

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
Palestine Polytechnic University
College of Applied Sciences
Department of Mathematics
Syllabus of Calculus I

Course: SC111 (4004) Calculus I, 3C.H., Second Semester 2019/2020.

Lecture Time and Location: Sat. (11:30-12:45), Thur. (4:00-5:15), B+511.

Instructor: Dr. Monjed H. Samuh

Office: B+503.

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Office Hours: Sat. (11:00-11:30), Thursday (3:00-4:00).

Course Description:

Limits, Limits involving infinity, Continuity, Rates of change, Derivatives, Tangent lines, Chain rule, Parametric equations, Implicit differentiation, Related rates, Extreme values, Mean value theorem, Shape of a graph, Optimization, Indefinite integrals, Definite integrals, Integration by substitution, Fundamental theorem, Area.

Textbook:

Thomas' Calculus. Twelfth Edition.

Course Outline and Calendar:

Topics	Book Chapters	Weeks
Limits and Continuity	Chapter 2	4
Differentiation	Chapter 3	2
First Exam		
Differentiation	Chapter 3	2
Applications of Derivatives	Chapter 4	4
Second Exam		
Integration	Chapter 5	1.5
Applications of Definite Integrals	Chapter 6	1.5
Final Exam		
Total		15

Intended Learning Outcomes:

After the completion of this course, students are expected to be able to:

Chapter2:

- Find the rate of change of a function.
- Find the limit of a function.
- Find the limit of a function involving infinity.
- Find the horizontal and vertical asymptotes for a function.
- Test the continuity of a function.

Chapter 3:

- Find the tangent line.
- Find the derivative of a function by the definition.
- Find the derivative of a function by the rules.
- Derive the trigonometric functions.
- Find the derivative of a function by the chain rule.
- Find the derivative of implicit equation.
- Solve related rates problems.

Chapter 4:

- Find extreme values of a function.
- Solve problems on mean value theorem.
- Sketch the graph of a function.
- Solve optimization problems.

Chapter 5 and 6:

- Integrate functions by integral formulas.
- Integrate functions by substitution method.
- Find the area between two curves.
- Solve problems on fundamental theorem.

Grading System:

First Exam: 25%

Second Exam: 25%

Quizzes: 10%

Final Exam: 40%

Good Luck