MATH 166-9976 & 14237: CALCULUS II

COURSE SYLLABUS

COURSE INFORMATION

MATH 166: Calculus, 4 credits, 11:00a MTWR

Course Description: Pre-requisite: "C" or higher in MATH 165
Applications and techniques of integration, polar equations, parametric equations, sequences and series, power series, and applications.

INSTRUCTOR

Amanda K.F. Davis, Stevens Hall 212C, 701-774-4504, Amanda.k.davis@willistonstate.edu
Cell: **850-902-1427**

Math Lab Hours/Office Hours: M 12p-6p   T 12p-4p   W 12p-4p   R 12p-4p   F 12p-4p

TEXTBOOK & MATERIALS

- University of North Dakota FREE ONLINE Textbook **(FALL 2021 TEXTS)**
- Graphing Calculator (recommended TI-83, TI-84 PLUS, etc.)
    - *NOTE*: These are available for checkout in the Learning Commons
- Notebook for calculus only; write with PENCIL ONLY. Erasable ink is okay.

STUDENT LEARNING OUTCOMES

INSTITUTIONAL OUTCOMES

I. Institutional Outcome: #2. Students will use reasoning skills to analyze and solve problems.

PROGRAM OUTCOMES

I. Institutional Outcome: #2. Students will use reasoning skills to analyze and solve problems.

COURSE OUTCOMES

1. Create models and determine outcomes to represent real life situations.

2. Perform integration on diverse functions.

3. Use correct calculus procedures to solve problems.

4. See the following webpage for further discussion: Student Learning Outcomes

ASSESSMENT TASKS (FOR COURSE OUTCOMES)

The general education outcomes and course objectives will be assessed by using:
28 Bookworks submitted electronically, 5 Reviews, 4 Tests, TWO(½) Take Home Tests, an ePortfolio Project, and a Final.

- Participate in classroom activities demonstrating knowledge of key calculus concepts.
- Practice key calculus concepts and techniques by COMPLETING ASSIGNED BOOKWORK PROBLEMS ON TIME.
- Complete objective tests demonstrating mastery of concepts and process skills.
- Summarize understanding by completing essay questions about mastery of concepts.
- Bookwork will be assigned over every section covered in lecture and MUST BE ATTEMPTED PRIOR TO THE NEXT CLASS MEETING.
- **BOOKWORK WILL BE COLLECTED EVERY THURSDAY/FRIDAY ELECTRONICALLY AND RETURNED THE FOLLWING MONDAY FOR A GRADE.**
- The students may ask for clarification of any bookwork problems, or test review problems during class, MATH LAB HOURS, by text message or by appointment.
- We will have 28 BOOKWORKS, 5 REVIEWS, 4 TESTS, TWO(½) TAKE HOME TESTS, an EPORTFOLIO PROJECT, and a FINAL.
- Test problems will be similar to those assigned for bookwork/review, and therefore, it will be difficult to achieve a passing grade without completing the bookwork and reviews.
- **In grading, I am as interested in your work as in your answers, so show as much work as reasonable, and do not just give the answers.**

PROCESS SKILLS

- Study Inverse Functions
- Exponents & Logarithms
- Apply various integration methods to complex integrals
- Determine whether sequences and series converge or diverge
- Find the radius and interval of convergence of a power series
- Represent functions by powers series
- Determine the Taylor or Maclaurin series of a function
- Graph in polar coordinates and using parametric equations
- Determine rates of change, area, and arc length in polar coordinates
- Use integration to find the arc length or surface of revolution of a solid

CONCEPTS & ISSUES

- Inverse Functions
- Derivatives of Inverses
- Exponential Functions
- Logarithmic Functions
- Hyperbolic Functions
- L'Hopital's Rule
- Integration by Parts
- Trigonometric Integrals
- Trigonometric Substitution
- Partial Fractions

- Integration Strategies
- Indeterminate Forms
- Improper Integrals
- Numerical Integration
- Sequences
- Series and Convergence
- Integral Tests
- ρ – Series
- Alternating series

- Ratio and Root Tests
- Power Series
- Taylor Polynomials
- Maclaurin Series
- Conics
- Plane Curves
- Parametric Equations
- Polar Coordinates
- Polar Graphs

ASSESSMENT PORTFOLIO

Each degree seeking student is required to maintain an assessment portfolio on Blackboard for his/her time at Williston State College. For this class you should include evidence of completing learning outcomes (ePortfolio Project for 10 points) of what you learned in this class.

