# MATH 222 – Honors Calc II – Spring 2017

## SYLLABUS

**Instructor:** Suzanne Boyd, Associate Professor  
**Office:** EMS E443, sboyd@uwm.edu, 414-708-6472  
**Office Hours:** Wed 12:30-1:45 EMS E443, Fri 11-12:15 NWQ 1935 & by appt

**Class meetings and location:** MTWR 11-12:15, NWQ 1921  
**Website:** Check D2L for course handouts, grades and announcements.

**Text:** *Calculus Single and Multivariable*, 6th edition, by Hughes-Hallet, et al, and access to WileyPLUS—an online learning platform. The ISBN for the bundle is: 9781118562406. Students may also wish to purchase a Student Solutions Manual. Additional handouts may also be made available during the semester (at no charge).

*If you bought the book and access for 221 in fall 2016, no further purchase needed.*

**Prerequisite:** Grade of C or better in Math 221, or B or better in 232.

**Important Dates for Spring 2017:**  
Monday, January 23 . . . . . First day of classes  
*Students who do not attend class or contact me by Fri, Jan 27 will be dropped.*  
Friday, January 27 . . . . . MathSci department’s last day to add a class  
Friday, February 3 . . . . . UWM last day to add, or change to/from C/NC/audit status  
Friday, February 17 . . . . . Last day to drop without a “W” (Withdrawn) on record  
Friday, March 17 . . . . . Last day to drop  
March 19--26 . . . . . . Spring Recess  
Thursday, May 11. . . . . Last day of classes  
Friday, May 12 . . . . . . Study day  
May 13, 15-20. . . . . . Final examination period  
Tuesday, May 23 . . . . . Priority deadline for instructor grading in PAWS  
Tuesday, May 30 . . . . Final deadline for instructor grading in PAWS (4:30 pm)

**Grading Scale:** Plus/Minus grading will apply  
A = 93-100  
A- = 90-92  
B+ = 87-89  
B = 83-86  
B- = 80-82  
C+ = 77-79  
C = 73-76  
C- = 70-72  
D+ = 67-69  
D = 63-66  
D- = 60-62  
F = under 60

**Grading:** We will study calculus largely by solving realistic and challenging problems, both in class and out. Honors Calculus is accelerated, and contains both deeper exploration of concepts as well as more applications and complex calculations. Students are expected to be actively involved in their learning. Much of class time will be spent on projects, group activities, and active learning in general.
Your grade will be determined as follows:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component</th>
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<tbody>
<tr>
<td>10%</td>
<td>In-class attendance/participation</td>
</tr>
<tr>
<td>40%</td>
<td>WileyPlus weekly homework (due Sunday nights)</td>
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<tr>
<td>5%</td>
<td>Project 1 [Diff Eq, Chp 11]: due Monday, Jan 30, in class</td>
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<tr>
<td>10%</td>
<td>Project 2 [Seq/Ser, Chp 9,10]: due Monday, Feb 20, in class</td>
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<tr>
<td>20%</td>
<td>Project 3 [Multivar, Chp 12-16]:</td>
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<td>Part I on Chps 12—14 due Monday, Apr 3, in class.</td>
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<td>Whole Project due Friday, May 19 at noon, EMS E443</td>
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<td>15%</td>
<td>Project Presentation: in class during last week, May 8-11</td>
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<tr>
<td>100%</td>
<td>total</td>
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**In-class work**

Much of class time will be spent with students working on activities. Use your class time wisely for a good in-class participation grade. Unlike last term, you’ll spend class time on projects or Wiley problems rather than on extra assignments to hand in.

**WileyPlus**

You’ll have weekly homework/drill problems on WileyPlus, due Sundays, but fewer than we did in 221. Your access from fall continues. Access our course at: https://edugen.wileyplus.com/edugen/class/cls564784/

**Projects**

This semester projects will be a much larger focus of the class. We’ll do one project for each main topic in the course. Each project will focusing on the interplay between theory and applications of calculus to a real-world topic. I recommend you work on the projects collaboratively, but each student must turn in an individual write-up.

**Presentation**

Each student will give a 15-20 minute presentation to the class during the last week, on the subject of one of their projects (if Proj 1, you’ll do extra work).

