

**Math 499/599: Algebraic Problem Solving for Middle School****Teachers**

MTWR 10:30am – 1:00 pm, AA 104

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AA 201

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## Required Materials:

- There is no text book for this class. You will be given a lot of course materials and may find it useful to keep a binder to help you stay organized.

## Course Goals:

- Develop algebraic thinking skills and problem solving methods
- Write rich word problems for middle school students focusing on algebraic problem solving
- Use and develop rubrics as a learning and assessment tool

## Course Components:

- Attendance, group participation and presentations
- Homework problems
- Journal readings and reflections
- Portfolio problems
- Exams
- Lesson Plan

Your course grade will be based on the following:

	Math 499	Math 599
Attendance, group participation, presentations	5%	5%
Homework and Journal assignments	25%	25%
Portfolio Problems	25%	25%
Exams	15% each x 2 = 30%	10% each x 2 = 20%
Take home final	N/A	10%
Lesson Plan and presentation	15%	15%

**Attendance, group participation and presentations:** This class will be focused on algebraic problem solving in a cooperative learning group environment. Your participation is vital to your success and the learning experience of others. You will be required to present various work to the class including homework, portfolio problems, journal discussions and in-class work. Regular attendance is required. You may miss one class with an *excused* absence (at my discretion; requires documentation – this is not a free pass to miss a day). Your first missed class after this or with an unexcused absence will result in a reduction of your final course average by 3 points; the second will result in a further 2 point reduction.

**Homework problems:** Homework problems (other than journal readings and portfolio problems) will be assigned on a regular basis. Homework is due at the beginning of class, generally the next class day after it is assigned. Clear, quality write-ups including all details, work and written explanations of solution paths are expected. Problems will be graded using the Oregon State Mathematics Problem Solving Official Scoring Guide. Late homework will NOT be accepted, the lowest homework grade will be dropped. Math 599 students will be required to do additional homework problems.

**Journal assignments:** You will be given two journal articles to read. For each article you are to write a short, one-page reflection on the article. In addition you will be required to do a literature search and find journal articles related to algebra and problem solving in the classroom (two articles for students in Math 599, one for Math 499). More details will be provided in a handout.

**Portfolio problems:** As we learn various approaches and key moments in algebraic thinking and problem solving you will be asked to write up problems appropriate for middle school students illustrating these ideas. You will be asked to share some of your portfolio problems with the class. Late portfolio problems will not be accepted. No portfolio problems will be dropped. Math 599 students must complete four portfolio problems and Math 499 students will complete three. More details will be provided in a handout.

**Exams:** You will be given 2 one-hour exams. Exam dates are Monday 6/30 and Monday 7/7. The second exam will be a group exam. Exams will be taken during the first hour of class. Math 599 students will also be required to complete a take home final (individual) exam.

**Lesson Plan:** You will be required to complete one lesson plan for an activity or extended project for middle school students. The lesson plan should develop algebraic thinking and problem solving skills. On Thursday 7/3, you will present an outline of your plan to your group for discussion and feedback. On the last day of class, you will be required to present your lesson to the class.

Standard Grading Scale for this course:

<b>% Range</b>	<b>Grade</b>	<b>% Range</b>	<b>Grade</b>	<b>% Range</b>	<b>Grade</b>
93 – 100	A	80 – 82	B-	60 – 69	D
90 – 92	A-	77 – 79	C+	Below 60	F
87 – 89	B+	73 – 76	C		
83 – 86	B	70 – 72	C-		

### **APPROPRIATE CLASSROOM BEHAVIOR**

You are ultimately responsible for your own attendance and performance. Proscribed Conduct for all students is described in the University Catalog. In particular for this course any student found cheating on an exam or copying from another student's exam paper will receive a zero score on that exam.

### **LEARNING DISABILITIES**

If you have a documented learning disability, please talk to me during the first few days of class, I will be more than happy to accommodate you in any way that I can. If you have a documented disability which requires any academic accommodations, you must go to the Office of Disability Services (ODS) for appropriate coordination of your accommodations. You can drop by APSC 405 or contact ODS at (503) 838-8250 (V,TTY) to schedule an appointment.

### **INCOMPLETE POLICY**

An Incomplete can only be granted for a student who is passing a class and has a documented emergency that prevents them from completing the course.