GRADING POLICY

Assignments	Points	Grade Scale	
28 Bookworks (10 points each)	280		
5 Reviews (2 points each)	10	895-1000+	A
4 Tests (100 points each)	400	795-894	B
2 (½) Tests (50 points each)	100	695-794	C
ePortfolio (project)	10	595-694	D
Final Exam (Proctored)	200	0-594	F
Total Points Available	**1000**		

7.1	
7.2	
7.3	
7.4	
7.5	
8.1	
8.2	
8.3	
8.4	
8.5	
8.6	
8.7	
9.1	
9.2	
9.3	
9.4	
9.5	
9.6	
9.7	
9.8	
9.9	
9.10	
10.0	
10.1	
10.2	
10.3	
10.4	
10.5	

ACCESSIBILITY 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 Accessibility Support Services. Please note that classroom accommodations cannot be provided until your instructors receive an Accommodations Form, signed by you and the Accessibility Support Services Coordinator.

IMPORTANT DATES

• Last day to drop: September 1, 2021

• Last day to withdraw: November 12, 2021

• For important dates concerning holidays, last date to withdraw from class, etc., please visit the WSC catalog available on the website: www.willistonstate.edu

ACADEMIC RESOURCES

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

• Communication Lab: Supplemental instruction is provided to assist students who are either having difficulty or desiring extra help with specific subjects. The Communication Lab assists with composition, writing, communication, and public speaking. The Communication Lab is located in Stevens Hall 120. Students should make appointments at wsc.writinglab@willistonstate.edu. You can also call the Comm. Lab 701-774-4511.

• Math Lab: Supplemental instruction is provided to assist students who are either having difficulty or desiring extra help with specific subjects. The Math Lab assists with all math needs. The Math Lab is located in Stevens Hall room 209.

• Learning Commons: It's not just the Library anymore. In addition to the normal library functions (book checkout, research assistance, etc.), the Learning Commons serves a number of other functions. Get help with Blackboard and other Distance Ed questions. The "technology counter" provides an opportunity to play with some of the latest technology. Computers and printers available. If you have questions, call (701-774-4226). To contact the Office of Extended Learning please email wsc.extendedlearning@willistonstate.edu.

• 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 Learning Commons in Stevens Hall or contact Katie Peterson at 701-774-4594.

STUDENT ACADEMIC INTEGRITY

Work submitted for this course must follow Student Academic Integrity as cited in the WSC Student Code of Conduct, p. 14:

Acts of cheating and plagiarism are prohibited. Cases of academic dishonesty may be treated as an academic matter or as a disciplinary matter at the discretion of the instructor.

Cheating is defined as fraud, deceit, or dishonesty in an academic assignment. It includes using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement. All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition.

Self-plagiarism is the use of one's own previous work in another context without citing that it was used previously.

The instructor may reflect the incident of academic dishonesty through the assignment of the student's grade in the course. If the student has a grievance related to this action, that grievance would be directed to the Chair of the department in which the course is housed.

Alternatively, the instructor may refer the case as a disciplinary matter to the Vice President for Academic Affairs. The Vice President for Academic Affairs may refer the case to the Student Review Committee for action.

Breach of academic integrity may result in failure of the assignment, exam, and/or class.

STUDENT RESPONSIBILITIES:

- You are expected to read the relevant materials and participate in class discussions in a timely manner.
- You are expected to respect your fellow students and the Instructor in online and on campus discussions.
- It is your responsibility to ask questions when you are uncertain about assignments or course materials.
- If you have questions concerning grades, you should contact the Instructor immediately. You are responsible for checking Blackboard in a timely fashion to ensure that the grade recorded is your correct grade.
- It is your responsibility to contact the Instructor as soon as possible if you are encountering any issues that would hinder your performance in this class.
- You are responsible for earning your grade (with the Instructor making every effort to help you learn the material).
- If you are concerned about your grade, you should speak to the Instructor NO LATER than mid-term. No consideration will be given to request to adjust your grade at the end of the semester unless there is an error in calculations.

GRIEVANCE POLICY

Occasionally, students are dissatisfied with some dimension of the course. In such cases, students should first schedule a meeting with the instructor. If the student and instructor cannot reach a satisfactory resolution, the student should schedule a meeting with the Chair of the Department. (See page 10 of the Student Code of Conduct.)

TITLE IX

Survivors of sexual assault, domestic violence, and sexual harassment: please be aware that as an instructor, I am legally obligated to report all instances of sexual assault, domestic violence, and sexual harassment involving students. If you would like to speak to someone confidentially, please contact the WSC Counselor at (701)774-4212 (they are NOT mandated to report such instances).

FINAL EXAMS/ACTIVITIES

Students are required to take the final examination or engage in the final activity on the date and at the time presented as part of the course syllabus. Exceptions may be made only in emergency situations and in the case of scheduling conflicts with college sponsored events by promptly submitting a written request detailing the circumstances to the instructor of the course. Your meeting time for your final is:

December 15, 2021, 11am –1pm

CORONAVIRUS INFORMATION

Due to the ongoing scientific process of researching this new virus this syllabus is subject to change. Please be aware of any changes that may occur. You will be informed of changes via class announcements and/or emails.

