Delaware Valley University  
Applied Mathematics (3 credits)  
Fall 2017  

Instructor: John Jernigan  
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Office Hours: MWF 12:40-1:40  
Course Number: MP 1210-233  
Meeting Time and Place: Monday 5:15-9:20 South Philadelphia Procacci Bros 3333 S Front St  

PREREQUISITES:  
MP 1102 College Algebra, or the equivalent.  
Upon entering this course the student should be able to do the following:  
1. Add, subtract, multiply and divide whole numbers. 
2. Solve application problems involving the four basic operations of mathematics.  
3. Completely simplify expressions involving order of operations.  
4. Translate an English phrase into a numerical expression.  
5. Solve problems with square roots.  
6. Solve linear equations which could be written in the form of $Ax+By+C=0$  
7. Solve applications to which linear equations are mathematical models.  
8. Apply the laws of integral exponents in business, mathematics, or the sciences.  

COURSE DESCRIPTION:  
This course is designed primarily for those who are not planning additional course work in Mathematics. Course covers principles of reasoning, statistical reason, numbers in the real world, probability, and discrete mathematics. The selection of topics, examples and application will be driven by what is necessary to make a person quantitatively literate, and thus better prepared to meet the challenges of the modern world.  

COURSE GOALS:  
To demonstrate an effective level of cognitive, communicative and research skills  
To achieve a college level of computational skills and an ability to understand and Interpret numerical data  
To acquire a knowledge of the history and heritage of western civilization to include Scientific literacy through knowledge of the history, the methods and the impact of Science on the individual, society and the environment  
To apply liberal learning in problem solving contexts as preparation for active participation in society
INSTITUTIONAL OUTCOMES:
1. Work Ethics
2. Foundational Skills
3. Interpersonal Skills,
4. Organizational/Leadership Skills
5. Critical Thinking/Problem Solving
6. Information/ Computer Literacy
7. Physical/Workplace Attributes
8. Science/ Environmental Awareness
9. Cultural/Social Literacy

This course will cover Institutional Outcomes 1, 2, 5, 6, 8

DEPARTMENTAL OUTCOMES:
1. Critical Thinking
2. Problem Solving
3. Scientific Awareness

EXPECTED EDUCATIONAL OUTCOMES:
After completing this course student should be able to:

Apply math to society:
Students will understand how real-world problems and social issues can be analyzed using the power and rigor of mathematical and statistical models.

Understand math:
Students will be able to evaluate representation and inferences representations that are based on quantitative information.

Interpret math models:
Students will be able to interpret mathematical models such as formulas, graphs, and tables, and draw inferences from them.

Find math answers:
Students will be able to estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results.

Use math methods:
Students will be able to use arithmetical, algebraic, geometric, and statistical methods to solve problems, but learn to recognize the limitations of mathematics and statistics as well.

REQUIRED MATERIALS:
* My Math Lab student access code
* A scientific calculator

WIRELESS DEVICES:
The use of communication devices is strictly prohibited at class. ALL such devices must remain turned OFF during class. Students possessing ringing devices that cause disruption will be asked to leave the class.
COURSE REQUIREMENTS:
To pass MP 1210-201, students must satisfactorily meet the following requirements:
1. Complete class assignments and read the next section(s) before coming to class.
2. Average seventy percent (60%) or higher on tests and exams.
3. Participate in class discussions, activities, or debates.
4. Attend class regularly in accordance with attendance policy.
5. Complete other course expectations.
6. MUST HAVE A TEXT BOOK AND A CALCULATOR.
NOTE: GRADES of A, B, C and D INDICATE SATISFACTORY WORK.

METHOD OF INSTRUCTION:
A. Classroom Procedures:
   Class time will be devoted primarily to lectures, class discussion, and problem-solving.
   Emphasis will be placed on the development of diverse problem-solving techniques.
B. Homework/Quizzes:
   Problems will be assigned regularly online and homework problems will be discussed in class.
   The problems and due dates for these assignments are found online. You are responsible for the
   material covered in class, regardless of whether you are present or not. Make friends in the
   class: ask them what you missed if you are ever absent. It is your responsibility to do homework
   and to ask questions about it if you do not understand whether or not you have done it correctly.
C. Classroom Protocol:
   Be on time. Do not leave during class. No food or drinks. Do not talk while instructor is talking.
   Offenders will be dropped from the roll. Attendance will be taken at every class meeting, and
   lateness may be considered absence. You are not permitted to miss more than the equivalent of
   2 weeks of class. You are responsible for everything covered during absence from class.

EXAMS:
Three exams will be given during the semester (100 points each) every third class, and a cumulative
final exam (150 points). There will be a ten question quiz every class, the total quiz score counts as
one exam. Final exam will be given the last day of class.

Below is a tentative schedule subject to change as needed. The “in class” problems are cooperative, we
can work on them together. The homework is due the following class.
COURSE OUTLINE:

Week 1 Review of percents Chapter 3A
   In class work 18 – 60 even
   Homework 17 – 59 odd
   The distributive property and the basis of compounding formulas
   Chapter 4B
   In class work (calculator exercises) p 214 58 – 66
   Homework p 214 57 – 67
   Chapter 4C
   In class work p 233 16 – 20 even
   Homework 15 – 19 odd

Week 2 More on exponential growth and decay
   Chapter 8A
   In class work p 480 2 – 20 even
   Homework 1 – 19 odd
   Chapter 8B
   In class work p 489 2 – 12 even, 13 – 21 all, 26, 30, 32, 42, 44, 46, 50
   Homework 1 – 11 odd, 25, 29, 31, 41, 43, 45, 49

Week 3 Solving exponential equations exactly using logarithms
   Modeling exponential growth and decay
   Chapter 9C
   In class work p 551 28 – 40 even
   Homework 27 – 41 odd
Exam 1

Week 4 Functions and models  Chapter 9A, B
   In class work p 523 2 – 30 even
   Homework 1 – 29 odd
   In class work p 537 18 – 20, 30 – 34, 44, 46
   Homework 17, 19, 29, 31, 33, 43, 45

Week 5 Probability Chapter 7A, handouts
   In class work p 422 2 – 28
   Homework 1 – 23 odd, worksheets

Week 6 More  Probability and counting Chapter 7BC  handouts
   In class work p 434 16 – 50 even
   Homework 15 – 49 odd
   In class work p 464 2 – 34
   Homework 1 – 33 odd
Exam 2
Week 7 Fundamentals of statistics Chapter 5AB
   In class work p 297 4 – 30 even
   Homework 3 – 29 odd
   In class work p308 22 – 30 even
   Homework 21 – 31 odd

Week 8 Statistical tables and graphs Chapter 5C
   In class work p321 6 – 28 even
   Homework 5 – 27 odd

Week 9 More graphs Chapter 5D
   In class work 2 – 30 even
   Homework 1 – 29 odd
   Exam 3

Week 10 Statistical data Chapter 6A
   In class work p 371 14 – 32 even
   Homework 13 – 31 odd

Week 11 Chapter 6B
   In class work p 382 16 – 28 even
   Homework 15 – 27 odd

Week 12 Review and Final