Title of Course: Calculus II (MATH:1860:0BBB, MATH:1860:0B10 MATH:1860:0B11)
Course meeting time and place: 10:30am-11:20am /MWF, 118 MLH
Department of Mathematics: https://math.uiowa.edu/

Course ICON site: To access the course site, log into Iowa Courses Online (ICON) https://icon.uiowa.edu/index.shtml using your Hawk ID and password.

Course Home
The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the “second-grade only” option (SGO), academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

Instructor: Ionut Chifan (yo-nüts key-fun)
Office location: 1R MLH
Student drop-in hours: MW 1:30pm-2:30pm, F 11:30am-12:30pm, and by appointment

Phone: 319-335-0777
E-mail: ionut-chifan@uiowa.edu

Teaching Assistant: Kevin Del Real Ramos
Office location: 225C MLH
Office hours: TBD

Phone: N/A
E-mail: kdelrealramos@uiowa.edu

DEO Contact information: Professor Ryan Kinser, 14 MLH, ryan-kinser@uiowa.edu

Prerequisites:
MATH:1550 with a minimum grade of C- or MATH:1850 with a minimum grade of C- or MPT Level 3 score of 15 or higher
Description of Course
This is a standard first semester course in Calculus. The sequence MATH:1850 - MATH:1860 is one of the basic entry-level mathematics courses for students in the mathematical and physical sciences. Topics include fundamental concepts, methods, and techniques of integral and differential calculus of a single variable, such as: integration by parts, trigonometric integrals, trigonometric substitutions, partial fractions, improper integrals, area surfaces of revolutions, applications to physics, introduction to differential equations, parametric equations and polar coordinates, infinite sequences and series, convergence tests, power series, Taylor polynomials and series. Expect the material to be covered at two to three times the pace in high school. Students are expected to attend class and read the textbook for comprehension. Examinations will cover the material discussed in class as well as assigned material from the text that is not discussed in class. Lecture time is at a premium; not everything can be taught in class. It is the student’s responsibility to learn the material; the instructor’s job is to offer help and guidance.

Learning Objectives

The class is a natural continuation of Calculus I. The main goal of the course is provide the mathematical background needed to familiarize students with several fundamental concepts in calculus such as the theory of integrals and their applications, basic differential equations, and the theory of sequences and series. The course emphasizes both the theoretical aspects of these notions as well as a wide range of applications to other sciences including physics, engineering, economics and biology. The students completing this course will be able to apply these concepts to real life problems that often arise in the natural sciences (e.g. optimization problems, modeling of various phenomena in physics, biology, astronomy etc). This course is also the building block for several subsequent mathematics classes.

Textbook/Materials


Academic Honesty and Misconduct
All students in CLAS courses are expected to abide by the CLAS Code of Academic Honesty. Undergraduate academic misconduct must be reported by instructors to CLAS according to these procedures. Graduate academic misconduct must be reported to the Graduate College according to Section F of the Graduate College Manual.
Student Collaboration:
The homework for this course is designed to help you master your knowledge related to the topics covered during lecture. As such, you may work on the homework problems with others or use online resources. However, please be aware that to master the skills needed for this class, practice is required and that to do well on the final exam you will need to work many of these problems multiple times without help. Be sure to test your knowledge by doing much of the homework on your own. All other graded work for this class (quizzes and tests) must be completed individually and any form of cheating will be reported. Cheating on a quiz or exam will result in a failing grade for that particular quiz or exam.

Student Complaints
Students with a complaint about a grade or a related matter should first discuss the situation with the instructor and/or the course supervisor (if applicable), and finally with the Director or Chair of the school, department, or program offering the course.

Undergraduate students should contact CLAS Undergraduate Programs for support when the matter is not resolved at the previous level. Graduate students should contact the CLAS Associate Dean for Graduate Education and Outreach and Engagement when additional support is needed.

Drop Deadline for this Course
You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the drop deadline for this course here. When you drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the Registrar’s website. Undergraduate students can find policies on dropping and withdrawing here. Graduate students should adhere to the academic deadlines and policies set by the Graduate College.

Grading System and the Use of +/-
I will use the +/- grading system. Final grades will be awarded based on the following ranges:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
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<tbody>
<tr>
<td>A+</td>
<td>98-100</td>
</tr>
<tr>
<td>A</td>
<td>93-97</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
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<tr>
<td>B+</td>
<td>87-89</td>
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<tr>
<td>B</td>
<td>83-86</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
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<tr>
<td>C+</td>
<td>77-79</td>
</tr>
<tr>
<td>C</td>
<td>73-76</td>
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<tr>
<td>C-</td>
<td>70-72</td>
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<tr>
<td>D+</td>
<td>67-69</td>
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<tr>
<td>D</td>
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<tr>
<td>D-</td>
<td>60-62</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 59</td>
</tr>
</tbody>
</table>
Course Grades
Final course grades will be assessed based on your performance in the following activities:

Quizzes: 15%
Except for midterm exam weeks, there will be a quiz in discussion almost every Thursday on the HW that is due on that day. The quiz will consist of 3-4 problems from that week’s homework assignment. The main purpose of quizzes is to help you evaluate your knowledge on a regular basis – identifying problem areas before the exams will allow you to get help before your grade suffers. Quiz make-ups are only allowed with a university approved, documented reason. Your lowest two quiz scores will be dropped.

