SUMMER SESSION 1
May 28 – June 27, 2019

MATH METHODS FOR BUSINESS: CALCULUS
MATH-1109-R11

Instructor: Dr. Janusz Golec
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Office hours: Tue, Wed, Thu: 5:30 – 6:00PM, 8:50PM – … (as needed)

(with WebAssign access), Brooks/Cole Cengage Learning

Exams: Quizzes: June 4, June 11, June 18, June 25
Cumulative Final Exam: June 27

Final Grade: Quizzes: 60% (15% each)
Final Exam: 30%
Homework, Attendance, Participation: 10%

Short Contents: Attached

Class rules:
• Online WebAssign homework will be assigned after each class day.
• Quizzes will include problems similar to those solved in class, and/or
  assigned as homework. There will be no make-up quizzes.
• Attendance will be taken each class day.
• To attend the class and receive credit, you must be properly registered:
  http://www.fordham.edu/info/20189/registration_and_housing
• All class materials and announcements will be posted on Blackboard:
  https://fordham.blackboard.com/
• If you are a student with a documented disability and require academic
  accommodations, you need to register with the Office of Disability
  Services (ODS) in order to request academic accommodations:
  https://www.fordham.edu/info/20174/disability_services
  Accommodations are not retroactive, you need to register with ODS prior
to receiving them. Please notify me confidentially as soon as possible.
• I draw your attention to College Policy on Academic Integrity:
  http://www.fordham.edu/info/22218/essential_resources/3030/academic_integrity
  It explains college’s expectations and procedures under due process.

HAVE A NICE SUMMER SESSION SEMESTER!
1. Brief review of functions.
   - Piecewise defined function
   - Algebraic operations, composition of functions
   - The linear function (various forms)
   - Polynomial, rational, exponential, logarithmic function

2. Limits.
   - Definition and evaluation of limits
   - One-sided limits
   - Continuity of a function (by using limits)

3. The derivative.
   - Average rate of change, instantaneous rate of change
   - Definition of the derivative, interpretations
   - Derivative as a function, non-differentiability
   - First and second derivative tests

4. Techniques of differentiation.
   - Power rule, constant multiple rule, sum/difference rule
   - Derivative of the natural exponential function
   - Applications: marginal analysis, linear approximation
   - Product rule, quotient rule
   - Chain rule
   - Derivative of an exponential function
   - Implicit differentiation
   - Derivatives of a logarithmic function

5. Applications of derivatives.
   - Exponential growth and decay
   - Related rates
   - Absolute minimum/maximum of a function
   - Sketching graphs of functions by applying derivative tests
• Asymptotes and graphing with asymptotes
• General optimization problems
• Optimization in business and economics
• Price elasticity of demand

6. Integrals.
   • Approximation of areas under graphs of functions, Riemann sums
   • Definition of the definite integral
   • The midpoint rule

7. The Fundamental Theorem of Calculus (FTC).

8. Applications of FTC.
   • Net change, displacement, distance traveled ...
   • Initial value problems

9. The indefinite integral (antiderivative), basic rules for indefinite integrals.

**ITP:** Integration by substitution, logistic growth ...