

MATH 0025 APPLIED COLLEGEALGEBRA Departmental Syllabus

Mathematics Department University of Pittsburgh

REQUIRED MATERIALS:

Text: Explorations in College Algebra: 5th Ed with Wiley Plus. Kime/Clark/Michael. John Wiley and Sons. 2012.

REQUIRED SUPPLEMENTS:

1. TI-83/84 plus graphing calculator (or equivalent)

Note: Your instructor will be using a graphing calculator in class and many of the problems in this text require the use of a graphing device. We recommend the TI-83/84 plus or silver edition. If you already own another calculator model and know how to use it, it is acceptable provided you realize that your instructor or teaching assistant may not be able to assist you with the technology. If you are going to purchase a new calculator, buy the TI-83/84 plus calculator for this course.

2. TI-83/TI-84 Graphing Calculator Manual, by B. Michael (available at www.wiley.com/college/kimeclark)

3. Course software (available at: www.wiley.com/college/kimeclark). Requires the latest version of Adobe FLASH Player

4. *Wiley Plus* homework software (the registration code is packaged free with a new textbook at the Pitt bookstore). If you purchased a used book without a code go to <http://www.wileyplus.com> to purchase a code. Your course URL is available at math 0025 on <http://courseweb.pitt.edu>, or see your instructor.

PREREQUISITES:

To be prepared for this course, you should have had High School Algebra I & II and Geometry, and obtained an appropriate score on the CAS Algebra Placement Test. If your background suggests that you are not prepared for this course, take the slower paced College Algebra 1, Math 0010 followed by Math 0020 or math 0025. Students who had High School Calculus should consider a faster paced pre-calculus course Math 0200 (Prep for Scientific Calculus) if you intend to take calculus. If you have questions concerning your placement, see your instructor, and before making any course changes, consult your advisor.

COURSE CONTENT AND PURPOSE:

1. **Audience:** Students who are non-math, non-science majors and are not planning on taking scientific calculus. This course is intended to fulfill the CAS/CGS Algebra Requirement when a grade of C- or higher is attained.

2. **Course Description:** Applied Algebra is intended to allow students to become comfortable describing the world quantitatively, using mathematical reasoning and traditional algebraic tools. This course emphasizes mathematical modeling of real world situations. The student will learn how to use and interpret graphs, data, charts and algebraic functions, all skills that can be used throughout a lifetime. This is a three-credit course and meets for three 50-minute lecture periods, or two 75min. periods, (total 150 minutes) and one recitation per week.

3. **Course Objectives and Content:** This course will be using real world data as the study focus for each mathematical function and topic covered including: rates of change, linear functions, systems of equations, exponential and logarithmic functions; power, polynomial and rational functions and transformations of these functions. Statistical ideas of histograms, averages, data plotting and the use of regression equations are presented so that students can interpret real world data. Students will be asked to find the mathematical model for real world data. Information will be taken from US Census data, biological and physical world data. Readings from journals, contemporary articles from newspapers and magazines may also be used. Students will be asked to work in groups on explorations. The on-line homework program *Wileyplus* is available with the text to allow students to model some of the data sets and to do homework or take on-line quizzes. Students will be active participants in lecture and recitation and may be asked to participate in group activities.

4. **Recitation:** An integral part of this course is the problem solving recitation. Students should come prepared to ask and answer questions about the practice problems on the syllabus. Recitation time will be used to review problems to do mathematical explorations take weekly quizzes. Your teaching assistant or instructor will expect that you can solve problems using multiple approaches including:

Numerically (i.e. a table of values), Graphically (i.e. scatter plots of data and graphs of Regression Equations), Symbolically (i.e. equations, inequalities, and algebraic functions) and Verbally (i.e. written descriptions, interpretations, conclusions, and explanations of the problem situation)

5. Practice problems and computer homework. A list of written practice problems is given on the last two pages of this document. In addition there will be assigned computer homework problems in *WileyPLUS*. After your instructor lectures on each of the sections indicated, do the assigned practice problems from the list. Students are encouraged to work out as many additional problems as necessary until the procedures and concepts have been mastered. PLEASE READ EACH SECTION AND WORK THE EXAMPLES IN THE TEXT BEFORE ATTEMPTING THE WILEYPLUS PROBLEMS. You should be putting the examples from each textbook section in your notebook. This is a very interactive text, which requires you to read! You cannot do many of the problems without a graphing calculator. Instructors may assign application problems in addition to those listed on the syllabus.

6. Quizzes and Exams. Quizzes will be given on announced weeks and will be on text material and lectures. Your lowest quiz will be dropped. There are two hourly exams and a cumulative Final Exam.

7. Course grade:

GRADING:

Your grade in this course is determined by the average of:

- Quizzes (20% of your course grade)
- WileyPlus on-line HW (15% of your course grade.)
- Two Exams (20% each or 40% of your course grade.)
- Final Exam (25% of your course grade.)

Grading Scale:

100-90 = A

89 - 80 = B

79 - 70 = C

69 - 60 = D

59 - 0 = F

*Instructor's have discretion to add + or - Grades

Final Grade Calculation = $0.20(\text{Quiz}) + 0.15(\text{WileyPlus}) + 0.20(\text{Ex1}) + 0.20(\text{Ex2}) + 0.25(\text{Final Ex})$