

# TENTATIVE SYLLABUS

## MATH 1597 Fall 2013 — Honors Calculus II

**MTuWThF 11 – 11:50 BohH 346**

*(5 credits, prerequisite 1296 or 1596, a grade of C- or better in all prerequisite courses, however, if you want to succeed, you should not have a grade worse than B in your prerequisite course)*

**Instructor:** Dr. Dalibor Froncek  
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**Office Hours:** M 10:15–11, Tu 3–4, W 1–2, Th 2–3 and by appointment

### **Textbook:**

*Calculus, Early Transcendentals, Seventh Ed. 2012* by James Stewart, Cengage Learning, ISBN [9780538497909](#) (or the enhanced version with Web Assign, ISBN [9781111649579](#)).

We may be also using additional resources that will be provided to you when needed.

### **Course Goals and Objectives:**

Master and understand basic concepts, methods, and techniques of calculus. *Honors Calculus II (Math 1597)* will cover the same topics as the regular *Calculus II (Math 1297)* but with more rigor and more depth. More emphasis will be placed on proofs, more challenging (interesting) HW will be assigned and less time will be spent in class on examples. Students should expect to spend more time outside class on assignments. For high-ability students with excellent preparation and curiosity about mathematics.

### **Course Content (topics covered):**

We will cover Chapters 7, 8, 10, 11, 14 (detailed schedule below). We may skip some sections if needed.

### **Attendance requirements and penalties:**

While regular attendance is highly recommended and very welcome, it is not mandatory and absences will not be penalized. Obviously, we will often in assignments, tests, and proofs performed in class refer to previously mentioned material which may not always be easily found in the book. Therefore, missing classes may cause difficulties in meeting the course standards.

### **Assignments:**

There will be assignments [posted](#) every Friday, updated on Tuesday, and due on Wednesday at the beginning class. The assignments will be graded. The assignment with the lowest score will be dropped. An assignment is assumed to be **your own work!** Therefore, you can collaborate with other people when preparing for the assignment, but you have to work alone when you are actually doing it. Also, you cannot use any kind of solutions to assigned problems that can be found in manuals, on Internet, or elsewhere.

### **Additional Homework:**

There will be homework exercises from almost every class. The problems will be [posted on the web](#) but are not to be handed in. If you need help with your homework and/or assignment, you can talk to your GTA, go to the Tutoring Center located in Solon Campus Center 40 (<http://www.d.umn.edu/tutoring/>), or come to me during office hours.

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## Quizzes:

There will be a quiz every Friday except for the weeks when there is a test. The quiz with the lowest score will be dropped. Days for assignments and quizzes are subject to discussion and change.

## Tests:

There will be three tests. Tentative dates are weeks 4, 8, and 12. They will be given outside of the regular class periods to allow for extra time. The material to be covered in the tests will be announced in class. Some tests or their parts can be open book. Missing a test is a serious matter. In order to schedule a make-up test, you must have a written medical excuse.

## Extra Credit:

Extra credit is given in the form of bonus point. Details in class.

## Final Exam:

Will be held on Thursday, December 19 at 10 AM in the regular classroom. The Final Exam is cumulative. It can be an open book exam.

## Grading:

Your grade in this course will be based on:

Assignments	= 20%
Quizzes	= 20%
Tests	= 45%
Final Exam	= 15%

## Grading scale:

The grades are based on UMD Grading Policy: <http://www.d.umn.edu/vcaa/GradingandTranscripts.html>

Your grade in this course will be determined as follows:

91–100 A (Achievement that is outstanding relative to the level necessary to meet course requirements)

86–90 A–

81–85 B+

76–80 B (Achievement that is significantly above the level necessary to meet course requirements)

71–75 B–

66–70 C+

61–65 C (Achievement that meets the course requirements in every respect)

56–60 C–

50–55 D

below 50 F

## Students with Disabilities:

It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements – such as time limited exams, inaccessible web content, or the use of non-captioned videos – please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Please call 218-726-6130 or visit the DR website at [www.d.umn.edu/access](http://www.d.umn.edu/access) for more information.

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## Cell Phones:

Cellular telephones and other communication devices are prohibited during quizzes and exams. Having any communicating device out during an exam will be considered cheating and result in an immediate zero. Also note it is discourteous and a distraction to have ringing phones during class time. If you do not turn off your ringer you may be asked to leave the room.

## Pictures and videos:

Photographs and video cannot be taken without prior instructor's consent. If a verbal consent is given, they cannot be made public (e.g., on internet) without written consent of instructor and UMD administration.