**Extra Practice / Extra help**

Come to see me for any help you need! There are also multiple tutoring opportunities on campus, both in the library and in our new Calculus Workshop in Physics room 326. This is a room where you can go to work on calculus problems in a collaborative setting with other students from the class and across other sections of calculus. Extra tutoring and homework help from teaching assistants and professors will be available. The workshop will be open approximately from 8-5 M-F even if tutors are not present. See: http://uwm.edu/math/undergraduate/resources/tutoring/

**Time Investment.** To comply with an accreditation requirement, the course syllabus provides information on the minimum investment of time required by an average student to achieve the learning goals of the course. Study leading to one semester credit represents an investment of time by the average student of not fewer than 48 hours for class contact in lectures, for laboratories, examinations, tutorials and recitations, and for preparation and study; or a demonstration by the student of learning equivalent to that
established as the expected product of such a period of study. (The total number of hours should be 48 per credit hour awarded for the course; here, 48 \times 5 = 240 hours).

See https://www4.uwm.edu/secu/docs/faculty/2838_Credit_Hour_Policy.pdf

The minimum time an average student should expect to spend on this class is as follows:
Time in the classroom (face to face instruction) = 90 hours
Time completing assignments = 100 hours
Time spent reading lecture and other material = 50 hours

You’ll need to spend more time if you are less familiar with the prerequisite material.
These figures are approximate--except for time in class, these activities overlap!

Course Description.

In the two semesters of this course (Math 221 and 222), we will cover material equivalent to the standard three-semester calculus sequence (Math 231, 232, 233), but our goal is to gain a richer understanding of the material, both the underlying notions and their use in the context of solving real-world problems. A sound knowledge of algebra and trigonometry is required for the course.

The key concepts we will cover in the second semester are:
1. Introduction to Differential Equations.
2. Sequences and Series.
3. Vectors and Vector functions.
4. Functions of several variables, partial derivatives.
5. Multiple Integrals

Tentative Schedule:

<table>
<thead>
<tr>
<th>Week:</th>
<th>Dates:</th>
<th>Material:</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Jan 23—29</td>
<td>Chp 11</td>
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<tr>
<td>Mon Jan 30:</td>
<td>Project 1 on Chp 11 due.</td>
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<td>Week 2</td>
<td>Jan 30—Feb 5</td>
<td>Chp 10</td>
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<td>Weeks 3-4</td>
<td>Feb 6—Feb 19</td>
<td>Chp 9, catchup/review</td>
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<td>Mon Feb 20:</td>
<td>Project 2 on Chps 9 and 10 due, in class.</td>
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<td>Weeks 5-6</td>
<td>Feb 20—Mar 5</td>
<td>Chp 12</td>
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<td>Week 7</td>
<td>Mar 6—Mar 12</td>
<td>Chp 13</td>
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<td>Weeks 8-9</td>
<td>Mar 13—Apr 2</td>
<td>Chp 14</td>
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<td></td>
<td>(minus spring break)</td>
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<tr>
<td>Mon Apr 3:</td>
<td>Project 3, Part I (on Chps 12-14) due, in class.</td>
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<td>Week 10</td>
<td>Apr 3—Apr 9</td>
<td>Chp 15</td>
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<td>Weeks 11-15</td>
<td>Apr 10—May 7</td>
<td>Chps 16-18 &amp; 19.1?</td>
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<td>Week 16</td>
<td>Final Presentations</td>
<td>Project of your choice</td>
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<tr>
<td>Fri May 18, noon: Project 3 on Chps 12—18 due, EMS E443 by noon.</td>
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Other University Policies

Academic Misconduct
The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others’ academic endeavors. Further information can be found at: http://www4.uwm.edu/acad_aff/policy/academicmisconduct.cfm

Sexual Harassment
Sexual harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the careers, educational experience, and well-being of students, faculty and staff. The University will not tolerate behavior between or among members of the University community which creates an unacceptable working environment. The policy on discriminatory conduct, including sexual harassment, can be found at: http://www4.uwm.edu/sexualharassment/

Other Information

1. Room changes, course cancellations, etc., are posted outside of the classroom door on Department letterhead, and emailed to the students.
2. If you need special accommodations in order to meet any of the requirements of the course, please contact me as early as possible. http://uwm.edu/arc/
3. Students will be allowed to complete examinations or other requirements that are missed because of a religious observance: http://www4.uwm.edu/secu/docs/other/S1.5.htm
4. Students called to active military duty: http://www4.uwm.edu/current_students/military_call_up.cfm
7. In class final exams: http://www4.uwm.edu/secu/docs/other/S22.htm