# COURSE DESCRIPTION

**HONORS CALCULUS II – MA 226 - 2C, 38834**  
**SPRING 2018**

**DEPARTMENT OF MATHEMATICS**  
**UNIVERSITY OF ALABAMA AT BIRMINGHAM**

**Course Instructor:** Dr. Junfang Li  
**Office:** CH 491  
**Phone #:** (205) 934-2154  
**E-mail:** jfli@uab.edu  
**Office Hours:** TTh 11am - 12pm (or by appointment)

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<table>
<thead>
<tr>
<th>Meeting times: MW 12:20 PM – 2:10 PM</th>
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<tbody>
<tr>
<td>Meeting location: EB 146</td>
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<tr>
<td>Prerequisite: Undergraduate level MA 225 Minimum Grade of C or Undergraduate level MA 125 Minimum Grade of C or equivalent</td>
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<td>Credits: 4 semester hours</td>
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<td>Textbook: <em>Essential Calculus, 2nd Edition</em> by James Stewart, Thomson-Brooks/Cole, 2013 (must have Enhanced WebAssign Access Code); Topics to be covered can be found in Chapters 5 — 8 and Chapter 10. (See below for more detail.)</td>
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**Important dates:**

- **First day of class:** January 08, 2018
- **Martin Luther King, Jr. Holiday:** January 15, 2018
- **Last day to drop without paying full tuition:** January 16, 2018
- **Last day to withdraw with a “W”:** March 02, 2018
- **Spring Break:** March 12 - 18, 2018
- **Last day of class:** April 18, 2018
  - Test I: near Wednesday, January 31; Sec. 4.5, 5.1 – 5.3, 5.6, 5.8, 6.1 – 6.3;
  - Test II: near Wednesday, February 21; Sec. 6.5, 6.6, 7.1-7.3, 7.6;
  - Test III: near Wednesday, March 21; Sec. 8.1 – 8.7;
  - Test IV: near Wednesday, April 11; Sec. 10.1 – 10.5, 10.7, 10.8.
  (These dates are approximate and may be slightly shifted due to unforeseen circumstances.)
- **Final exam:** Wednesday, April 25, 1:30 – 4:00 pm (Location to be announced.)

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**Course policies:**
• Please make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.

• If your are contacted by the Early Alert Program, you should consider taking advantage of the services it offers. Various services to assist you are also listed in the Student Resources section of the Blazernet web site.

• If you wish to request a disability accommodation please contact DSS at 934-4205 or at dss@uab.edu.

• If a test is missed due to serious verifiable circumstances or official university business, the test grade will be replaced with the properly rescaled final exam score. You must advise the instructor of such circumstances before the exam takes place. A missed final exam gets a score of zero.

• Calculators (without internet access) will be allowed during any of the tests or quizzes. In addition, students can bring one quick reference card to tests including the final exam (i.e., a standard size 5″ × 8″ index card; both sides can be used).

Methods of teaching and learning:

• A large fraction (25%) of your grade will be determined by board presentations and attendance (to understand what this means you must read the part of this syllabus entitled “How this class works”).

• Class meetings of 100 minutes consisting of student presentations, lectures and discussions of examples and homework problems. Time also includes quizzes, and four in-class tests.

• Students are expected to undertake at least 10 hours of private study and homework per week.

• The online homework system Webassign will be used (look for more information below).

Assessment procedures:

• Student achievement will be assessed by the following measures:
  – Regular online homework; Quizzes. Online homework will be due on most Mondays. Feedback is provided when wrong answers are given. Students are encouraged to retake the homework problems (with randomly changed parameters) until they obtain correct answers. A limited number (at most 5) of takes is allowed during the week in which the set is available. Problems on tests are modeled after homework problems. Staying on top of homework is therefore extremely important. Quiz problems are similar to the homework problem sets. This allows students to gauge whether they are ready to work problems in a test situation. Homework and quizzes together count for 6% of the course average.
  – Four inclass tests including short questions with no or limited partial credit (Part I) including short questions (Part I) as well as problems requiring in depth
understanding (including word-problems). Partial credit is awarded where appropriate. Each test contributes 11% to the course average.

- **Students’ presentations** count for 14% of the grade. Normally, a student will present at most twice a week, and not more than three times a week (see the part of this document entitled “How this class works” for the additional explanation).

- **A 150-minute comprehensive final examination** including Part I and Part II type problems. The final contributes 25% to the course average.

- **Attendance** in the course is crucial for your success and counts for 11% of the grade. The roll will be taken in the beginning of every class. If you are unable to attend class, you must email me **BEFORE** that class take place and bring me a verifiable excuse later.

- Your course performance is your course average (including the final exam score). This is a number between 0 and 100.

- Your final grade is determined according to the following table:

<table>
<thead>
<tr>
<th>Course performance:</th>
<th>88-100</th>
<th>75-87</th>
<th>62-74</th>
<th>50-61</th>
<th>below 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Grade:</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

- In addition your grade may be raised by a strong performance on the final exam (normally at most one letter grade).

**Tips:**

- Help is available in the Math Learning Lab (HBB 202); M–Th, 9:00 AM –7:00 PM, F 9:00 AM –2:00 PM. It is closed during official UAB holidays and breaks. Limited hours are available during final exams.

- Past exams given in Calculus II are posted on the math dept website [www.math.uab.edu](http://www.math.uab.edu) for student practice. Click on Calculus Testbank under the Student Resources link.

- By working steadily and regularly, you will increase your chances to succeed in this course.

- Remember, being a full-time student is a full-time job.

