Bachelor of Science in Aviation Maintenance

Course Code	TechMath 121	**Course Title**	Differential Calculus
Credit Units	3 Units	**Time Duration**	3 hours/week
Program Placement	1st Semester 2nd Year	**Prerequisite**	Math 112 (Plane Trigonometry)
A. Course Description	This course covers the basic formulas in finding the derivative, the different techniques of differentiation for different kinds of functions and their applications especially in finding the maxima and minima and in solving problems related to time rates.		
B. Course Objectives	The syllabus is designed to equip students to:		
	Acquire basic understanding about the importance of finding the derivative of a function and its applications.		
	Apply the different differentiation formulas and techniques in finding the derivative of different functions.		
	Analyze problems related to finding the maxima and minima using derivatives and in solving problems about time rates.		
	Identify the different formulas of finding the derivative and when they should be used.		
	Solve/Find for the derivative of different functions using appropriate formulas and method.		

C. Course Outline and Timeframe

Week	Topic
1-6	1.0 Introduction to Differential Calculus 1.1 What is Differential Calculus? 1.2 What is the derivative? 1.3 Finding the Derivative a. Derivatives of Constant Functions and Powers b. Adding, Subtracting, and Multiplying by a Constant c. The Product Rule d. The Quotient Rule e. The Composite Function Rule (The Chain Rule)

Prepared By:	Reviewed By:	Approved By:	
JENNY D. RAGAY, BSCoE **Instructor** *(Signature Over PRINTED Name)*	ALEJADO, BENJAMIN Jr., B. MTE *(Signature Over PRINTED Name)* **Department Head/ Program Coordinator**	**GLICERIO E. DURAN JR., Ed.D.** **School/College Dean**	**ROSEMARIE T. PINILI, Ed.D., Ph.D.** **Vice President, Academic Affairs** **Effective Date:**_____
Code#: DTAL_OVAA_CEDD_EEDC/ ESDC_SYLL_VER1_08082015_UC	**Revision#: 1** **Date Reviewed:**_____	**Date Approved:**_____	
	____UNCONTROLLED ____CONTROLLED		**____Standard____Law____Regulation**

7-8	2.0 Implicit Differentiation
9	**MIDTERM EXAMINATION**
10-17	3.0 Derivatives of Exponential and Logarithmic Functions 4.0 Derivatives of Trigonometric Functions 5.0 Finding Maxima and Minima using Derivatives 6.0 Time Rates
18	**FINAL EXAMINATION**

D. Required Reading	
1. Textbook	Thomas, C. (1997). Introduction to Differential Calculus. Mathematics Learning Center, University of Sydney. Retrieved from http://ocw.mit.edu/ans7870/resources/Strang/Edited/Calculus/Calculus.pdf Strang, G.(n.d.). Calculus. Wellesley, MA: Wellesley-Cambridge Press. Retrieved from http://ocw.mit.edu/ans7870/resources/Strang/Edited/Calculus/Calculus.pdf
2. Internet	Calculus(n.d.). Retrieved from https://www.mathsisfun.com/calculus/index.html
E. Suggested Readings and References	
1. Textbook	Crowell, R.H., Slesnick, W.E.(2008). Calculus with Analytic Geometry(version 3.0.3). Retrieved from https://math.dartmouth.edu/~doyle/docs/calc/calc.pdf
2. Internet	https://www.mathtalino.com
F. Course Requirements	Quizzes/Activities Major Examinations (Midterm and Final Examinations) Attendance on the Online Meetings

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G. Grading System	Major Examinations ……40% Online Activities/Quizzes……..40% Attendance on Online Sessions……..20% Total 100%
H. Class Policies on Data Privacy	1. Always protect your personal information. Only provide the information if it is necessary and you understand how it will be used and that it will be treated with utmost care and confidentiality. 2. Always ask for permission from people included in pictures if you are to post it online. For example, if you take pictures during our online class. 3. Please use strong passwords for the accounts you use in our Google classroom and FB group. If possible, don't use the same password for all your accounts. Inform the instructor immediately if your account has been compromised. Use 2-step authentication if possible, to protect your accounts. 4. Always check the settings of the platforms that you are using especially about data privacy settings. 5. Protect your own privacy and respect other's privacy. 6. Check this link for tips about personal data privacy: https://www.privacy.gov.ph/30-ways/
I. Consultation Hours	E-Mail Address: jragay03@gmail.com

