Topics in Mathematics for the Secondary Teacher

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Course Description

5304 Topics in Mathematics for the Secondary Teacher. (3-0) A study of the current trends and topics found in the secondary school mathematics curriculum with the goal of improving the mathematical background of the secondary teacher. Course content will be flexible and topics will be selected on the basis of student needs and interests. Cannot be used on degree plan for M.S. degree. Prerequisite: A grade of C in Mathematics 2472.

Course Goals

• Understand the differences in learning styles and characteristics of students in order to plan effective instructional materials.
• Understand the thinking that develops habits of the mind in solving geometry problems
• Be able to use technology effectively for instruction.
• Understand the role of problem solving in the classroom.
• Understand the importance of making conjectures and proving the conjectures.
• Understand the process necessary for students to transition from algorithmic to algebraic thinking.
• Be able to use statistics to support or refute conjectures.
• Experience the use of mathematics in science.

Course Materials

Software:

• Geometer's Sketchpad (GSP)

You can buy a non-expiring license or a student version for 1 year.

Use the URL below to see the options for a non-expiring license or a student version of sketchpad. http://www.keypress.com/x24119.xml

Textbooks


Assessments, Assignments, and Grading

Guidelines for Reflection Papers

Papers should be about 1-2 pages, double spaced, with 10-point Arial font.

The paper should be your analysis or interpretation of what you read. Any quotes from a source should be noted in the paper. Direct quotes from a source should be rarely used and only when they reference a person’s idea that needs to be expressed in that exact way or in the person’s exact words.

Grading Rubric

All papers should be free of incorrect spellings and should use appropriate grammar and sentence structure.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>A</td>
<td>The paper addresses the subject with accurate information, is well written and organized and is free of spelling and grammatical errors. All quotations are properly noted.</td>
</tr>
<tr>
<td>B</td>
<td>The paper has accurate information and addresses the subject, but it may be missing some important information. All quotations are properly noted. There may be some spelling and grammatical errors.</td>
</tr>
<tr>
<td>C</td>
<td>The paper has some accurate information, but does not address the subject of the paper clearly enough. There may be spelling and grammatical errors or lack of works cited. There may be quotes that are not properly noted.</td>
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<tr>
<td>D</td>
<td>The paper misses the point of the topic and is incomplete. There may be spelling and grammatical errors or lack of works cited. There may be quotes that are not properly noted or material may be copied from a source.</td>
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Submitting Assignments

Assignments are included in each lesson with instructions on how to submit them. Students are not allowed to turn in the assignments for more than one lesson per week.

Final Project:

Choose a unit of study in mathematics that would encompass at least a week’s time in a classroom that meets 50 minutes five days a week. Create materials and activities to use in the classroom with the students that would meet each of the Learning Styles, Multiple Intelligences and Right Brain/Left Brain characteristics with some activity during the week. Submit the materials and a summary of how they are appropriate for the different learning styles and intelligences. List the intended audience and the TEKS for which the materials are appropriate.
Exams

There is one exam for this course at the end of the course work. See how to arrange an exam in the Correspondence Course Information in Course Content on the TRACS site. Students are required to score 70 percent or better on the final exam in order to pass the course.

Grading – Your final grade will be computed using the following percentages.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Final Exam</td>
<td>50%</td>
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<tr>
<td>Assignments</td>
<td>25%</td>
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<tr>
<td>Reflection Papers</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Communication Policy

If you have a question about course content email me using the Mail tool in TRACS. Do not hesitate to send me an email if we need to talk so we can agree on a convenient time for a phone call or a meeting in my office.

Generally I will respond to emails within two days of receiving them.

Please indicate the course number (5304) somewhere in the subject line of your email so I will know to attend to it quickly.

Texas State Honor Code and Academic Integrity Policy

Learning and teaching take place best in an atmosphere of intellectual fair-minded openness. All members of the academic community are responsible for supporting freedom and openness through rigorous personal standards of honesty and fairness. Plagiarism and other forms of academic dishonesty undermine the very purpose of Texas State and diminish the value of an education. Specific sanctions for academic dishonesty are outlined in, Attachment I of UPPS 07.10.01.

Students with Disabilities

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me as soon as possible. You will be asked to provide documentation from the Office of Disability Services. Failure to contact me in a timely manner may delay your accommodations.