

MATH 165: CALCULUS I

COURSE SYLLABUS

COURSE DESCRIPTION

COURSE: Calculus I CREDIT HOURS: 4 MEETING TIME: 12:00 PM MTWRF PS#: 20075

Introduction to limits, continuity, differentiation, mean value theorem, integration, fundamental theorem of calculus, and applications.

PREREQUISITES: Math 103 and Math 105.

INSTRUCTOR

Hi my name is Alissa Renner and I will be your instructor for Calc I. I am really excited for this semester, we are going to have a great time and learn lots! I am also expecting a baby this semester so that will add to the excitement. We will still meet the required number of meeting hours for this class it will just be done on a more creative schedule than usual! ☺ If you need to contact me outside of class hours the best way is to set up a meeting by emailing me at alissa.renner@willistonstate.edu. Also, feel free to stop by my office, 202A in the Science wing from 1PM – 2PM. As a last resort my cell number is 701.340.5199 ☺

TEXTBOOKS & MATERIALS

- *Calculus*, 9th or 10th Edition by Larson & Edwards (ISBN: 978-0-547-16702-2)
- Graphing calculator (TI-84 is recommended)
- Lots of pencils! Work completed in pen will not be accepted ☺

STUDENT LEARNING OUTCOMES

INSTITUTIONAL OUTCOMES

- I. Students will use reasoning skills to analyze and solve problems.

PROGRAM OUTCOMES

- A. Students will demonstrate and express numerical literacy symbolically, graphically, and in writing. (ILO 2)
- B. Students will apply observation, hypothesis construction, and experimentation to solve problems. (ILO 2)
- C. Students will use computer skills in an ever-changing technological environment to complete projects and tasks and express ideas. (ILO 2)

COURSE OUTCOMES

Students will be able to:

1. Construct a graph of a function based on calculus.
2. Calculate the area bounded by a function and the x-axis on a given interval.
3. Apply calculus to real life situations.

ASSESSMENT TASKS (FOR COURSE OUTCOMES)

PARTICIPATION

Participate in classroom activities demonstration knowledge of key calculus concepts.

RECALL & PRACTICE

Recall and practice key calculus concepts and techniques by completing assigned homework problems.

TESTS

Complete objective tests demonstrating mastery of concepts and process skills.

ESSAY QUESTIONS

Summarize understanding by completing essay questions about mastery of concepts.

PROCESS SKILLS

- Evaluate limits graphically, numerically, and analytically.
- Discuss continuity of a function on a given interval.
- Compute the equation of the tangent line to a function.
- Use the first derivative tests to sketch function curves.
- Evaluate limits at infinity.
- Use Calculus to solve optimization problems.
- Use integration to find the area under a given curve.
- Apply specialized integration and differentiation rules to natural logarithmic, trigonometric, and hyperbolic functions.
- Construct and solve differential equations to solve real-life situations.

CONCEPTS & ISSUES

- Limits
- Continuity
- Derivatives
- Implicit and explicit differentiation
- Extrema
- Rolle's Theorem
- Mean Value Theorem
- First Derivative Test (increasing/decreasing functions)
- Second Derivative Test (concavity)
- Curve sketching
- Optimization problems
- Newton's Method
- Antiderivatives
- Area under a curve

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| <ul style="list-style-type: none"> • Riemann Sums • The Fundamental Theorem of Calculus • Integration • Inverse functions • Hyperbolic functions | <ul style="list-style-type: none"> • Slope fields • Euler's Method • Growth & decay • Logistic equation • First-order linear differential equations |
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GRADING POLICY

FINAL EXAM – 25%

There will be a comprehensive final for this class.
You will be able to take your unit exam note sheets into this exam.

TESTS – 65%

There will be at least one test per chapter. These will be given using various methods to be decided at a later date. For each unit test you will be able to prepare one note sheet to use for the evaluation.