Midterms: 50%
There will be two 50-min long midterm exams given during the regular lecture class time on 2/22 and 4/5. Each of these midterms exams are worth 25% of the final grade.

Final exam: 30%

The final exam is 120-min long and it is comprehensive. Books, notes and calculators are not allowed during neither the final nor the midterm exams. All exams are show-work but occasionally may contain multiple-choice and true-false questions. Please remember that final exams may only be given during finals week according to CLAS policy.

Make-up exams will be given only if the exam was missed due to religious holidays (please let me know by the end of the first week of classes if this will be a problem for you), illness (please provide documentation from a medical doctor), or other unavoidable documented reason.

Homework: 5%

Homework will be assigned for each section. The homework assigned during the week is due on Thursday of the following week at the beginning of discussion session (before the quiz). No late homework is accepted without a university approved, documented reason. For almost all students, doing problems is the best way to learn the material. Homework will be assigned every class period and should be completed before the next class meeting. Your lowest homework score will be dropped. Your homework must be legible, answers should be boxed, and the assignment should be stapled.
Date and Time of the Final Exam
The final examination date and time will be announced by the Registrar generally by the fifth week of classes and it will be announced on the course ICON site once it is known. **Do not plan your end of the semester travel plans until the final exam schedule is made public. It is your responsibility to know the date, time, and place of the final exam.** According to Registrar's final exam policy, students **have a maximum of two weeks after the announced final exam schedule** to request a change if an exam conflict exists or if a student has more than two exams in one day (see the [policy](#) here).

Calendar of Course Assignments and Exams

**Material covered:** We will cover Chapters 7-11 of the textbook, some sections will be omitted.

Chapter 7. (1- 5, 8) Techniques of integration: integration by parts, trigonometric integrals, trigonometric substitution, rational functions; improper integrals. (**6 class periods**)  
Chapter 8. (1-5) Applications if integration: arc length, area of revolution surfaces, applications to physics, engineering, economics and biology, probability; (**5 class periods**)  
Chapter 9. (1-6) Differential Equations: modeling, direction fields and Euler’s method, separable equations, population growth, linear equations, predator-prey systems. (**6 class periods**)  
Chapter 10. (1-6) Parametric Equations and Polar Coordinates: curves defined by parametric equations, calculus with parametric curves, Bezier curves, polar coordinates, areas and lengths of polar coordinates, conic sections in polar decomposition. (**6 class periods**)  
Chapter 11. (1-10) Infinite sequences and series: basic properties sequences and series, the integral test, comparison tests, alternating series, absolute convergence and ration/root tests, power series, Taylor and Maclaurin series, applications of Taylor polynomials. (**11 class periods**)  

<table>
<thead>
<tr>
<th>Week</th>
<th>Beg-End</th>
<th>No lectures</th>
<th>Sections covered</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/16 - 1/20</td>
<td>2</td>
<td>7.1, 7.2</td>
<td>Hw</td>
</tr>
<tr>
<td>2</td>
<td>1/23 - 1/27</td>
<td>3</td>
<td>7.3, 7.4</td>
<td>Hw, Quiz</td>
</tr>
<tr>
<td>3</td>
<td>1/30 - 2/3</td>
<td>3</td>
<td>7.5, 7.8</td>
<td>Hw, Quiz</td>
</tr>
<tr>
<td>4</td>
<td>2/6 - 2/10</td>
<td>3</td>
<td>8.1, 8.2, 8.3</td>
<td>Hw, Quiz</td>
</tr>
<tr>
<td>5</td>
<td>2/13 - 2/17</td>
<td>3</td>
<td>8.4, 8.5</td>
<td>Hw, Quiz</td>
</tr>
<tr>
<td>6</td>
<td>2/20 - 2/24</td>
<td>3</td>
<td>9.1, 9.2</td>
<td>Review, Ex1</td>
</tr>
<tr>
<td>7</td>
<td>2/27 - 3/3</td>
<td>3</td>
<td>9.3, 9.4</td>
<td>Hw, Quiz</td>
</tr>
<tr>
<td>8</td>
<td>3/6 - 3/10</td>
<td>3</td>
<td>9.5, 9.6</td>
<td>Hw, Quiz</td>
</tr>
<tr>
<td>9</td>
<td>3/20 - 3/24</td>
<td>3</td>
<td>10.1, 10.2</td>
<td>Hw, Quiz</td>
</tr>
<tr>
<td>10</td>
<td>3/27 - 3/31</td>
<td>3</td>
<td>10.3, 10.4, 10.5</td>
<td>Hw, Quiz</td>
</tr>
</tbody>
</table>
List of homework assignments:

Note: **odd** -odd numbers (1,3,5 etc), **even**- even numbered problems (2,4,6 etc), **eoe** – every other even (2,6,10 etc), **eoo** – every other odd (1,5,9, etc). If part of an assigned problem requires a calculator, you may skip that part but should do the rest of the problem. If I accidentally assigned a problem that requires a calculator, please skip it.

