I. Required Materials

Software
We will utilize various digital tools throughout the semester. Most of them are available freely online and I will post links to our Blackboard site. One piece of software popular for teachers of mathematics is Geometer’s Sketchpad. It is not required that you purchase this immediately but information on purchasing this online as a life time license or a one year license is linked below.

https://www.mheonline.com/program/view/2/16/2647/00000SPAD#program

We have this in Neill in Room 120, Room 3, as well as in Abelson 229. But you will not have unlimited access or easy access to printing (you’ll need to bring your own paper).

Textbooks

II. Course Description

This course is intended for students preparing to teach high school or middle school mathematics. It is my goal that you leave this course understanding that teaching mathematics involves not only mathematical understanding but also a willingness and ability to take a vested interest in student thinking. Additionally, I hope you leave understanding that teaching mathematics involves a communication component that is impacted by culture and gender, as well as familiarity with a variety of teaching methods to accommodate many different approaches to learning.

III. Course Objectives

Each of you will be able:

- To create and implement effective pedagogical strategies
- Incorporate collaborative learning and appropriate technology to teach mathematics for understanding
- Design a variety of assessment tools to assess understanding of mathematical concepts
- Connect mathematics to the real world
- Incorporate inclusive teaching strategies
- Acquire knowledge of the state learning goals, the Common Core State Mathematics Standards, and NCTM Principles and Standards. Knowledge of all standards will be demonstrated by:
  - demonstrating knowledge of the goals
  - demonstrating skill in developing curriculum, instruction, and assessment of students in grades 4-12, and
  - demonstrating the ability to have a positive impact on 4-12 students' learning of the Mathematics as required in the Standards

These shall all be considered when writing lessons and activities.

III. Tentative Schedule

The following themes and topics will be covered tentatively in this order. However, if we need to adapt the length of time devoted to a topic we will.

- Week 1 - (8/21 – 8/25): Introduction to the Course and Active Learning
- Week 2 - (8/28 – 9/1): Task Analysis and Growth vs. Fixed Mindset
- Week 3 - (9/4 – 9/8): Learning Styles (No class Monday)
- Week 4 - (9/11 – 9/15): Topics from Algebra
- Week 5 – (9/18 – 9/22): Topics from Algebra
- Week 6 – (9/25 – 9/29): Topics from Geometry
- Week 7 – (10/2 – 10/6): Topics from Statistics & Probability
- Week 8 – (10/9 – 10/13): Topics from Statistics & Probability
- Week 9 – (10/16 – 10/20): Professional Development Presentations
- Week 10 – (10/23 – 10/27): Student Centered Teaching and Learning Design
- Week 11 – (10/30 – 11/3): Student Centered Teaching and Learning Design
• Week 12 – (11/6 – 11/10): Student Centered Teaching and Learning Design (No Class Friday)
• Week 13 – (11/13 – 11/17): Formative Assessment
• Week 14 – (11/20 – 11/24): Fall Break – No Class
• Week 15 – (11/27 – 12/1): Using Digital Technology
• Week 16 – (12/4 – 12/8): Using Digital Technology

IV. Course Requirements

Final Project/Portfolio
This will constitute a lasting collection of teaching strategies, resources, lesson plans, etc. This is intended to be a contribution to your mathematics teaching file. It should be carefully organized into sections. Any materials that you have created should be kept electronically as well as in hard copy form. Your portfolio may be reviewed 1-3 times during the semester by 15-20 minutes appointments with Dr. Hall upon request. The last review of your portfolio occurs in writing or at an exit interview with Dr. Hall during finals week. You will receive ongoing written and verbal feedback during the semester on various assignments, this will allow you to continuously add to the depth and improve the quality of your portfolio. The final grade you earn will depend on your individual progress in improving your understanding and demonstrating both mathematical and pedagogical understanding. If you would like to discuss your progress please feel free to come to office hours, since it is hard to grade "progress" before the final projects are completed.

Journal Writing
We will do a variety of reflective writing in journals at various times during the semester. Sometimes the journal entries will be done electronically, sometimes they will be done on paper. Some journal entries will be completed during class, others outside of class. These should be thoughtful reflections to my prompt(s). Occasionally, you will be able to write about wherever your own concerns or excitements take you.

