College of Science and Health
Department of Mathematics
Course Syllabus

1. **Title of Course, Course Number and Credits**:
   Business Mathematics - Math 1170 3 credits
2. **Department secretary's telephone number and e-mail address:**
   Telephone No.: (973)-720-2158
   E-mail address: garbowskik@wpunj.edu
3. **Semester offered**:
   Winter 2020 (**December 26, 2019 – January 14, 2020**)
4. **Faculty member's name, office hours, telephone number and e-mail address:**
   Instructor's Name: Dr. Melkamu Zeleke
   Office Hours: By Appointment **Office No.:** Science Hall East 3050
   Telephone No.: (973)-720-2574 **E-mail:** zelekem@wpunj.edu
5. **Required texts, suggested readings, and other materials of study:**
   a. Mathematics with Applications in the Management, Natural, and Social Sciences by Lial, Hungerford, Holcomb, and Mullins (**11th Edition**).
   b. **MyMathLab Access Code** (to be purchased with the textbook).

6. **Course Objectives:**
   Students majoring in business and related fields are provided with a study of mathematical fundamentals necessary for developing quantitative thinking and basic problem solving skills. This includes the creation and evaluation of linear and nonlinear mathematical models and interpretation of results.

7. **Student Learning Outcomes:** Upon successful completion of this course students will be able to :
   a) Interpret and evaluate quantitative or symbolic models such as graphs, tables, units of measurement, and distributions.

   b) Implement standard mathematical techniques for solving equations, inequalities and systems of equations.

   c) Formulate linear and nonlinear models by translating real-world data (numerical, graphical and tabular) and situations into appropriate symbolic mathematics.

   d) Interpret linear and nonlinear models with an emphasis on graphical interpretations and logical conclusions.

   e) Consider the appropriateness and effectiveness of various approaches to solving a problem, such as a graphical approach vs. an algebraic approach.

   f) Analyze different financial situations and choose from a number of mathematical finance formulas to calculate and interpret investment quantities.

   g) Develop and enhance multi-step problem solving strategies involving the creation of a model, the mathematical solution process and the interpretation of results.

8. **Topical outline of the course content:**

I. Algebra Fundamentals (First Week)

- The Real Number System
- Order of Arithmetic Operations and the Absolute Value
- Interval Notation
- Polynomials
- Polynomial Factorization
- Integral and Rational Exponents
- First and Second Degree Equations

II. Graphs, Lines and Inequalities (First Week)

- Graphs in the Cartesian Coordinate Plane
- Equations of Lines
- Linear Models
- Linear Inequalities
- Polynomial Inequalities

III. Functions and Graphs (Second Week)

- Functions: Definition, Notation and Terminology
- Graphs of Functions
- Linear Functions and their Applications
- Quadratic Functions and their Applications

IV. Exponential and Logarithmic Functions (Second Week)

- Exponential Functions and Graphs
- Applications of Exponential Functions
- Logarithmic Functions and Graphs

V. Mathematics of Finance (Third Week)

- Simple Interest and Discount
- Compound Interest
- Present and Future Value
- Annuities and Sinking Funds

9. **Teaching Methods:**

This is a fully online course. Lecture notes with carefully selected examples will be provided by the course instructor on each of the five chapters in this course. You will also be given summary of basic concepts and review problems for each of the chapters. Chapter tests will be written based on the review problems and you are strongly advised to do all the review problems to prepare yourself for the chapter tests. Homework assignments are used to strengthen skills and understanding. Strong emphasis is given to business applications, developing mathematical models and interpretations of results.

The instructor will be **o**nline on a regular basis to address some questions posted by students on the discussion board.

10. **Course Expectations:**
    a. Students are expected to login to Blackboard and learn the materials posted and then complete the assignments by the due date. **Due dates for assignments will not be extended and students are expected to complete their assigned work in time**.
    b. This course has **2 chapter tests** and **a final examination**. The **first test will be given at the end of the first week and it covers the materials in chapters 1 and 2**. The **second test will be given at the end of the second week and it covers the materials in chapters 3 and 4**. The **final examination will be on chapter 5 (Mathematics of Finance) and it will be given on January 14, 2010.**
    c. The homework assignments on each of the sections have to be done using MyMathLab and you are expected to have access code to login and complete your assignment on a regular basis. Instructions on how to register and use Pearson's MyMathLab resources will be provided through Blackboard announcements.

11. **Grading and other methods for assessing student academic performance:**

    a. 20% homework (to be done using MyMathLab).
    b. 60% chapter tests (30% each).
    c. 20% final examination.

Your Overall Average	Course Grade
90 – 100	A
85 – 89	B+
81 – 84	B
75 – 80	B-
70 - 74	C+
65 - 69	C
60 - 64	C-
55 - 59	D
Below 55	F

12. **Additional information:**

- **Homework**: All homework assignments for this course have to be completed using MyMathLab and please see the first announcement for this course for instructions on how to use Pearson's MyMathLab resources including access to assignments for this course through Blackboard.

- **Timeline:** You will be given a reasonable amount of time to complete the work on each of the chapters in this course, and it is your responsibility to read the lecture notes, do the homework problems, and then attempt the review problems to prepare yourself for the chapter tests.