North Central State College

MASTER SYLLABUS	2025-2026

A. Academic Division: Liberal Arts

B. Discipline: Mathematics

C. Course Number and Title: MATH1151 Calculus II

D. Dean: Dr. Steven Haynes

E. Credit Hours: 5

F. Prerequisites: MATH1150 (Minimum grade of C- required)

G. Last Course/Curriculum Revision Date: Fall 2023 Origin date: 06/08/2011

H. Textbook(s) Title:

Calculus II w/Desmos (OHM Bundle) Access Code

- Author: Lumen Learning
- Copyright Year: 2024
- Edition:
- ISBN #9781640873629

I. Workbook(s) and/or Lab Manual: Supplies: TI-83 or TI-84 required

J. Course Description: This course is a continuation of MATH1150 Calculus I. Topics include integration and applications, calculus of exponential and logarithmic functions, hyperbolic functions, methods of integration, integration by parts, indeterminate forms and L'Hôpital's Rule, moments and centers of mass, fluid pressure and force, integration techniques, series including Taylor and Maclaurin, calculus of conics, calculus of parametric equations, and polar forms of conic sections including Kepler's Laws. This course meets the requirements for OTM Calculus II TMM006. If combined with MATH1150, it meets the requirements for OTM Calculus I & II sequence TMM017.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Employ a variety of integration techniques to evaluate special types of integrals and apply to physical, biological or economic situations.	Homework, Tests, Final Exam Throughout the term.
2. Approximate a definite integral by the Trapezoidal Rule.	Homework, Tests, Final Exam Early in the term.
3. Evaluate limits that result in indeterminate forms, including the application of L'Hôpital's Rule.	Homework, Tests, Final Exam Middle of the term.
4. Evaluate improper integrals.	Homework, Tests, Final Exam Late in the term.
5. Find, graph, and apply the equations of conics.	Homework, Tests, Final Exam Late in the term.
6. Determine the existence of, estimate numerically and graphically, and find algebraically the limits of sequences and determine whether a series converges.	Homework, Tests, Final Exam Late in the term.
7. Find the nth Taylor polynomial at a specified center for a function and estimate the error term.	Homework, Tests, Final Exam Late in the term.
8. Analyze curves given parametrically and in polar form and find the areas of regions defined by such curves.	Homework, Tests, Final Exam Late in the term.
9. Solve separable differential equations and understand the relationship between slope fields and solution curves.	Homework, Tests, Final Exam Middle of the term.

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at
https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Liberal Arts	**Discipline:**	Mathematics
Course Coordinator:	Sara K. Rollo		
Course Number:	MATH 1151 –921	**Course Title:**	Calculus II
Semester / Session:	Fall 2025-Session B	**Start / End Date:**	Oct 13th 2025-Dec 12th 2025

Instructor Information

Name:	Amanda Cooper	**Credentials:**	MS Mathematics
Phone Number:		**E-Mail Address:**	Acooper2@ncstatecollege.edu
Office Location:	Fallerius	**Office Hours:**	Friday from 9-10 am in Zoom

