COURSE OUTLINE: MTH626 - CALCULUS

Prepared: Mathematics Department
Approved: Karen Hudson, Dean, Community Services and Interdisciplinary Studies

Course Code: Title	MTH626: CALCULUS
Program Number: Name	4061: AVIATION TECHNOLOGY
Department:	MATHEMATICS
Academic Year:	2024-2025
Course Description:	This course is a continuation of MTH613 and provides the student with a more advanced study of calculus. Topics of study include differentiation and integration of algebraic, trigonometric, exponential and logarithmic functions with an emphasis on applications.
Total Credits:	4
Hours/Week:	4
Total Hours:	56
Prerequisites:	MTH613
Corequisites:	There are no co-requisites for this course.
Substitutes:	MTH577
This course is a pre-requisite for:	MTH654
Essential Employability Skills (EES) addressed in this course:	EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 10 Manage the use of time and other resources to complete projects.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Books and Required Resources:	Basic Technical Mathematics with Calculus by Washington Publisher: Pearson Edition: 11th ISBN: 9780134289915 Calculator-SharpEL-520XTB (available in the bookstore)

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Applications of Integration	1.1 Applications of the Definite Integral 1.2 Areas by Integration 1.3 Volumes by Integration 1.4 Other Applications of Integration

Course Outcome 2	Learning Objectives for Course Outcome 2
2. Understanding topics in Trigonometry	2.1 Observe Fundamental Trigonometric Identities 2.2 Recognizing Sum and Difference Formulas 2.3 Recognizing Double-Angle and Half-Angle Formulas 2.4 Solve Trigonometric Equations
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Differentiation of the Transcendental Functions	3.1 Finding Derivatives of Sine and Cosine Functions 3.2 Finding Derivatives of other Trigonometric Functions 3.3 Finding Derivatives of the Inverse Trigonometric Functions 3.4 Finding Derivatives of Logarithmic and Exponential Functions 3.5 Understanding L`Hospitals Rule 3.6 Applications
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Techniques of Integration	4.1 Understanding the General Power Formula 4.2 Understanding the Basic Logarithmic Form 4.3 Understanding the Exponential Form 4.4 Recognizing the Basic Trigonometric Forms 4.5 Recognizing the Other Trigonometric Forms and the Inverse Forms

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments/Quizzes/Attendance	30%
Tests	70%

Date: August 26, 2024

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.