College of Science and Health
Department of Mathematics
Course Syllabus

1. **Title of Course, Course Number and Credits**:
   Business Mathematics - Math 1170 – 80   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 2021

4. **Faculty member's name, office hours, telephone number and e-mail address:**

   Instructor's Name: Dr. Fengya   **Telephone: 973-720-2316**
   Office Hours: By Appointment   **Office No.:** Science Hall East 3026
   E-mail: fengyad@wpunj.edu (preferred method of contact)

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 (**12th Edition**). *Hardcopy is OPTIONAL*

   b. Pearson's MyLab Math Access Code (can be purchased on their website). E-Book is included with the MyLab Math access code purchase. **MyLab Math and E-Book are REQUIRED**

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
- 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
- Graphs
- Equations of Lines
- Linear Models
- Linear Inequalities
- Polynomial Inequalities (Quadratic)

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

IV. Exponential and Logarithmic Functions
- Exponential Functions and Graphs
- Applications of Exponential Functions
- Logarithmic Functions and Graphs
- Solving Exponential Equations

V. Mathematics of Finance
- Simple Interest and Discount
- Compound Interest
- Present and Future Value
- Annuities and Sinking Funds

9. **Teaching Methods:**

This is an **online** course and lecture notes with carefully selected examples will be provided by the course instructor. Other learning aids as suitable will also be posted. Homework assignments (based on MyLab Math) are used to strengthen skills and understanding and are ESSENTIAL. Strong emphasis is given to business applications, developing mathematical models and interpretations of results.

10. **Course Expectations:**

   a. *Since this is an online course, students are expected to be self-learners to a large extent and have a good background knowledge the prerequisite material which is Algebra.*

   b. Students are expected to log into Blackboard, learn the materials posted for a particular chapter and complete the assignments by the due date. Due dates for assignments will not be extended and students are expected to complete their assigned work on time. (Additional details will be provided in a separate "*Course Management*" document)

   c. This course has 4 chapter tests and a final examination. Dates for the chapter tests and the final examination will be posted on Blackboard.

   d. All assessments, homework, tests and the final exam, will be done using MyLab Math. You are expected to have an access code to log in within the first two days of the semester.

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

   a. 20% homework (on MyLab Math)
   b. 60% chapter tests (15% each, on MyLab Math)
   c. 20% final examination (on MyLab Math).

   An approximate guideline for grade distribution is as follows:

Your Overall Average	Course Grade
90 – 100	A
88 – 89	A-
85 – 87	B+
80 – 84	B
77 – 79	B-
72 –76	C+
65 – 71	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 MyLab Math and you are expected to purchase the access code. You will be provided with detailed information on how to register and use MyLab Math (A student registration document will be posted on Blackboard).

   • **Blackboard Help**: Login into bb.wpunj.edu using your William Paterson University username and password and select Student Support to get detailed instructions on how to get started and use Blackboard effectively. The IT Wiki https://itwiki.wpunj.edu/index.php/Main_Page houses technical documentation and step-by-step instructions related to a wide variety of technology services offered by William Paterson University. *Quickly become familiar with the information provided on this site, if you have not used BB before.*

   • Additional details regarding the structure of the course and the best approach and suggestions for optimal learning, and other relevant details will be posted in the "Course Management" document which will be posted on BlackBoard.