MAT 331  MATHEMATICS THROUGH PROBLEM SOLVING

INSTRUCTOR: Dr. Stella Wear  Office: Walters 270D  Phone: 846-4512
Email: swear@deltastate.edu

OFFICE HOURS:  
- Monday/Wednesday: 10 – 11; 2 – 4
- Tuesday/Thursday: 9:15 – 10:45
- Friday: 10 – 11
Other times by appointment.

MY CLASS TIMES:  
- Monday/Wednesday/Friday: 8 – 8:50; 11 – 11:50
- Tuesday/Thursday: 8 – 9:15
- Monday only: 6 – 8:30

Course Designation
Prerequisite: MAT 131. 3 credit hours.

Text

General Objectives
This course is more than a mathematics content course; content-specific methods will be considered. The course is designed to provide the prospective teacher, who has knowledge of the content of elementary school mathematics, with strategies for teaching mathematics. The National Council of Teachers of Mathematics document, Curriculum and Evaluation Standards for School Mathematics, lists five general goals for all students. All students will (1) learn to value mathematics, (2) become confident in their ability to do mathematics, (3) become mathematical problem solvers, (4) learn to communicate mathematically, and (5) learn to reason mathematically. The NCTM document, Principles and Standards for School Mathematics that was released in April, 2000, addresses six principles for school mathematics: equity, curriculum, teaching, learning, assessment, and technology. These are also goals and principles for the students in this class. Additionally, goals of this course include the following: students will develop proficiency in modeling mathematical concepts using a variety of concrete materials, apply critical judgment to resources for the purpose of investigating materials and strategies, compare traditional approaches to teaching and learning mathematics to current research on how children learn, use technology appropriately in teaching and learning mathematics for elementary school, and compare national standards to the Mississippi Curriculum Framework for mathematics. Specific course objectives and the DSU College of Education conceptual framework are available on the mathematics department web page.

Content To Be Considered
- Numeration and number sense
- Operations on whole numbers, fractions, decimals, including meanings, algorithms and diagnosis of computational errors
- Mental computation and estimation
- Patterns and relationships
- Problem Solving
- National and state standards for teaching mathematics

Presentation Methods
- Lecture/discussion
- Small groups
- Laboratory activities
- Demonstrations

Activities and Requirements
- Arriving on time for class.
- Passing required skills test at the 80% or better level.
- Full participation in class discussions and in-class activities.
- Performance assessments.
- Written examinations (2 tests and 1 final examination).
- Calculator for outside assignments.
- Class demonstration (a carefully planned presentation focused on content and teaching strategies).
- Demonstration of understanding of readings.
Text and video reflections.
Technology connections.
Literature connection.
Notebook, 3 ring about 1 ½ in. with plenty of loose-leaf notebook paper and dividers.
Assignments must be turned in to the instructor in a timely manner. If you have an_excused absence, you may turn your work in on or before the next scheduled class meeting. If absence was an unexcused absence, the grade will be lowered 10% per class day that it is late.
Scheduled tests will be announced at least one week in advance. Only those presenting a written excuse, acceptable by the university, will be able to make up tests. Failure to provide an acceptable excuse will result in not being able to take the make-up and therefore, a zero.
Students are encouraged to work together on assignments unless specific directions are given that prohibit such collaboration.
Students are responsible for the costs of printing papers if “pay for print” labs are used.

Evaluation and Grading
The grading scale used in this course is the following percentage of total points:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100%-94%</td>
</tr>
<tr>
<td>B</td>
<td>93%-84%</td>
</tr>
<tr>
<td>C</td>
<td>83%-74%</td>
</tr>
<tr>
<td>D</td>
<td>73%-65%</td>
</tr>
<tr>
<td>F</td>
<td>Below 65%</td>
</tr>
</tbody>
</table>

Test I 20%
Test II 20%
Presentations, demonstrations, literature connection, homework, and writings 30%
Class participation 10%
Final Exam 20%

Cheating on tests or plagiarism on out-of-class work, etc. will result in serious academic penalty, including, but not limited to, a zero on the work in question. If an emergency arises that requires you to leave the room during a testing period, the instructor must grant permission or the test will be graded on the basis of the work completed at the time you leave.

Everything you turn in should be your best work. There is no excuse for spelling errors, grammatical errors, etc. in out-of-class work where you have time to check, re-check, and have someone else read your material, if necessary. You are going to be a teacher. This means something very special to me in terms of how much you have to demand of yourself if you ever intend to demand excellence of your students. You are doing each of the required activities to learn something important about teaching and learning mathematics. You are not doing any of them just to fulfill a requirement. Our children deserve the very best!

Attendance
Class attendance is determined by University policy. You are to arrive on time for the class and remain in the class the entire time. You may not exceed 10 (MWF), 7 (T/R) absences for the semester. (I think these absences are too many!) If you exceed this number, a grade of "F" will be assigned as the final grade in this course. Since class time will be spent learning together and modeling lesson development and activities appropriate for problem-centered learning, punctual attendance is necessary. You are responsible for all things we do in class. If you are absent, it is your responsibility to understand what you missed. This is very important. Many of the in-class activities that contribute to course understanding are very difficult to make up. This is why it is so important that you do not miss class. Participation points are awarded for each class. If your absence was unexcused, you will not receive these points – another important reason to come to class.

If a student has a disability that qualifies under the Americans with Disabilities Act and requires accommodation, he/she should contact the Academic Support Lab for information on appropriate policies and procedures.

Some Dates
Students who remain in the course after September 18 and who elect to drop the course will receive a grade of W if passing or F if failing the course at the time of the drop. A drop is not effective and complete until the drop slip has been turned in to the Registrar’s Office. No course on campus may be dropped after November 9.
Final Exam: Dec. 5, 8:00 for T/R, Dec. 6, 3:00 for M/W/F.