East West University
Course Outline

Department of Mathematical and Physical Sciences

Semester: **Spring 2022**

Course Title: Differential and Integral Calculus **Course Code:** MAT101
Pre-Requisite: None **Credit Hour:** 3

Course Instructor: Dr. Anindita Paul, Associate Professor, Dept. of MPS
Office Room: Room# 441, Block-C **Phone Number:** 09666775577 (255)
E-mail Address: apaul@ewubd.edu

Class Schedule and Office Hour:

Day	Course Code	Class Time and Room No.	Office Hour
Sunday	MAT102(1)	10:10 am – 11:40 am 358	8:30 am – 10:00 am 12:00 pm – 1:00 pm
	MAT102(2)	1:30 pm – 3:00 pm 358	
Monday	MAT101(9)	8:30 am – 10:00 am 436	10:30 am – 11:30 am
	MAT101(14)	11:50 am – 1:20 pm 359	
Tuesday	MAT102(1)	10:10 am – 11:40 am 358	8:30 am – 10:00 am 12:00 pm – 1:00 pm
	MAT102(2)	1:30 pm – 3:00 pm 358	
Wednesday	MAT101(9)	8:30 am – 10:00 am 436	10:30 am – 11:30 am
	MAT101(14)	11:50 am – 1:20 pm 359	
Thursday	-	-	8:30 am – 10:30 am

Goal of the Course:

The main goal/objective of the course is the deep understanding of the fundamental concepts of Differential and Integral Calculus which the engineering departments consider necessary for the continuation of studies.

Course Learning Outcome:

At the end of the semester, the students will able to

- ♣ know detail about functions and sketch graph of function;
- ♣ know the procedures of differentiation accurately
- ♣ solve increasing, decreasing problems and maxima, minima problems
- ♣ perform accurately definite and indefinite integration

Course Contents:

Differential Calculus

Limit, Continuity and Differentiability, Successive differentiation of various types of functions. Leibnitz's theorem, Rolle's theorem, Mean value theorem, Taylor's and Maclaurin's theorems in finite and infinite forms, Lagrange's form of remainders, Cauchy's form of remainders. Expansion of functions. Evaluation of indeterminate forms by L'Hospital rule. Partial differentialtion. Euler's theorem. Tangent and Normal. Concavity of functions. Determination of maximum and minimum values of functions and points of inflection with Applications. Curvature, Asymptotes.

Integral Calculus

Integration by the method of substitution. Standard integrals. Integration by successive reduction. Definite integrals, its properties and use in summing series. Walli's formulae. Improper integrals. Beta function and Gamma function. Area under a plane curve and area of a region enclosed by two cueves in Cartesian and polar co-ordinates. Volumes of solids of revolution. Volume of hollow solids of revolution by shell method. Area of surface of revolution. Jacobians. Multiple integrals with applications.

Text Book

Calculus (tenth edition)

- Howard Anton, IRL Bivens and Stephen Davis

Reference Book

Calculus and Analysis

- M. R. Spiegel, Schaum's outline series.

Term Examinations:

Examination	Section 9 and Section 14
Term-1	March 9, 2022 (Wednesday)
Term-2	April 6, 2022 (Wednesday)
Final	May 11, 2022 (Wednesday)

Score Distribution:

Term-1 Examination	: 15%	Assignment	: 10%
Term-2 Examination	: 15%	Presentation	: 10%
Final Examination	: 15%	Class Performance	: 5%
Viva Voce	: 15%	Class Attendance	: 5%
Class Test/Quizzes	: 10%	Total	: 100%

Grading Policy:

97%	-	100%	: A+	80%	-	82%	: B	67%	-	69%	: C-
90%	-	96%	: A	77%	-	79%	: B-	63%	-	66%	: D+
87%	-	89%	: A-	73%	-	76%	: C+	60%	-	62%	: D
83%	-	86%	: B+	70%	-	72%	: C	0%	-	59%	: F

Important Dates:

Payment schedule for the students:

February 14, 2022	Last day to clear Incomplete ("I") grades
February 15, 2022	Last day to add course(s) Last day to drop course(s)/semester with 100% refund
February 16, 2022	Last day of payment of tuition fees without late fee Last date of payment only for adding course(s)
February 22, 2022	Last day of Tuition Payment with Late Fee of Tk. 500/-
February 27, 2022	Last day of Tuition Payment with Late Fee of Tk. 1000/-
February 28, 2022	Last day to drop course(s)/semester with 85% refund
March 24, 2022	Last day to drop course(s)/semester with 50% refund
April 18, 2022	Last day to withdrawal course(s)/semester

Special Instruction:

- ♣ Students are requested to join in the class on time. Students will get attendance if they are present for the total class time.
- ♣ After joining students are requested to turn off their microphone and video. But when students are asked to answer any question then before answering the question at first they must turn on both the microphone and the video.
- ♣ Students should wear proper dress during the class time and the backdrop should be decent.
- ♣ **Students must turn on their video during Quizzes, Viva-voce, Term Examinations and Final Examinations.**
- ♣ Students are requested to install scanner (example: CS Scanner) in their mobile telephone which will help them to submit class work (during class time), assignments (on a scheduled time), Term/Final examination answers, etc.
- ♣ **No make-up quizzes and assignment** will be held.
- ♣ **There is zero tolerance for cheating at EWU. Students caught with cheat sheets in their possession, whether used or not used, &/or copying from cheat sheets, writings on the palm of hand, back of calculators, chairs or nearby walls, etc. would be treated as cheating in the exam hall. The only penalty for cheating is expulsion from EWU.**

(**Dr. Anindita Paul**)
Date: 7.2.2022