Syllabus

MTH 305: Functions and Calculus for Elementary and Middle School Teachers

Spring 2012 MW 8:30 - 9:50 am C208 Wells Hall

Department of Mathematics
Michigan State University

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MTuW 10:00 – 11:00 am
or by appointment.

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http://mathdata.msu.edu/CP/RW/S305_001.html

Textbooks:

- Additional electronic or paper resources will be provided as needed.

Course Content: The main goal of this course is to deepen your understanding of real numbers, functions and calculus and how they are related to the mathematics taught in contemporary elementary and middle schools. The five main topics covered are:
- Rational and Real numbers; Sequences and Series; Functions; Differentiation; Integration.
- Definitions, proofs, precision of language, accurate representations and connections within mathematics and between mathematics and other subjects as applied to teaching at upper elementary and middle school are emphasized.

Prerequisites: Successful completion of MTH 304; admission to the Teacher Education elementary certification program with a major or minor in Mathematics.

Attendance: Attendance is mandatory and will be taken. Classes will be a mix of lecture, problem solving done individually or in small groups and whole class discussion. You are expected to take notes, participate in class activities and to ask questions about what you do not understand.

Assessment: This is the second time this course is being taught, and it is under development. Tentatively, there will be two 1–hour tests (Wednesday 2/08 and Monday 3/26) all given during the lecture hours, 5 quizzes (the lowest score will be dropped) and 10 homework (the two lowest scores will be dropped; furthermore in each homework only selected homework problems will be graded) plus two papers (one paper has to be done individually and the other one as a group; the latter has to be presented in class to the other students) to be handed in and graded. Altogether these count for about 600 points. Details will be announced as we go along.

The final exam (200 points) will be taken on Tuesday 5/01/2012, 7:45–9:45 am, C208 Wells Hall. The final exam will be cumulative. No student should miss the final.

All quizzes–tests–final exam are not open – booked (i.e. textbooks/class notes are not allowed during them) and all quizzes–tests–final exam contain problems similar to the homework problems, they are another way to test your homework effort. Therefore, it is important that you work on all homework problems.
Electronic Equipment: The use of calculators as well as cell phones, tablet, laptops etc. is not permitted on the quizzes, tests and final exam.

Grading: Your final course grade will be determined by the total point out of 800 points you accumulate from homework, quizzes, tests, papers and final exam.

Approximate percentages for the course grade are tentatively set as follows:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% – 100%</td>
<td>4.0</td>
</tr>
<tr>
<td>85% – 89%</td>
<td>3.5</td>
</tr>
<tr>
<td>80% – 84%</td>
<td>3.0</td>
</tr>
<tr>
<td>75% – 79%</td>
<td>2.5</td>
</tr>
<tr>
<td>70% – 74%</td>
<td>2.0</td>
</tr>
<tr>
<td>65% – 69%</td>
<td>1.5</td>
</tr>
<tr>
<td>60% – 64%</td>
<td>1.0</td>
</tr>
<tr>
<td>below 59%</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Borderline Cases: If your percentage is near a border line, it will be handled individually with the consideration of other factors such as attendance, study effort, classroom contributions, performance over time, clarity of homework, quizzes, tests, papers and final exam, etc. Note that your grade could be either up or down by these considerations.

Policy on Make – up quizzes and tests: Make – up quizzes and tests will be given only in case of an excused absence (e.g. a documented medical excuse or dire family emergency, religious reasons or a conflicting University activity that cannot be rescheduled). Student athletes should inform the instructors ahead of time of any team travel schedules that conflict with a scheduled test or quiz. Missing a test or quiz without a valid excuse will result in a score of 0 for that test or quiz. There is no make – up homework, if you do not hand in a homework assignment on the due date it will result in a score of 0 for the assignment.

Academic Honesty: The University’s policy concerning academic integrity is covered in the General Student Regulations section of the Spartan Life booklet [http://splife.studentlife.msu.edu/regulations/general-student-regulations]. According to the handbook “no student shall claim or submit the work of another as one’s own”. This applies to all tests, quizzes, the final exam, the first paper and, especially, the collected homework: you must turn in the homework that is your own work. You are on your honor to abide by these regulations. However, you are encouraged to discuss the problems in group with other students before you write down your own work.

If any instance of academic dishonesty is discovered by an instructor, it is his or her responsibility to take appropriate action. Depending on his or her judgment of the particular case, he or she may give a failing grade to the student on the assignment or for the course.

Important Dates:

(For details visit [http://www.reg.msu.edu/ROInfo/Calendar/Academic20112012.asp])

Monday – 1/09/12 – Classes Begin.
Friday – 1/13/12 – Online open add period for Spring semester ends at 8pm. Last day to change to CR/NC at Registrar’s Office by 5pm.
Monday – 1/16/12 – Martin Luther King, Jr. Day. No classes are held. The University is open.
Monday 1/16/12 to Friday 1/20/12 – Students go to Undergraduate office, A212 Wells Hall for Mathematics enrollment changes (late adds, drop to lower course, section changes).
Friday – 1/20/12 – Last day to late add a course or change sections within a course. Last day to drop to a lower level course.
Friday – 2/03/12 – End of Tuition Refund

Wednesday – 2/08/2012 – Test I

Wednesday – 2/29/12 – Middle of Semester. Last day to drop a course with no grade reported.
Monday 3/05/12 to Friday 03/09/12 – Spring Break – no classes. The University is open.

Monday – 3/26/2012 – Test II

Friday – 4/27/12 – Last day of classes.
Tuesday – 5/01/2012 – Final Exam (7:45–9:45 am, C208 Wells Hall – classroom).
Friday 5/04/12 to Sunday 5/06/12 – Commencements.