HOMEWORK ASSIGNMENTS/ ATTENDANCE/ QUIZZES – 10%

The homework assignments are selected to enable you to be successful on the chapter exams! DO YOUR HOMEWORK! Please 😊

GRADING SCALE

A 100% – 90% B 89% – 80% C 79% – 70% D 69% – 60% F 59% – 0%

STUDENT ACADEMIC INTEGRITY

Academic dishonesty, plagiarism, and cheating will not be tolerated and could result in dismissal from class and/or college.

DISABILITY STATEMENT

Williston State College is committed to providing equal access to students. If you have a disability which may impact your performance, attendance, or grades in this course that requires accommodations, you must first register with Disability Support Services (Stevens Hall Room 104A). Please note that classroom accommodations cannot be provided until your instructors receive an Accommodations Form, signed by you and the Disability Support Services Coordinator.

SCOPE AND SEQUENCE OF THE COURSE (SUBJECT TO CHANGE)

We will work through chapters p – 6 of the textbook.

Tests will be announced at least 3 class periods in advance.

IMPORTANT DATES

January 23 – Last day to drop without transcript notation April 11 – Last day to withdraw from term

ACADEMIC RESOURCES

Take advantage of academic resources available to you at Williston State College:

- **Academic Success Center:** Tutoring is provided to assist students who are either having difficulty or desiring extra help with specific subjects. This service is provided by qualified instructors or peer tutors proficient in specific subjects. The general subject areas for tutoring are accounting, math, computer application, English composition, and reading. Students wanting to utilize this service should contact their instructor. Fees are not charged for tutorial services. For more information, please contact Laurel Kaae (701-774-4221).
- **Smarthinking:** Web based program that offers live tutoring services in a variety of subject areas at no cost to the student. With Smarthinking you can access live tutors, ask a question and come back the next day for a response, and/or submit writing pieces to be reviewed. If you have further questions or need assistance in using this great tool, please stop in the Academic Success Center in Stevens Hall Room 104 or contact Katie Peterson at 701-774-4594.
- **MATHLAB!:** The math lab is located on the second floor of the Science Wing. The math lab hours are as follows:

Spring 2014 Amanda K. F. Davis amanda.k.davis@willistonstate.edu
 Office WSC Stevens Hall Science Center 200 Phone: 701-774-4504
 Or Cell: 850-902-1427

NORTH DAKOTA UNIVERSITY SYSTEM
 Favorites Main Menu Self Service Faculty Center My Schedule

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00AM	Planning	MATH 266 - 01 Lecture 8:00AM - 9:15AM WSC Stevens Hall SC 104	Planning	MATH 266 - 01 Lecture 8:00AM - 9:15AM WSC Stevens Hall SC 104	Planning	
9:00AM	MATH 103 - 03 Lecture 9:00AM - 9:50AM WSC Stevens Hall SC 102	MATH 266 - 1 Lecture 8:00AM - 9:15AM Nelson Science 115	MATH 103 - 03 Lecture 9:00AM - 9:50AM WSC Stevens Hall SC 102	MATH 266 - 1 Lecture 8:00AM - 9:15AM Nelson Science 115	MATH 103 - 03 Lecture 9:00AM - 9:50AM WSC Stevens Hall SC 102	Math Lab
10:00AM	Math Lab	Math Lab	Math Lab	Math Lab		
11:00AM					Math Lab	
12:00PM	MATH 265 - 01 Lecture 12:00PM - 12:50PM WSC Stevens Hall SC 102	MATH 265 - 01 Lecture 12:00PM - 12:50PM WSC Stevens Hall SC 102	MATH 265 - 01 Lecture 12:00PM - 12:50PM WSC Stevens Hall SC 102	MATH 265 - 01 Lecture 12:00PM - 12:50PM WSC Stevens Hall SC 102		
1:00PM	Lunch	Lunch	Lunch	Lunch	Lunch	
2:00PM		Math Lab		Math Lab	Planning	
3:00PM			Math Lab			
4:00PM	Math Lab	MATH 103 - 06 Lecture 4:00PM - 5:15PM WSC Stevens Hall 102		MATH 103 - 06 Lecture 4:00PM - 5:15PM WSC Stevens Hall 102		
5:00PM				Math Lab		
6:00PM						
7:00PM						