
8. Papers
9. Lesson Plans
10. Attendance

## **IX. DISPOSITIONS:**

When you apply for Candidacy, you complete a self-evaluation disposition form. During your Professional Semester (Block 2), I complete this form on you. There is also a component to assessing your dispositions during the student-teaching semester. Due to these stages, I am always watching and assessing your dispositions. Therefore, you should be aware of the different elements of your dispositions that are under scrutiny. This document has been posted under the documents link on the course website. Please review this as you begin this stage of your college career.

## **X. HOMEWORK AND READINGS/RESEARCH:**

All assignments are expected to be completed, even if no grade is attached to them. This is part of your professional obligation. Failure to do this will affect your disposition marks. You should

always be keeping up with your reading and homework. Near daily activity is strongly advised, especially for the time period between Thursday and Tuesday.

You should immediately form a bond with 1 or 2 other people in this course. You should plan to meet a couple of times a week so you can discuss what is going on in class and can help each other out as needed. Please be comfortable talking to myself and each other.

#### **XI. ATTENDANCE/MAKE-UP WORK:**

LHUP does not require professors to provide makeup work for unexcused absences. Therefore, if you miss an assignment due to an unexcused absence, do not expect me to allow you to make it up; however, it never hurts to ask. Any late work will automatically receive the next lowest full-grade (from a B+ to a C+, from an A- to a B-, etc.), from what it could have, for each class period it is late. If you are absent on a day in which an assignment is given, you are responsible for knowing about it. If a surprise grade is given for an assignment or some other reason on a day you miss, you cannot make it up. Please see me concerning days you miss. Also, carefully read the class attendance policy in your student handbook.

#### **XII. ACADEMIC HONESTY:**

Please refer your student handbook so I do not have to deal with this issue during the semester. If you are caught being dishonest on any assignment, you will receive a grade of zero for that assignment.

#### **XIII. SPECIAL SERVICES:**

Any student requiring accommodations for taking notes or tests or anything else should make arrangements to discuss his or her needs with me as soon as possible. LHUP does not discriminate against those students requiring special services. Your disability must be verified by the Office for Disability Services, 104 Russell Hall. The contact person there is Dr. Reynol Junco at x2926 with email [rjunco@lhup.edu](mailto:rjunco@lhup.edu).

#### **XIV. OFFICE HOURS**

I enjoy helping my students inside and outside of class. My official office hours are posted on my door and are on the front of this syllabus. However, I will be on campus much more often than these times, so please feel free to call or stop by if you need help. If I am in my office and it is not office hours, I may be working on something else in which case I may ask you to wait a few minutes before I assist you. If I am in my office during office hours and am working on something else, I will stop what I am doing in order to help you. Email is probably the best way to contact me outside of my office. Please use me and your peers as your best resource for passing this course.

#### **XV. IMPORTANT NOTES**

This is a course within a “block” of courses. This means that you should be connecting the material in each course with the material in other courses. So think about this aspect of the “block” while you are in these courses. Use each of them to filter the information through from the other. Also, this is the time in your lives to begin acting as a professional.

#### **XVI. DISTRACTIONS AND CLASSROOM BEHAVIOR**

Try to remember that a cellphone ringing in the middle of class is a distraction to all those around you. Therefore, please turn them off before class begins. If you have an emergency situation that warrants having it on, please keep it on vibrating mode and leave the room when a call comes in. Also, do not listen to headphone music once the instructor enters the class. This shows me that

you are not a serious student and that you do not deserve to be in this class. The university has a detailed classroom behavior policy that can be found on the Provost's website at <http://www.lhup.edu/provost/home.htm>.

**XVII. FIELD DATES**

As of now, the dates you will be in the field are 2-23, 2-25, 3-2, 3-4, 3-16, and 3-18. We also have an all-day trip to a Harrisburg school scheduled for 3-25.

**XVIII. STANDARDS FOR SECONDARY EDUCATION MAJORS**

This course is required for your degree. This course, along with MATH 316 are designed to meet standards 1 – 8, and 16 of the NCTM standards, standards 1 – 10 of the INTASC standards, standards 1 – 3 of the ISTE standards, standards I.B, I.C, I.N, II, and III of the PDE standards, and standards 1, 3, and 4 of the NCATE standards.

**XIX. FINAL EXAM**

We will most likely meet twice during the finals week for classes. The final exam time period for this course allows for a time on Tuesday and Thursday. Further details will be discussed as the time nears.

**GOOD LUCK AND WORK HARD THIS SEMESTER**

**NOTE: Sign and return the next page of this document**

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I, \_\_\_\_\_(print your name) acknowledge that I have received/retrieved a copy of the syllabus for MATH200 and have had the chance to discuss any matters in the document with the professor. Signing this document does not imply that I agree with everything in the syllabus, just that I have received/retrieved a copy of it from the professor or his website.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date