

Northwest Arkansas Community College

Division of Science and Mathematics

Discipline Code

MATH

Course Number

2574

Course Title

Calculus III

Catalog Description

A continuation of MATH 2564. Topics include parametric curves, vectors and vector-valued function, surfaces, partial differentiation, multiple integrals and vector calculus.

Prerequisites

MATH 2554 and 2564 with grades of C or better, or appropriate placement scores.

Credit Hours

3 credit hours

Contact Hours

3 contact hours

Load Hours

3 load hours

Target Audience/Transferability

This course is designed for transfer students who are interested in technical or science based fields. It is the third in a sequence of three differential and integral calculus courses and transfers as such.

Student Learning Outcomes

Upon successful completion of this course students should exhibit mastery of certain knowledge and basic skills. These skills will include, but not be limited to:

1. operations with vectors
2. graphing in 3-space
3. calculus of vector-valued functions including velocity, acceleration, arc-length and curvature
4. Differentiate multivariate functions
5. Optimize functions of several variables
6. Integrate and apply techniques of multiple integration
7. Vector analysis (including line integrals, Green's Theorem, Divergence Theorem, Stokes's Theorem)

Required Forms of Assessment

Each instructor must include a set of 6 departmental final exam questions on his or her final exam. These questions will be in direct support of the specific objectives stated in the Core Course Objectives, will be based on material covered in the Required Text Coverage section, and be similar to the questions on the Departmental Review Sheet. These questions should be evenly weighted on the final and should compose at least 10% of the students' overall grade in the course. The questions will be graded using a departmental grading rubric utilizing a 10-point scale per question. The results of these questions and overall student performance will be reported when final grades are turned in.

Please note that the only resource other than a graphing calculator allowed for use by students during the final exam will be a departmental formula sheet. It is also a departmental policy that no TI-89 or TI- 92 or comparable calculators be allowed for use during the final exam.