Professional Development
This entails attending the Northwest Math Conference and presenting a short lesson for Math-a-Rama. This is a meeting of about 500-1500 teachers and math educators held each October in Oregon, Washington, or British Columbia on a rotating basis. This fall's conference is in Portland, OR on October 12-14, 2017. Information about the conference is available at the conference website: http://www.northwestmathconf.org/NWMC2017/

I hope most of you will plan to attend. We are attempting to obtain funding for transportation and hotel but with the budget cuts we may not have any funding. Preservice Teachers of Mathematics (PreToM) will be attempting to obtain a grant to send some of their members as well. We have been awarded a special registration cost that is lower that other students as PreToM is an active participant with the Washington State Math Council. For this portion of your grade you will have to write brief summaries of talks and workshops attended as well as present a short lesson to participating teachers. Further details will be provided at a later date.
Alternative Professional Development
For those who cannot attend the conference in Portland, you will have a research paper that you will write and a short PowerPoint presentation. Details will be provided separately.

Practice Teaching
Inland Northwest Math Experience [IN ME]: It’s In Me, Is It In You? We will conduct the 14th Annual INME for two days in early November: one day for high school kids and one day for middle school kids. You will design activities allowing students to discover mathematics with a hands-on focus. As a class we will plan, organize and create the activities to be done. Each of you will commit to co-facilitate four sessions (at least one for each day). You need to attend one lunch and help set up or pack up as well. More details will follow.

V. Course Prerequisites
Certified Mathematics Major, currently in or already completed Math 301 with a grade of C or better, and the intention of becoming a secondary mathematics teacher.

VI. Course Links
Office of Superintendent of Public Instruction WA  http://www.k12.wa.us/
Common Core State Standards  http://www.corestandards.org/
Washington State Mathematics Council  http://www.washmath.org/
National Council of Teachers of Mathematics  http://www.nctm.org

VII. Grading Policy
No late work accepted without prior permission.
No make-ups on in-class activities without explicit permission.

Grade Breakdown
A  94 – 100
A–  90 – 93
B+  87 – 89
B   84 – 86
B–  80 – 83
C+  77 – 79
C*  74 – 76
C–  70 – 73
D   60 – 69

*minimum grade to pass
Break Down of Percentages

Attendance and Participation --------------------------------------- 10%
HW and In-Class Written Work ------------------------------------- 10%
Final Project/Portfolio -------------------------------------------- 45%
Journal Writing --------------------------------------------------- 5%
Professional Development and Reflections OR Presentation -- 15%
Practice Teaching and Reflections [IN ME] ---------------------- 15%

Rubrics will be provided with major assessments. Work outside of class will vary week-to-week. It may be particularly heavy as we prepare for IN ME and the NW Mathematics Conference but lighter at other times in the semester. On average, you should plan to spend at least 2-3 hours working outside of class per week.

VIII. Attendance Policy

Attendance is required and valued. There are many reasons each class is important to attend.

One reason is to allow you to contribute your ideas in discussions and to benefit from the comments of the instructor and your classmates. You will also experience learning in settings that model strategies we discuss. If you cannot make a class (because of illness or another understandable reason), please inform Dr. Hall in advance. Not all in-class work can be made-up, due to the discussions. However, it is your responsibility to find out what you missed and whether there is work you can make up and what homework assignments you need to complete.

Do not come to class if you are sick. You will be allowed two excused absences due to illness. However, if you are out sick and work is due, you should submit it electronically via an email attachment or to Blackboard.

IX. Academic Integrity

I encourage you to work with classmates on assignments. However, each student must turn in original work. No copying will be accepted. Students who violate WSU’s Standards of Conduct for Students will receive an F as a final grade in this course, will not have the option to withdraw from the course and will be reported to the Office of the Dean of Students. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that you read and understand these definitions:
http://www.conduct.wsu.edu/Content/Documents/conduct/09-10%conduct%20booklet.pdf

WSU Statement on Academic Integrity

Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU’s Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -
404) will fail the course and will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct.

Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010. If you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding.

If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at conduct.wsu.edu.

X. Disability Policy

Students with Disabilities: Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center [Pullman] or Disability Services at Washington Building 217 (509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center or Disability Services. For more information contact a Disability Specialist on your home campus.

XI. Miscellaneous

Respect
I expect you to treat each other and myself with courtesy and respect. This includes but is not limited to:

- Coming to class prepared to listen and contribute. No cell phone use during class (unless directed otherwise), no browsing the computer, no newspapers, etc. Your attention is on the people in the room. Violations will impact your participation grade.
- Work is turned in on time. If work is due at the beginning of class, you should not be working on it as class starts, it should be ready to turn in.
- For group tasks, do what you have committed to do on time.
- Work hard and have fun.

Classroom Safety Statement
Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the “Alert, Assess, Act,” protocol for all types of emergencies and the “Run, Hide, Fight” response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able).
Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI’s Run, Hide, Fight video and visit the WSU safety portal.