



Course Title: Calculus III
Course #: MATH-2530_ONL
Credit Hours: 4
Semester: Spring 2022

Instructor: *Abdulmtalb Hussien, Ph.D.*

Primary Contact: *Blackboard, WebAssign*

Email address: ahussen@navajotech.edu

Class Meetings: *Online*

Office: *Nursing Building 211*

Required Materials: *WebAssign access code*

Office Hours: *By Appointment*

Welcome to Math 2530- Calculus III. I am so happy to get a chance to teach this course and am hoping that we have a very wonderful semester together.

Textbook (not required): Calculus, 11th Edition
Ron Larson & Bruce Edwards
ISBN-13: 978-1-337-27535-4
ISBN-10: 1-337-27535-2

Tools: Scientific Calculator / Graphing Calculator

Lab Fee: None

Required software: WebAssign Access code. WebAssign is accessed through Blackboard. You will use this to do online homework. The access code is needed to access the course.

Mission Statement

Navajo Technical University's mission is to provide college readiness programs, certificates, associate, baccalaureate, and graduate degrees. Students, faculty, and staff will provide value to the Diné community through research, community engagement, service learning, and activities designed to foster cultural and environmental preservation and sustainable economic development. The University is committed to a high quality, student-oriented, hands-on-learning environment based on the Diné cultural principles: *Nitsáhákees, Nahátá, Íina, Siihasin.*

Course Description

Continuation of Calculus II including multivariate and vector calculus, level curves and surfaces, partial derivatives, gradient, directional derivatives, tangent planes, optimization, multiple integrals in Cartesian, cylindrical and spherical coordinate systems. At times, the learning process

relating to the Navajo culture in the areas of Nitsahakees, Nahatah, Iina, and Sihasin will be covered as well as other cultures (multi-cultural studies).

Instructional Methods

Weekly modules will have online videos within our Blackboard course shell for each session. Students will be expected to read and practice all examples in each session, module topics and watch online videos throughout the week and complete the weekly exercises and assignments in a timely manner. You should ensure that you have completed the corresponding readings and videos and also assigned exercise problems. **Assignments are due Sunday at midnight. Students may complete the assignments at any point during that window.** Your weekly submission should be a pdf file that documents your solutions and should be uploaded into Blackboard.

Course Requirements

Students are expected to study the notes for every session on Blackboard and complete lesson topic problems. **Every week students will complete a quiz/test of that session's content. There will be a midterm exam at the end of 8th week and a comprehensive final exam at the end of week 17. Students are encouraged to begin this week's module as soon as possible.**

MATH 2530-01 Schedule, Spring 2022	
Week	Chapters Covered
1 01/17	Chapter 11: Section 11.1 Martin Luther King Jr. Day, Jan 17, 2022 Last Day Add/Drop Classes w/out W, Jan 21, 2022
2 02/24	Chapter 11: Section 11.2 & Section 11.3
3 01/31	Chapter 11: Section 11.4 & Section 11.5 & Quiz 1
4 02/07	Chapter 12: Section 12.1 & Section 12.2 & Section 12.3
5 02/14	Chapter 12: Section 12.4 & Section 12.5 & Quiz 2
6 02/21	Chapter 13: Section 13.1 & Section 13.2 & Section 13.3 Holiday – President's Day, Feb 21, 2022 Spring Graduation Petitions Due, Feb 25, 2022
7 02/28	Chapter 13: Section 13.4 & Section 13.5 & Quiz 3

8 03/07	Review & Midterm Exam
9 03/14	Spring Break Mar 14 – 18, 2022
10 03/21	Chapter 13: Section 13.6 & Section 13.7
11 03/28	Chapter 13: Section 13.8 & Section 13.10 & Quiz 4 Last day to Withdraw With a W, Mar 31, 2022
12 04/04	Chapter 14: Section 14.1 & Section 14.2 & Section 14.3
13 04/11	Chapter 14: Section 14.4 & Section 14.5 & Quiz 5
14 04/18	Chapter 14: Section 14.6 & Section 14.8
15 04/25	Chapter 15: Section 15.1 & Section 15.2 & Section 15.3 & Quiz 6
16 05/02	Chapter 15: Section 15.4 & Section 15.8
17 05/09	Final Exam

COURSE OUTCOMES	COURSE MEASUREMENTS
Use vector notation correctly; perform vector operations; perform operations on vector valued functions and functions of a parameter.	Formative assessment, Summative assessment, Applications
Identify and graph the equations of cylinders and quadratic surfaces in 3-dimensional space; determine the domain of continuity of a vector valued function and of a function of multiple variables.	
Calculate double and triple integrals independently and with their geometric representations as surfaces, areas and volumes; calculate iterated integrals in polar, cylindrical and spherical coordinate systems.	
Applications of differentiation	

Grading

Quizzes	25%
Homework/ Classwork	23%
Student Introduction	2%
Midterm	25%
Final Exam	25%

Total	100%
-------	------

Grading Scale:

Class Percentage	Letter Grade
90-100 %	A
80-89 %	B
70-79 %	C
60-69 %	D
< 60 %	F

Topics:

Vectors and Geometry of Space
 Vector-Valued Functions
 Functions of Several Variables
 Multiple Integration
 Vector Analysis

Assessment Pieces:

The student will be assessed in a variety of ways:

- Homework Quizzes/Midterms / Finals

Course Policies

Each student must do his or her own homework and case studies. Discussion among students on homework and cases is encouraged for clarification of assignments, technical details of using software, and structuring major steps of solutions - especially on the course's Web site. Students must do their own work on the homework and exam. Cheating and Plagiarism are strictly forbidden. Cheating includes but is not limited to: plagiarism, submission of work that is not the student's own, submission or use of falsified data, unauthorized access to exam or assignment, use of unauthorized material during an exam, supplying or communicating unauthorized information for an assignment or exam.

Attendance Policy

Students are expected to be on Blackboard and WebAssign weekly, and follow the instructions closely. Attendance in the course will be measured by the student's communication with the faculty member, and completion of every test and project on time. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or

unexplained absences to the Counseling Department for investigation and potential intervention. Students who are not actively participating in course activities will receive an ‘early alert’ within the course.

Make-up Quiz / Test:

A student who misses a quiz / test might be able to reschedule a make-up Test. The window of opportunity for the make-up assessment is up to a week after the quiz / test date. The teacher may opt not to give any make-up assessment beyond the week or upon returning the graded quiz. Failure to do the quiz/test means a grade of zero for that particular assessment.

Study Time Outside of Class for Face-to-Face Courses

For every credit hour spent in a class, a student is expected to spend two hours (2) outside of class studying the course materials.

Academic Integrity

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student’s submitted work must be the student’s own. Students who engage in academic dishonesty diminish their education and bring discredit to the University community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor.

Diné Philosophy of Education

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát’á, Íina and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

Students with Disabilities

The Navajo Technical University and the Math department are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability, or needs special accommodations should inform NTU in accordance with the procedures of the subsection entitled “Students with Disabilities” under Section 7: Student Support Programs, NTU Student Handbook.