Calculus II with Analytic Geometry

MATH 202–01, Fall 2021

Instructor: Dr. Willis, Professor of Mathematics

Office: Discovery Hall, **Room 368**

☎**:** 308 - 865 - 8868

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Office Hours: Either in person or by Zoom: Monday, Wednesday, and Friday, 9:30 – 11:00; Tuesday and Thursday 13:00 – 14:00; Monday and Wednesday 13:30 – 15:00; and by appointment.

Zoom For both Zoom office hours or class meetings, use the **Meeting ID: 616 568 5706**.

Course objectives

Students will learn: applications of the antiderivative, methods for finding antiderivatives, the definitions and properties of the logarithm, exponential, and related functions, the concepts, theorems, and proofs relating to sequences and infinite series, and the properties of the polar coordinate system.

Prerequisite

To be in this class, you must have already earned a grade of D- or greater in Calculus I (UNK's MATH 115).

Course Resources

(a) *University Calculus: early transcendentals*, fourth edition (required), by Hass, Heil, Weir, and Bogacki.

(b) MyMathLab (required). The Course ID is willis91782

(c) Reliable Internet access.

(d) An Internet connected camera (for turning in class work electronically).

(e) An Internet connected computer (not just a phone or tablet) that can run Zoom.

(f) If we need to convert this class to remote learning, your computer will need to have a microphone and a camera. For remote office hours, it can be useful to have a separate camera that can be pointed toward a well-lit writing surface.

(g) A basic scientific calculator (needn't be a graphing calculator).

(h) Pencils, erasers, notebook for note taking. Colored pens or pencils are nice for note taking.

Class meeting times

Generally, this class meets for 50 minutes Monday through Friday. Occasionally, to make up for a snow day or for days that I have to be absent, we will meet for 75 minutes on either Tuesday or Thursday. Additionally we will meet for 75 minutes for each mid-term exam.

Grading

Your course grade will be based on online homework, in class work, midterm exams, and a comprehensive final exam; specifically:

Online homework (31 five point assignments) ..... 155 (total)
In class work (12 ten point assignments) ..... 120 (total)
Mid-term exams 1,2, and 3 (100 points each) ..... 300 (total)
Exam 4 ..... 50 (total)
Comprehensive Final exam ..... 150 (total)

Your course grade will be based on the percent of the available points. Course letter grades will be based on a ten point scale. Except for the grade of A+, grades in the lower third of each decade will be a minus grade and grades in the upper third of each decade will be a plus grade. For example, the B- range is $[80, 83+1/3)$, and the B+ range is $[86+2/3, 90)$. To earn a grade of A+ requires a course average that exceeds 98%.

In-class work & online homework

Except for examination days, we will do in class work for a portion of each class on Tuesday. In class work must be turned in electronically to Canvas (not emailed to me) by midnight the day we do it. Online homework is due each Friday at midnight.

Online classes

If you are ill, please let me know and join class via Zoom. But technology doesn't always work, sometimes I forget to click all the buttons to make it work, and the readability of class materials over Zoom is sometimes poor. So if you join class regularly by Zoom, it's your choice, but I do not recommend it.

Policies

1. For online homework, you may work in groups and you may seek help from the Learning Commons.

2. For examinations, you make use a teacher provided crib sheet, but no other tools. Using unauthorized materials while taking a test will earn you a failing course grade.

3. Generally, if you are ill or absent for any reason (including athletics), you must turn in your in class work on time. Permission to turn in work late must be made in advance, otherwise late in class work will count zero points.

4. Generally, if you are ill or absent for any reason (including athletics), you must turn in your online homework on time. Permission to turn in work online homework late must be made in advance, otherwise it will count zero points.

5. During class time, please refrain from playing with electronic devices. If your device usage distracts your classmates, I will ask you to put it away. If it's my impression that you are often not paying attention in class, I reserve the right to decline to help you during office hours.

6. The final examination will be *comprehensive* and it will be given during the time scheduled by the University. Except for *extraordinary circumstances* you must take the exam at this time.

7. Class cancellations due to weather or illness or other unplanned circumstances may require that we make minor adjustments to the course calendar, exam dates, and due dates or specifics for course assessments.

8. If you have questions about how your work has been graded, make an appointment with me immediately.

9. All printed materials, in either paper or digital form, that I provide for you in this class, are for your own use. Re-posting or sharing these materials with other persons is prohibited.

10. Please regularly check Canvas to verify that your scores have been recorded correctly. If I made a mistake in recording one of your grades, I'll correct it provided you saved your paper.