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Page</th>
<th>Chapters</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>11</td>
<td>4/3 - 4/7</td>
<td>3</td>
<td>10.6,11.1</td>
<td>Review, Ex2</td>
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<tr>
<td>12</td>
<td>4/10 - 4/14</td>
<td>3</td>
<td>11.2,11.3,11.4</td>
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<tr>
<td>13</td>
<td>4/17 - 4/21</td>
<td>3</td>
<td>11.5,11.6</td>
<td>Hw,Quiz</td>
</tr>
<tr>
<td>14</td>
<td>4/24- 4/28</td>
<td>3</td>
<td>11.7,11.8,11.9</td>
<td>Hw,Quiz</td>
</tr>
<tr>
<td>15</td>
<td>5/1 - 5/5</td>
<td>3</td>
<td>11.10,11.11</td>
<td>Review</td>
</tr>
</tbody>
</table>

7.1  1-48 eoe
7.2  1-56 eoe
7.3  1-36 eoo
7.4  1-58 eoo
7.5  1-93 eoo
7.8  1-50 odd, 51-60 eoo
8.1  1-26 even
8.2  1-16 even
8.3  1-17 odd, 23-33 odd
8.4  1-14 odd
8.5  1-15 odd
9.1  1-14 even
9.2  1-19 odd
9.3  1-24 even
9.4  1-10 odd
9.5  1-29 odd
9.6  1-9 odd
10.1 1-40 eoo
10.2 1-50 eoo
10.3 1-64 eoe
10.4 1-46 eoo
10.5 1-50 eoe
10.6 1-22 odd
11.1 1-62 eoo
11.2 1-66 eoo
11.3 1-34 eoe, 46
11.4 1-44 eoo
College of Liberal Arts and Sciences (CLAS) Course Policies

**Attendance and Absences**

*Course attendance:* Attendance is expected for each class meeting, as it will help you better understand the concepts covered in lectures. If you miss a class, you are responsible for any assignments/announcements made/material covered.

University regulations require that students be allowed to make up examinations which have been missed due to illness or other unavoidable circumstances (e.g., involvement in other UI authorized activities or sports, etc). So, students that missed an exam or assignment due to any of these reasons must notify the instructor immediately. They are also strongly encouraged to use the CLAS absence form on ICON under the Student Tools.

Students with mandatory religious obligations or UI authorized activities must discuss their absences with me as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

**Exam Policies**

**Communication: UI Email**

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community.

**Other Expectations of Student Performance**

*Participation in class discussions and preparations:* I strongly encourage you to actively participate in class discussions; ask questions or ask for more explanations whenever you feel confused; in this class there is NO stupid question!

*Cell phones policy:* I am expecting you to NOT use your cell phones, i-pds, or computers during the lecture time for other purposes than class related.
Changing grade policy: If I change your grade on a homework or exam you should always remind me in the same day by e-mail that I have changed your grade.

Complaint procedure: Any student having a problem with the course should contact the instructor. Most issues can be resolved with a straightforward discussion.

Calculators: You may not use a calculator during tests and quizzes and I encourage you not to use one while doing homework.

Where to Get Help

You are always welcome to come to my office hours or stop by outside of office hours if I am around. You may also make an appointment. Your TA also has office hours. Another excellent resource is the Math Lab is located in 125 MLH. It is staffed by very knowledgeable math graduate students. Math Lab services are FREE. For more information and hours, please go to [http://www.math.uiowa.edu/math-tutorial-lab](http://www.math.uiowa.edu/math-tutorial-lab)

Also, as a rule, for each lecture you should spend at least two hours on reading/homework/repeating the material, etc. You should start working over the homework problems right after the relevant sections are covered. If you encounter difficulties, I strongly recommend you seek help immediately! Don't postpone it until one day before the exam! Also remember this: small deficiencies at the beginning tend to rapidly grow into big ones.

Below are additional resources the students will find useful for this course:

Writing Center: [http://www.uiowa.edu/~writingc/](http://www.uiowa.edu/~writingc/)

Speaking Center: [http://clas.uiowa.edu/rhetoric/for-students/speaking-center](http://clas.uiowa.edu/rhetoric/for-students/speaking-center)

Tutor Iowa: [https://tutor.uiowa.edu/](https://tutor.uiowa.edu/)

University Policies

-Accommodations for Students with Disabilities
-Basic Needs and Support for Students
-Classroom Expectations
-Exam Make-up Owing to Absence
-Free Speech and Expression
-Mental Health
-Military Service Obligations
-Non-discrimination
-Religious Holy Days
-Sexual Harassment/Misconduct and Supportive Measures
-Sharing of Class Recordings