I. Topical Timeline (Subject to Change):

MATH 1151	Day 1 – Wednesday	Day 2-Friday
1 (Put dates of week)	**Complete Assignment:** Topic 1 HW Due 10/15/2025 **Outcomes/objectives:** Differentiate and integrate natural logarithmic, exponential, inverse trigonometric, and hyperbolic functions, and their inverses	**Complete Assignment:** Test Topic 1 Due 10/17/2025
2	**Complete Assignment:** Topic 2 HW Due 10/22/2025 **Outcomes/objectives:** Interpret and use slope fields in mathematical situations, solve differential equations involving growth and decay, solve by using separation of variables and solve first-order linear and non-linear differential equations	**Complete Assignment:** Test Topic 2 Due 10/24/2025
3	**Complete Assignment:** Topic 3 HW Due 10/29/2025 **Outcomes/objectives:** Find the area of a region between two curves, find the volume using both the disc and shell methods	**Complete Assignment:** Topic 4 HW Due 10/31/2025 **Outcomes/objectives:** Find arc length and surface of revolutions of a function, solve problems involving work, fluid pressure and fluid force and find centers of mass
4	**Complete Assignment:** Test Topics 3 and 4 Due 11/5/2025	**Complete Assignment:** Topic 5 HW Due 11/7/2025 **Outcomes/objectives:** Learn and use integration by parts, integrate trigonometric functions, and integrate using trigonometric substitution
5	**Complete Assignment:** Topic 6 HW Due 11/12/2025 **Outcomes/objectives:** Integrate using partial fraction decomposition, find integrals by numerical integration, use L'Hopital's Rule for indeterminate forms, and integrate improper integrals	**Complete Assignment:** Test Topics 5 and 6 Due 11/14/2025

6	**Complete Assignment:** Topic 7 HW Due 11/19/2025 **Outcomes/objectives:** Learn sequences, determine the convergence of a series, and use the integral test and p-series to determine convergence	**Complete Assignment:** Topic 8 HW Due 11/21/2025 **Outcomes/objectives:** Compare series to find convergence, determine convergence for alternating series and by the ratio and root tests
7	**Complete Assignment:** Topic 9 HW Due 12/3/2025 **Outcomes/objectives:** Use Taylor polynomials to approximate an elementary function, represent functions by power series, and find the convergence of Taylor and Maclaurin series	**Complete Assignment:** Test Topics 7, 8 and 9 Due 12/5/2025
8	**Complete Assignment:** Topic 10 HW Due 12/10/2025 **Outcomes/objectives:** Graph conics, plane curves that are expressed as parametric equations, review polar coordinates and polar functions and their equations, find the area and arc length of problems in polar form and find polar forms of conic sections	**Complete Assignment:** Final Exam Due 12/12/2025

II. Course Assignments:

1. Quizzes (if assigned)
2. Tests
3. Homework
4. Final Exam

III. Grading and Testing Guidelines:

Activity	Qty	Total Points	Percentage
Homework	10	239	25%
Tests	4	69	50%
Final	1	25	25%
Total			100%

IV. Examination Policy:

- Exams/Quizzes must be completed by the indicated due date.
- Due dates are on both Canvas and on Lumen.
- Exams/Quizzes are to be completed using the online component of the course.
- Check Canvas for the up-to-date grade on the test/quiz and in the class.
- All tests/quizzes are open starting the first day of the semester and will close on the due date. You can take the test/quiz any day leading up to the due date.
- There is a time limit for the test/quiz so be diligent while taking the test/quiz and be prepared prior to the start of it!!
- You will have TWO attempts per question for each quiz and test
- Please note that I can see if you have viewed the answer key. I will not grant extensions if you have viewed the answer key.

V. Class Attendance and Homework Make-Up Policy:

- Homework is to be completed using the online component of the course.
- Homework must be completed by the indicated due date.
- Due dates are on both Canvas and on Lumen.
- Check Canvas for the up-to-date grade on the homework and in the class.
- There is no time limit for the homework.
- You have multiple attempts to get the homework correct.
- All homework is open starting the first day of the semester and will close on the due date. You can complete the homework any day leading up to the due date.
- Be sure to utilize the resources available to you – The lecture videos and the resources available through Canvas

VI. Online Classroom Expectations:

- If you post or state a message/discussion/comment, then please be respectful to your classmates and to me.
- You are expected to complete the assignments by the indicated due dates.
- You can expect a turn- around time for both grades (for assignments completed on time) to be within 24 hours of the assignment due date passing and communication to be within 24 hours of being received
- The assignments move quickly. Be sure to write due dates and to stay organized.
- Ask Questions Often!
- Any student who requires reasonable accommodations related to a disability should inform the course instructor and the Coordinator of Specialized Services (Room 138 in Kee Hall; phone 419-755-4727)