## Policies:

The following policies apply:

[http://www.policy.umn.edu/Policies/Education/Education/SYLLABUSREQUIREMENTS\\_APPA.html](http://www.policy.umn.edu/Policies/Education/Education/SYLLABUSREQUIREMENTS_APPA.html)

<http://www.duluth.umn.edu/vcaa/SyllabusStatements.html>

<http://www.d.umn.edu/vcaa/GradingandTranscripts.html>

All students at the UMD must be in compliance with the student conduct code in the policies and procedures section of the 2005-2007 University Catalog, specifically in this course with regards to scholastic dishonesty. Academic integrity is of utmost importance and all procedures and sanctions will be followed as per the university catalog.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities and employment without regard to race, religion, color, sex, national origin, handicap, age, veteran status or sexual orientation.

## Student learning outcomes as they relate to the course objectives

- Demonstrate mastery of fundamental mathematical concepts and techniques
- Apply mathematical techniques appropriately
- Recognize the power of mathematics to model real life situations
- Demonstrate competence and confidence in the workforce
- Maintain a desire for learning
- Communicate mathematics to non-technical audiences as well as to peers

*If you don't understand what I mean by this, you are not alone. I don't understand it either, but I am mandated to include it here by the Syllabus Policy <http://www.duluth.umn.edu/vcaa/Syllabus.html>*

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## **Academic Dishonesty—Prohibited Conduct:**

All forms of academic dishonesty are prohibited, including (but not limited to):

1. submission of false records of academic achievement
2. cheating on assignments or examinations
3. submitting sentences or ideas as your own without proper acknowledgment or citation (plagiarizing)
4. altering, forging, or misusing a University academic record or forging the signature of any member of the University community
5. taking, acquiring, using, or circulating test materials without faculty permission
6. acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement
7. facilitating academic dishonesty by helping another student to violate the academic integrity policy, such as providing course work for another student to turn in as his or her own effort or taking an exam for another student
8. presenting as one's own a plot, succession of ideas, or list/outline of another without proper acknowledgment
9. attending a class, completing an assignment, or taking a quiz/test in the name of another student
10. copying, editing, using, or deleting computer files without permission
11. altering or viewing computer records, dispensing or releasing information gained via unauthorized access, modifying computer programs or systems, or interfering with the use or availability of computer systems or information
12. bribing or attempting to bribe, promising favors, or making threats with the intention of affecting a grade, a record, or an evaluation of academic performance
13. purchasing or otherwise presenting work as your own when it was done by another person
14. submitting the same paper or generally similar papers to meet the requirements of more than one course without the approval and consent of all faculty members of all such courses
15. depriving another student of necessary study or research materials or in any way impeding another student's work and pursuit of education
16. submitting falsified data, such as bibliographic resources and experimental data or altering graded academic work/quizzes/tests and resubmitting them in order to get a higher grade (fabrication)
17. intentional use, misuse, or alterations of University materials or resources in an attempt to make them inaccessible to others (e.g., altering passwords, unauthorized use of computer accounts, violation of library procedures, intentional misuse or destruction of educational materials)

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## Detailed Course Content:

7 Integration Techniques	7.2 Trigonometric Integrals 7.3 Trigonometric Substitution 7.4 Integration of Rational Functions by Partial Fractions 7.5 Strategy for Integration 7.6 Integration Using Tables 7.7 Approximate Integration 7.8 Improper Integrals
8 Applications of Integration	8.1 Arc Length 8.2 Area of a Surface of Revolution 8.3 Applications to Physics and Engineering 8.4 Applications to Economics and Biology
10 Parametric Equations	10.1 Curves Defined by Parametric Equations 10.2 Calculus with Parametric Curves 10.3 Polar Coordinates 10.4 Areas and Lengths in Polar Coordinates 10.5 Conic Sections 10.6 Conic Sections in Polar Coordinates
11 Sequences and Series	11.1 Sequences 11.2 Series 11.3 The Integral Test and Estimates of Sums 11.4 Comparison Tests 11.5 Alternating Series 11.6 Absolute Convergence and the Ratio and Root Tests 11.7 Strategy for Testing Series 11.8 Power Series 11.9 Representations of Functions as Power Series 11.10 Taylor and Maclaurin Series 11.11 Applications of Taylor Polynomials
14 Partial Derivatives	14.1 Functions of Several Variables 14.3 Partial Derivatives 14.5 The Chain Rule