TechMath 121 Learning Plan

Course Code	TechMath 121	**Course Title**	Differential Calculus
Credit Units	3 Units	**Time Duration**	3 hours/week
Program Placement	1st Semester 2nd Year	**Prerequisite**	Math 112 (Plane Trigonometry)

Content/ Topic	Desired Learning Outcomes (DLOs)	Teaching and Learning Activities (TLAs)	Resources (Material and Readings)	Assessment Task (ATs)
1.0 Introduction to Differential Calculus 1.1 What is Differential Calculus? 1.2 What is the derivative? 1.3 Finding the Derivative a. Derivatives of Constant Functions and Powers b. Adding, Subtracting, and Multiplying by a Constant c. The Product Rule d. The Quotient Rule e. The Composite Function Rule (The Chain Rule)	1. Understand the importance of the study of Differential Calculus and its applications. 2. Ability to solve/find for the derivative of constant functions, and powers. 3. Apply the appropriate rules in finding the derivative of functions.	Lecture/Discussion via Google Meet, Recorded lecture videos Activity via Google classroom/ Quizizz	Textbook – Thomas, C. (1997). Introduction to Differential Calculus. Mathematics Learning Center, University of Sydney. Retrieved from http://ocw.mit.edu/ans7870/resources/Strang/Edited/Calculus/Calculus.pdf Internet – Calculus(n.d.). Retrieved from https://www.mathsisfun.com/calculus/index.html	Activities/Online Assignment Sample Evaluation: 1. Discuss the importance of the study of Differential Calculus and what its applications are. 2. Explain what a derivative is. 3. Given a set of functions, solve for the derivatives using the appropriate rules.

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Content/ Topic	Desired Learning Outcomes (DLOs)	Teaching and Learning Activities (TLAs)	Resources (Material and Readings)	Assessment Task (ATs)
2.0 Implicit Differentiation	1. Understand what implicit differentiation is. 2. Ability to identify functions where implicit differentiation should be applied. 3. Ability to solve for the derivative of a function using implicit differentiation.	Lecture/Discussion via Google Meet, Recorded lecture videos Activity via Google classroom Quizizz	Textbook – Thomas, C. (1997). Introduction to Differential Calculus. Mathematics Learning Center, University of Sydney. Retrieved from http://ocw.mit.edu/ans7870/resources/Strang/Edited/Calculus/Calculus.pdf Internet – Calculus(n.d.). Retrieved from https://www.mathsisfun.com/calculus/index.html	Activities/Online Assignment Sample Evaluation: 1. Given a set of functions, solve for the derivative by applying implicit differentiation using both the shortcut and long method.

Content/ Topic	Desired Learning Outcomes (DLOs)	Teaching and Learning Activities (TLAs)	Resources (Material and Readings)	Assessment Task (ATs)
3.0 Derivatives of Exponential and Logarithmic Functions 4.0 Derivatives of Trigonometric Functions 5.0 Finding Maxima and Minima using Derivatives 6.0 Time Rates	1. Able to find the derivative of exponential, logarithmic and trigonometric functions by applying the appropriate formulas. 2. Able to solve problems involving maxima, minima and time rates.	Lecture/Discussion via Google Meet, Recorded lecture videos Activity via Google classroom Quizizz	Textbook - Thomas, C. (1997). Introduction to Differential Calculus. Mathematics Learning Center, University of Sydney. Retrieved from http://ocw.mit.edu/ans7870/resources/Strang/Edited/Calculus/Calculus.pdf Internet – Calculus(n.d.). Retrieved from https://www.mathsisfun.com/calculus/index.html	Activities/Online Assignment Sample Evaluation: 1. Given a set of functions, solve for the derivative of exponential, logarithmic and trigonometric functions using the right formulas. 2. Given a set of problems involving maxima and minima, and time rates; understand what is ask; and compute for the correct answer by using your knowledge about derivatives and its applications.