Examinations and Homework

Follow these guidelines while taking an examination or writing a solution to a homework question.

1. The work you turn in is expected to be *accurate, complete, concise, neat*, and *well-organized*. *You will not earn full credit on work that falls short of these expectations.*

2. While writing an examination, you may use a pencil, eraser, a scientific calculator, and a teacher provided crib sheet. If you are a non-native speaker of English, you may use a *paper* translation dictionary.

3. You may *not* use a phone or other such device during an examination–this includes checking the time on a phone. Phones and all such devices must be turned off and be out of sight while taking an exam.

4. For examinations, show your work. No credit will be given for multi-step problems without the necessary work. Your solution must contain enough detail so that I am convinced that you could correctly work any similar problem. Also erase or clearly mark any work you want me to ignore; otherwise, I'll grade it.

Students with Disabilities or Those Who are Pregnant

Students with Disabilities It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with the UNK Disabilities Services for Students (DSS) office, 175 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu

UNK Statement of Diversity & Inclusion: UNK stands in solidarity and unity with our students of color, our Latinx and international students, our LGBTQIA+ students and students from other marginalized groups in opposition to racism and prejudice in any form, wherever it may exist. It is the job of institutions of higher education, indeed their duty, to provide a haven for the safe and meaningful exchange of ideas and to support peaceful disagreement and discussion. In our classes, we strive to maintain a positive learning environment based upon open communication and mutual respect. UNK does not discriminate on the basis of race, color, national origin, age, religion, sex, gender, sexual orientation, disability or political affiliation. Respect for the diversity of our backgrounds and varied life experiences is essential to learning from our similarities as well as our differences. The following link provides resources and other information regarding D&I: `https://www.unk.edu/about/equity-access-diversity.php`

Students Who are Pregnant It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact Cindy Ference in Student Health, 308-865-8219. The following link provides information for students and faculty regarding pregnancy rights.[1]

Reporting Student Sexual Harassment, Sexual Violence or Sexual Assault Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes she or he may be the victim of sexual misconduct is encouraged to report to one or more of the following resources:

(a) Local Domestic Violence, Sexual Assault Advocacy Agency 308-237-2599

(b) Campus Police (or Security) 308-865-8911

(c) Title IX Coordinator 308-865-8655

Retaliation against the student making the report, whether by students or University employees, will not be tolerated.If you have questions regarding the information in this email please contact Mary Chinnock Petroski, Chief Compliance Officer (petroskimj@unk.edu or phone 308-865-8400.

[1] `http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students`

Course Calendar

Generally, we'll adhere to the scheduled exam dates even if we are ahead or behind with course work. When we are ahead or behind, the topics on the exams will be appropriately adjusted. There is no new topics scheduled for dead week, if we adhere to the schedule, we'll review during dead week, but if we fall behind, we'll cover new topics during dead week.

Week	Monday	Section(s)	Topic(s) & Assessments
1	8/23	§6.1 – §6.3	volumes using cross-sections and shells, arclength, **ICW 1**
2	8/30	§6.4 – §6.5	areas and work **ICW 2** **HW 1**
3	9/6	§6.6 –§7.1	center of mass and logarithms **ICW 3** **HW 2**
4	9/13	§7.2 – §7.3	separable DEs and hyperbolic functions **ICW 4** **HW 3**
5	9/20	§8.1–§8.2	integration by parts and trigonometric integrals **Exam 1, 21 September** **HW 4**
6	9/27	§8.3 – §8.5	trigonometric substitutions, rational functions, tables **ICW 5** **HW 5**
7	10/4	§8.6 – §8.7	numerical integration and improper integrals **ICW 6** **HW 6**
8	10/11	§9.1 – §9.2	sequences, infinite series **ICW 7** **HW 7**
9	10/18	§9.3 – §9.4	integral test, comparison **ICW 8** **HW 8**
10	10/25	§9.5 – §9.6	absolute convergence, alternating series **Exam 2, 26 October** **HW 9**
11	11/1	§9.7 –§9.8	Power series, Taylor series **ICW 9** **HW 10**
12	11/8	§9.9–§9.10	Taylor series **ICW 10** **HW 11**
13	11/15	§10.1 – §10.2	plane curves, calculus with plain curves **ICW 11** **HW 12**
14	11/22	§10.3 – §10.4	polar coordinates, polar equations **ICW 12** **HW 13**
15	11/29	§10.5	area and length in polar coordinates **Exam 3, 30 November** **HW 14**
16	12/6		catch up or review
17	12/13		**Exam 4, 13 December, 13:00–15:00**
			Final Exam, 16 December 10:30 – 12:30