

MATH 6A Introduction to College Mathematics for the Sciences I

Textbook: Sullivan: Precalculus. Tenth Edition.

Suggested number of 50-minute lectures:

- 2.0 lectures – **A.1** Algebra Essentials: sets, Real numbers, domain, rules of exponents, abs val, distance on numberline. Also include:
 - **A.9 part 1** -- i.e., interval notation
 - **A.10 part 1-2, 5** -- i.e., nth roots, rational exponents (expands on rules of exp)
- 1.0 lecture – 1.1 The distance and midpoint formulas.
- 0.5 lectures -- 1.4 circles -- focus on standard form $(x-a)^2+(y-b)^2=r^2$ and relate it to distance formula. SKIP the general form $x^2+ax+y^2+by+c=0$.
- 1.5 lectures – A.3 Polynomials: FOIL, special products; divide, factor, complete the square.
- 1.5 lectures – A.5 Rational Expressions
- 1.0 lecture – A.6 Solving equations: linear, absolute value, quadratic
- 1.0 lecture – 1.2 Graphs of equations; intercepts; symmetry.
- 1.0 lecture – 1.3 Lines; linear equations.
- 1.0 lecture – A.9 Pt 2-5; solving inequalities.
- 0.5 lectures -- A.10 Pt 3-4 rationalize denominator and solve radical equations
- 1.0 lecture – 2.1 Functions; operations; difference quotient.
- 1.5 lectures – 2.2 The graph of a function. 2.3 Properties of functions.
- 0.5 lecture - review for midterm

1.0 lecture -- Midterm around here (after 14 lectures)

- 1.0 lecture – 2.4 Library of functions; piecewise functions. (Omit greatest integer function.)
- 1.5 lecture – 2.5 Graphing; transformations.
- 1.5 lecture -- 2.6 and A.8: Mathematical Models and Problem Solving
- 1.0 lecture – 3.3 Quadratic Functions and their properties.
- 1.0 lecture – 3.5 Inequalities involving quadratic functions.
- 1.5 lectures – 4.1 Polynomial functions; graphing polynomial functions.
- 1.5 lectures – 4.2 and 4.3: Rational functions and their graphs
- 1.0 lecture – 4.4 Polynomial and rational inequalities.
- 1.0 lecture – 4.5 The real zeros of a polynomial function. (Omit Theorem for Bounds.)
- 1.0 lecture – 5.1 Composite functions.
- 1.0 lecture – 5.2 One-to-one functions; inverse functions.
- 1.0 lecture -- review for final

Final (after 14 more lectures listed)

MWF courses have 29 lectures. TTh courses have 20 80-min lectures \approx 30 lectures.

Total accounted for lectures = 29 lectures including midterm.

Grading

Points	% from points	Assignment
80	~12%	Homework
100 for quizzes (drop 1 quiz of 7) 40 for participation (2 pts/day. miss 2 days of 20 for free)	~15% ~6%	Quizzes & Participation
150	~22%	Midterm
300	~45%	Final
670	100%	Total