MA15300 ALGEBRA AND TRIGONOMETRY I
PURDUE UNIVERSITY, WEST LAFAYETTE

1. Complete Current Course Information

Credit Hours: 3.0
Contact Hours: 3.0
Course Description: Exponents and radicals; algebraic and fractional expressions. Equations and inequalities, systems of linear equations. Polynomial, exponential, and logarithmic functions. Not open to students with credit in MA 15900. Not available for credit toward graduation in the School of Science. Typically offered Fall, Spring and Summer. 0.000 OR 3.000 Credit hours.
Prerequisites: None, but a score of at least 30% on the ALEKS Assessment Tool is required.

2. Course Syllabus

Date the syllabus was prepared: May 2014
Course Objectives: The objective of MA15300 is to help the students solidify and expand the knowledge of algebra they have acquired in high school by providing a different and more rigorous perspective of the material.
Textbook Used Algebra and Trigonometry with Analytic Geometry (Custom with enhanced Webassign Homework Card, ISBN 1-111- 87720-3)- by Swokowski and Cole.
Weekly Schedule: (Sections refer to sections from the textbook).
Week 1 Sections 1.1, 1.2 and 1.3. Real numbers, exponents and radicals, algebraic expressions.
Week 2 Sections 1.3 and 1.4. more of of algebraic expressions and fractional expressions
Week 3: Sections 2.1 and 2.2. equations and inequalities, applied problems
Week 4: Review session, exam 1 and Section 2.3. Quadratic equations
Week 5: Sections 2.4, 2.5 and 2.6. Complex numbers, other types of equations, inequalities
Week 6: Sections 3.1, 3.2 and 3.3. Rectangular coordinate systems, graphs of equations, lines
Week 7: Sections 3.3 and 3.4. More of sections 3.3 (lines) and definition of functions
Week 8: Review session, exam 2 and continuation of section 3.4, definition of functions
Week 9: Section 3.5. Graphs of functions
Week 10: Sections 3.6 and 3.7. Quadratic functions , operations with functions
Week 11: Sections 2.7, 4.1 and 4.6. More on inequalities, polynomial functions of degree greater than 2, variation
Week 12: Sections 9.1 and 9.2. Systems of equations, systems of equations in two variables
Week 13: Review session, exam 3 and section 5.1, inverse functions
Week 14: 5.2, 5.3 and 5.4. Exponential functions, the natural exponential function logarithmic functions
Week 15: Sections 5.5 and 5.6. Properties of logarithms, exponential and logarithmic equations
Methods of evaluation of student learning: Students complete online homework assignment (using Webassign), take one weekly quiz during class, three midterm exams and one final exam.

3. Delivery Modes

MA15300 is offered in traditional classes with an instructor, online for students who are on campus or as a long distance course. The online lessons are also available to all students registered in the course as an additional learning tool.

4. Learning Outcomes

Entering Knowledge: The topics covered in MA153 are also covered in high school classes that are part of the Indiana Core 40 requirement. So the students entering MA15300 have been exposed to most, if not all, the topics that will be covered in the course. Purdue also requires a minimum score of 30% on the ALEKS Assessment Tool for the student to register in MA15300.

Demonstrated Knowledge Upon Completion: At the completion of the course, the students should be able to correctly perform algebraic operations (multiply and divide polynomials), solve algebraic equations of degree two, perform operations with exponents and radicals, solve systems of equations and inequalities, understand polynomial functions of arbitrary degree and sketch the graphs of some particular examples. The student should also understand the exponential and logarithmic functions and be able to sketch their graphs. The acquired knowledge will be tested by the three midterm exams, one final exam, weekly quizzes and homework assignments.