SCOPE AND SEQUENCE OF THE COURSE (SUBJECT TO CHANGE)

Day/Week	Course Calendar/Instruction
Week 1	Syllabus
	7.1 # 1-9, 12, 14, 15, 17, 18, 20, 22, 24, 26, 30, 32
Week 2	7.2 # 1-3, 5, 6, 7, 9,10, 12,16, 18, 20-26, 28, 30, 31
	7.3 # 1-8, 10, 12, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29
Week 3	7.4 # 1-9, 12, 14, 16, 17, 19-21, 24-26, 28, 30-38, ADDITIONAL BOOKWORK on Derivatives and Integrals of Inverse Hyperbolic Trig Functions on Blackboard
	ePortfolio Project
Week 4	7.5 # 1-8, 11, 12, 15, 17, 18, 22, 27, 30, 33, 36, 40, 41, 42, 44, 47, 50, 52
	REVIEW
	TEST 1 (7.1-7.5) **GRADE (T1):_____**

Day/Week	Course Calendar/Instruction
Week 5	**TAKE HOME TEST 2: DUE October 7, 2021**
	8.1 # 1-4, 6, 9, 10, 13, 14-17, 19, 22, 23, 25, 28, 30, 31, 33, 35, 37, 38, 41-44
	8.2 # 1-6, 8, 11, 13, 14, 15, 17, 19, 21, 22, 27, 31, 34, 35, 37, 38, 40
Week 6	8.3 # 1-6, 8, 10, 12, 14, 15, 16, 18, 20, 21, 22, 24, 26
	8.4 # 1-8, 11, 14, 15, 19, 22, 26, 27, 31, 34, 36
	8.5 # 1-6, 13, 15, 16, 19, 20, 24, 26, 31, 34, 35, 38, 44
Week 7	8.6 # 1-8, 10, 12, 16, 18, 21, 22, 25, 28, 30, 31, 32, 34, 39, 43, 46
	8.7 # 1-8, 12, 15, 17, 18, 19, 21, 24, 25
	TAKE HOME TEST 2 (8.1-8.6mostly8.5*): DUE Oct 7, 2021 GRADE (THT2):_____
Week 8	REVIEW
	TEST 2 (8.1-8.7) GRADE (T2):_____
	9.1 # 1-6, 8, 9, 10, 14, 15, 18, 20, 24, 25, 26, 31, 35, 38, 40-42, 44-46
Week 9	9.2 # 1-12, 15, 16, 18, 19, 20, 24, 26, 27, 30, 33, 34, 35, 38, 40, 42, 44
	9.3 # 1-12 all
	9.4 # 1-5, 12, 16, 17, 19, 20, 21, 23, 24, 25, 28, 30, 32
Week 10	9.5 # 1-5, 7, 8, 9, 10, 13, 15, 16, 18, 21, 23, 25
	9.6 # 1-6, 8, 9, 10, 13, 15, 16, 17, 18, 19, 21, 22, 23, 24
	9.7 # 1-4, 7, 8, 9, 11, 13, 14, 17, 18, 21, 25, 33, 35, 37
Week 11	REVIEW
	TEST 3 (9.1-9.6) GRADE (T3):_____
	9.8 # 1-9, 11, 12, 13, 14, 19, 21, 22, 24, 27, 28, 29, 30, 32, 34, 36
	TAKE HOME TEST 3 (9.7-9.9): DUE Nov 10, 2021
	9.9 # 1-6, 7, 10, 13, 14, 15, 16, 18, 20, 24, 25, 30, 32, 33, 35
Week 12	9.10 # 1-6, 7, 10, 13, 17-20, 21, 25, 27, 31, 32
	10.0 # 1-26

Day/Week	Course Calendar/Instruction
	TAKE HOME TEST 3 (9.7-9.9): DUE Nov 10, 2021 GRADE (THT3):_____
Week 13	10.1 # 1-13, 17, 18, 21, 22, 24, 25, 26, 29, 30, 31, 32
	10.2 # 1-8, *9-17*USE YOUR CALCULATOR TO SEE THE GRAPHS, 19, 20, 21, 23, 24, 25, 27, 29, 30, 31, 33, 35, 36, 42, 43, 44, 46, 47, 50, 52, 53, 56, 57, 59, 61, 63
Week 14	10.3 # 1-9*, 11, 13-17*, 19, 21, 22, 25-29*, 31, 33-39*odds, 41, 42, 44,45,46, 48 NOTE: **5,13,25** ARE THE SAME PLANE CURVE, AS WELL AS PROBLEMS **6,14,26**
Week 15	10.4 # 1-7, 9, *11-32*USE YOUR CALCULATOR TO SEE THE GRAPHS,33,34,37,38,40,42,43,44-52,53,55,57,60
	10.5 # 1-16,19,20,21,22,23,25,26,27,28,29,30,31,33,34,37,39,40,41
	TEST 4 (10.0-10.5) **GRADE (T4):_____**
Week 16	REVIEW
	Dec 15, 2020, 11AM – 1PM