

Ma 19-G – Applied Calculus for Business



ATENEO DE MANILA SESQUICENTENNIAL
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1. Schedule

1230–1330, MWF, CTC–203, 0900–1030, TTh, SEC A–214

2. Prerequisite

Passing grade of **Ma 11**

3. Textbooks and References

1. *Calculus for Business, Economics, and the Social and Life Sciences* by Hoffman and Bradley, Mc Graw Hill, 2007.

4. Course Outline and Time Frame

1. 1. Limits; Differentiation: Basic Concepts (16 hrs)

Limits (1.5)
One-sided Limits and Continuity (1.6)
The Derivative (2.1)
Techniques of Differentiation (2.2)
Product and Quotient Rules; Higher-order Derivatives (2.3)
The Chain Rule (2.4)
Marginal Analysis (2.5)

Long Exam 1, Tentative: Tuesday, Dec 1, 2009 100 pts

2. Application of the Derivative (14 hrs)

Increasing and Decreasing Functions; Relative Extrema (3.1)
Concavity and Points of Inflection (3.2)
Curve Sketching (3.3)
Optimization (3.4)
Additional Applied Optimization (3.5)

Long Exam 2, Tentative: Tuesday, Jan 5, 2010 100 pts

3. Exponential and Logarithmic Functions (10.5)

Exponential Functions (4.1)
Logarithmic Functions (4.2)
Differentiation of Logarithmic and Exponential Functions (4.3)
Additional Exponential Models (4.4)
Implicit Differentiation and Related Rates (2.6)

Long exam 3, Tentative: Tuesday, Jan 19, 2010 100 pts

MIDTERM Exam, Tentative: Friday, Jan 22, 2010 200 pts

4. Integration (14.5 hrs)

Binomial Coefficients (5.4)
Antidifferentiation: The Indefinite Integral (5.1)
Integration by Substitution (5.2)
The Definite Integral and the Fundamental Theorem of Calculus (5.3)
Applying Definite Integration: Area Between Curves and Average Value (5.4)

Long Exam 4, Tentative: Thursday, Feb 11, 2010 100 pts

5. Additional Topics in Integration (10.5 hrs)

Integration by Parts (6.1)
Introduction to Differential Equations (6.2)
Additional Applications in Business and Economics (5.5)

Long Exam 5, Tentative: Thursday, Feb 25, 2010 100 pts

6. Calculus of Several Variables (14 hrs)

Functions of Several Variables (7.1)
Partial Derivatives (7.2)
Optimizing Functions of Two Variables (7.3)
Constrained Optimization: The Method of Lagrange Multipliers (7.4)
Double Integrals (7.6)

Long Exam 6, Tentative: Tues, March 16, 2010 100 pts

Final Exam (week of March 22 – 27, 2010)

5. Course Requirements and Grading System

- 6 Long Exams (100 points each; lowest score will be cancelled)
- Midterm Exam (200 points)
- Final Exam (200 points)
- Quizzes, HW, Recitation, etc. (max. 100 points)

Total Possible Score: at most 1,000 points

$$\text{Final Grade} = \frac{\text{Student's Total Score}}{\text{Total Possible Score}} \times 100\%$$

Percentage of the total Score	Equivalent letter grade
92% – 100%	A
86% – 91%	B+
77% – 85%	B
69% – 76%	C+
60% – 68%	C
50% – 59%	D
49% and below	F

6. Class Policies

1. A make up exam will be given for a missed long exam subject to a written approval by the Chairperson of the Mathematics Department.
2. A student with a class standing of 90% and above prior to cancellation of lowest exam may be exempted from taking the final exam.

7. Additional Important Dates to Remember

Date	Day	Event
11/13/09	Friday	2nd Sem Faculty Day
11/30/09	Monday	Bonifacio
12/08/09	Tuesday	Feast of the Immaculate Conception
12/20/09 – 01/03/2010		Christmas Break
02/01/10	Monday	ADMU President's Day
02/22/10	Monday	People Power Day

8. Consultation Hours

Mon-Tue-Wed-Thu 1330-1430