**How to get started on Enhanced WebAssign:**

1. Go to [www.webassign.net](http://www.webassign.net) and click on *I HAVE A CLASS KEY* in the signin link.
2. Enter the following course key for MA 226 – 6C, 12:20 PM – 2:10 PM:
   
   uab 9161 9727

   and proceed. (If prompted for your institution, enter uab)

3. When prompted to purchase an access code, select “...trial period” (Do not purchase an access code at this time. However, you must purchase an access code within two weeks for you to continue using the system beyond the two-week trial period. The system will prompt you to enter your access code when the deadline approaches. Your book may have an access code bundled with it. You must use it.) **If you already have an active WebAssign account associated with this edition of**
the textbook, you may simply add this course to your account by using
the above Course Key.
(4) After your first registration, you can sign in as returning user.
(5) Should you run into technical problems Enhanced WebAssign provides technical sup-
port online and/or by phone.

- Review for Chapter 4: 4.2 – 4.5.
- Review for Chapter 5: 5.1 – 5.3.
- Chapter 5: 5.6, 5.8.
- Chapter 6: 6.1 – 6.3, 6.5 – 6.6.
- Chapter 7: 7.1 – 7.3, 7.6.
- Chapter 8: 8.1 – 8.7.
- Chapter 10: 10.1 – 10.5, 10.7 – 10.8

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**HOW THIS CLASS WORKS**

by Dr. Oversteegen

This class will be taught in a way that is likely to be different from mathematics classes you have
encountered in the past. Much of the class will be devoted to students working problems at the
board and much of your grade will be determined by the amount of mathematics that you produce
in this class.

I use the word produce because the best way to learn mathematics is by doing mathematics. Therefore, just as I learned to ride a bike by getting on and falling off, I expect that you will learn
mathematics by attempting it and occasionally falling off!

You will be expected to work assigned problems from the book and present some of them on the
board. I urge you to seriously consider the value of becoming an independent thinker who tackles
doing mathematics, and everything else in life, on your own rather than waiting for someone else
to show you how to do things.

**A Common Pitfall**

There are two ways in which students can approach this class. The first is to say, I will wait and
see how this works and then see if I like it and put some problems up later in the semester after I
catch on.

Think of the course as a forty-yard dash. Do you really want to wait and see how fast the other
runners are? If you try every night to do the problems then you may get a problem (Yay!) and
be able to put it on the board with pride and satisfaction. Alternatively, you will struggle with
the problem, learn a lot in your struggle, and then watch someone else put it on the board. When
this person puts it up you will be able to ask questions and help yourself and others understand it.
And then you can say to yourself, “Ahhhh, now I see where I went wrong and now I can do this
one and a few more for next class.”

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1We are indebted to Professor Ted Mahavier, a pioneer of the problem-based approach to learning calculus,
for the description of how this class works (for additional information go to [www.jiblm.org](http://www.jiblm.org)).
If you do not try problems each night, then you will watch another student put the problem on the board. Most likely you will not quite catch all the details. Then, when you study for the tests or try the next problems, you will have only a loose idea of how to tackle such problems. Basically, you have seen it only once in this case. The first student saw it once when s/he tackled it on her/his own, again when either s/he put it on the board or another student presented it, and then a third time when s/he studies for the next test or quiz.

Hence the difference between these two approaches is the difference between participating and watching a movie. I hope you all will choose to participate and, as a consequence, will benefit the most from the class!

**Board Work**

Let us put your mind at ease regarding this part of the class. First, by coming to class everyday you will earn 11% of your course grade! Every problem you present pushes your grade higher. Here are some rules and guidelines associated with the board work.

- I will call for volunteers every day and will pick the person with the least presentations to present a given problem. You may inform me that you prepared a problem in advance (which I appreciate), but the problem still goes to the person with the least presentations on the day I call for a solution.
- Ties are broken randomly before the first test. Once the first test has been returned, ties are broken by giving precedence to the student with the lower last test score. A student who has not gone to the board on a given day will be given precedence over a student who has gone to the board that day.
- To present a problem at the board means to have written the problem statement up, to have written a correct solution using complete mathematical sentences, and to have answered all students questions regarding the problem.
- Since you will be communicating with other students on a regular basis, here are several guidelines that will help you.
  - Most importantly, remember that the whole class is on your side and wants to see you succeed, so questions are intended to help everyone, not to criticize you.
  - When you speak, do not use the words obvious, stupid, or trivial.
  - Do not attack anyone personally or try to intimidate anyone. Do not get mad or upset at anyone. If you do, try to get over it quickly.
  - Do not be upset when you make a mistake - brush it off and learn from it. Do not let anything go on the board that you do not fully understand. Do not say to yourself, I will figure this out at home.
  - Do not work together without acknowledging it at the board.
  - Do be polite and respectful.
  - Do let people answer when they are asked a question.
- Do not use concepts we have not defined. Do not use or get examples or solutions from other books.
- Do not try to put up a problem you have not written up. Do prepare arguments in advance.
- Do learn from your mistakes.
- Do refer to earlier results and definitions by number when possible.
HOW TO STUDY EACH DAY

1. Read over your notes from class that day and the relevant section(s) of the textbook.
2. Make a list of questions to ask me at the beginning of the next class. (I love these!)
3. Review the recent problems.
4. Work on several new problems and read the appropriate new section of the textbook.
5. Write up as many solutions as you can so that you can copy these onto the board the next day.

COMMON COURTESIES FOR ANY CLASS:

- Putting your head on your desk resting or sleeping during class is rude. If you need sleep, please go to your room or home - not to class.
- If you need to leave class early, it is polite to tell the instructor before the class starts. Class attendance is expected.
- Please arrive for class a few minutes early so that class can begin without interruption. If there is a problem, let the instructor know.