College Algebra Syllabus

MAT104 College Algebra: *4 hours, 3 credits.* Rational expressions, integer and rational exponents, quadratic formula, complex numbers, exponential and logarithmic functions, conic sections, trigonometry. Mathematics Laboratory attendance may be assigned at the discretion of the instructor.
Prerequisite: A grade of C (or better) in MAT 090 or placement by the Dept of Mathematics and Computer Science. Students who do not have a solid grasp of elementary algebra should not be in this course.
Instructor: Your instructor will provide contact information, office hours and meeting times for your section.

Grading Policy

Expectations: Students are expected to learn both the mathematics covered in class and the mathematics in the textbook and other assigned reading. Completing homework is part of the learning experience. Students should review topics from prior courses as needed using old notes and books.
Homework: Approximately two hours of homework will be assigned in each lesson as well as additional review assignments.
Review: There is room for only one lesson devoted specifically to review. Students can and should: (a) consult appropriate sections in the text, (b) go to Math Lab, problem sessions and office hours, and (c) do problems on a weekly basis, assigned or not, from sections previously covered. The more problems you do, the more you will retain.
Grades: Students who do not pass the uniform department final will not pass the course. There is no partial credit on the uniform final. Sample finals are available. *The precise grading policy for your section will be distributed by your instructor.*

Materials, Resources and Accommodating Disabilities

Textbook: Aufmann & Lockwood, *Algebra: Beginning and Intermediate*, 2nd ed. Houghton Mifflin, 2005
Technology: Students should purchase a basic scientific calculator able to compute trigonometric and exponenetial functions like sin and Ln, but no graphing calculators are allowed.
Tutoring: Departmental tutoring is available in the Math Lab on the 2nd floor of Gillet Hall.
Reliable Web Resources: See http://comet.lehman.cuny.edu/calculus
Reserve: Selected books have been placed on reserve in the library.
Accommodating Disabilities: Lehman College is committed to providing access to all programs and curricula to all students. Students with disabilities who may need classroom accommodations are encouraged to register with the Office of Student Disability Services. For more info, please contact the Office of Student Disability Services, Shuster Hall, Room 238, phone number, 718-960-8441.

Course Objectives

At the end of the course students should be able to:
1. Graph lines and parabolas (as part of the Departmental Objectives in Mathematics a, b & c)
2. Solve linear equations/inequalities in one variable. (as part of a & c)
3. Factor, add, subtract, multiply and divide polynomials (as part of a, b & c)
4. Evaluate functions or expressions and apply the quadratic formula (as part of a, b & c)
5. Manipulate formulas involving radicals, exponentials and logs (as part of a, b & c)
6. Compute lengths and angles in triangles using trigonometric functions (as part of a, b & c)
These objectives will be assessed on the final exam along with other important techniques.

Course Calendar

Students are responsible for all material contained in this syllabus. Time allotted for topics are suggestions, not absolutes. Students, you need to understand that even if your instructor gives only an example or two of an idea, you must put in enough work to master it. Do enough problems to make the ideas clear to you.

Lesson 1: Section 2.2 Distribute syllabus, get names and majors of students, give a pretest of 8-10
elementary algebra questions, review linear equations
Lesson 2: Section 2.3, 2.4, 2.6 Verbal problems (It might be effective to give an example of each type,
then include a verbal problem or two in every homework assignment.)
Lesson 3: Section 2.7 Linear inequalities in one variable
Lesson 4: Section 3.2, 3.3, 3.4 Functions, linear functions, slope of a line
Lesson 5: Section 3.5, 3.6 Graphs of lines, parallel and perpendicular lines
Lesson 6: Section 4.2 Systems of linear equations involving 2 and 3 variables
Lesson 7: EXAM I *(Students who fail this exam should consider dropping the course and either sit in on MAT 030/090 or go to Math Lab. For more personalized advising, please see your professor or a math advisor bringing a copy of your exam and homework.)*
Lesson 8: Section 5.1, 5.2, 5.3 Addition, subtraction and multiplication of polynomials
Lesson 9: Section 5.4, 5.5 Integer exponents, scientific notation, division of polynomial
Lesson 10: Chapter 6 Factoring (Omit factoring the sum and difference of cubes.)
Lesson 11: Section 7.1, 7.2 Simplification of and operations with rational expressions
Lesson 12: Section 7.3, 7.4 Complex fractions, rational equations
Lesson 13: Section 7.5 Ratio, proportion and variation
Lesson 14: EXAM II *(Students who fail this exam should consider dropping the course and either sit in on MAT 030/090 or go to Math Lab. For more personalized advising, please see your professor or a math advisor bringing a copy of your exam and homework.)*
Lesson 15: Section 8.1, 8.2 Rational exponents, radical expressions, operations with radicals.
Lesson 16: Section 8.4, 8.5 Solving equations containing radical expressions, complex nos.
Lesson 17: Section 9.1 Solving quadratic equations by factoring or taking square roots
Lesson 18: Section 9.2 Completing the square, using the quadratic formula
Lesson 19: Section 9.3, 9.4 Equations that lead to quadratics/quadratic forms, applications
Lesson 20: Section 9.6, 9.7 Graphs of quadratic functions, max-min problems
Lesson 21: EXAM III
Lesson 22: Section 10.5 Conic sections (Emphasize parabolas and circles.)
Lesson 23: 11.1, 11.2 Exponential and logarithmic functions (Talk about function inverses intuitively.)
Lesson 24: Section 11.3, 11.4 Graphs of log functions, exponential and logarithmic equations
Lesson 25: Section 11.5 Applications of exponential and logarithmic functions
Lesson 26: Trigonometry of the right triangle
Lesson 27: Applications of trigonometry
Lesson 28: Review for cumulative final exam

Final Exam: The Uniform Department MAT104 Final Exam will be given during Finals Week covering the entire course. Students who fail this final will fail the course. Your instructor may also add additional questions personalized for your section to determine grades in the class.

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