

**MAT 1275 - College Algebra and Trigonometry
Course Outline**

Textbooks: McGraw-Hill Custom Textbook containing material from:

- 1) Intermediate Algebra by Miller, O'Neill, and Hyde, 6th edition (Classes 1-16 and 26-29)
- 2) Trigonometry by Coburn, 2nd edition (Classes 18-25).

WeBWorK: WeBWorK for MAT1275 uses the OpenLab Q&A site: <https://openlab.citytech.cuny.edu/ol-webwork/> Students will need an OpenLab account in order to post new questions.

Class	Lesson	Section	Homework	WeBWorK Set
1	Properties of Integer Exponents Addition and Subtraction of Rational Expressions	4.1, p.342-345 5.3, p.471-478	<u>p.350</u> : 11-29 odd, 33, 35, 41, 47, 63, 67, 75 <u>p.480</u> : 7-23, 27-49 odd	IntegerExponents ReducingRationalExpressions AddRationalExpressions AddRationalExpressions2
2	Complex Fractions	5.4, p.483-486	<u>p.489</u> : 3-9, 11-17 odd, 25, 27	ComplexFractions-Method1 ComplexFractions-Method2
3	Solving Rational Equations	5.5, p.491-496	<u>p.498</u> : 9-33 odd, 49, 53	FractionalEquations
4	Roots Rational Exponents	6.1, p.534-540 6.2, p.547-550	<u>p.543</u> : 9-37 odd, 59, 65, 67, 79, 81 <u>p.552</u> : 9, 13, 17, 19, 25, 29, 33, 41, 45, 53, 65, 73, 81, 93	HigherRoots HigherRoots-Algebraic RationalExponents
5	Simplifying Radical Expressions Addition and Subtraction of Radicals	6.3, p.555-559 (skip Ex. 2, 5) 6.4, p.563-566	<u>p.561</u> : 9, 13, 17, 21, 25, 33, 55, 59, 63, 79 <u>p.567</u> : 15, 19, 23, 35, 37, 41, 51, 55, 57, 61, 81	SimplifyingRadicals AddSubtractRadicals
6	Multiplication of Radicals	6.5, p.570-574 (skip Ex. 1c, 5b, 5c, 8)	<u>p.576</u> : 11, 17, 19, 21, 23, 25, 29, 31, 35, 37, 55, 57, 61, 63, 67, 77, 79, 87	MultiplyRadicals
7	Division of Radicals and Rationalization	6.6, p.579-585 (skip Ex. 1b, 2, 3b, 3c, 4, 6)	<u>p.587</u> : 3, 5, 9, 13, 23, 27, 31, 45, 49, 55, 59, 63, 69, 73	RationalizeDenominators
8	Solving Radical Equations	6.7, p.591-594 (skip Ex. 2, 3, 5)	<u>p.600</u> : 13-18, 25-28, 41-46	RadicalEquations
9	Exam 1 Complex Numbers	6.8, p.602-609	<u>p.611</u> : 15-27, 31-35, 53-57, 61-69, 81-89 odd	ComplexNumbers
10	Solving Equations by Using the Zero Product Rule	4.8, p.425-428 (skip Ex. 5)	<u>p.437</u> : 21-40	
11	Square Root Property and Completing the Square Quadratic Formula	7.1, p.626-631	<u>p.634</u> : 3-19, 27-33, 37-53 odd	SquareRootProperty
		7.2, p.638-648, derive the quadratic formula	<u>p.650</u> : 9-25, 49-55 odd, 63-67 odd, 69, 73, 77, 81, 85	QuadraticFormula
12	Applications of Quadratic Equations	4.8, p.429-431 7.2, p.640-641	<u>p.437</u> : 65, 69, 71, 73, 75 <u>p.651</u> : 39-47 odd	
13	Graphs of Quadratic Functions Vertex of a Parabola	7.4, p.662-669 7.5, p.677-681	<u>p.672</u> : 11-15, 19-23, 29-35, 45, 47, 51-61 odd <u>p.685</u> : 3-9 odd, 15, 17, 23, 27, 29, 41, 43	ShiftingParabolas ParabolaLab ParabolaVertices-CtS ParabolaVertices-VertexFormula

Class	Lesson	Section	Homework	WebWork Set
14	Distance Formula, Midpoint Formula, and Circles Perpendicular Bisector	9.1, p.810-814	p.817: 5, 9, 11, 13, 23-31 odd, 39, 41, 45, 61, 63, 65, 69, 75 Supplemental problems on perpendicular bisectors	DistanceFormula CircleLab Circles
15	Systems of Linear Equations in Three Variables	3.6, p.305-312	p.315: 11-17 odd, 21, 23, 27, 35-39 odd	3 × 3-Systems
16	Determinants and Cramer's Rule (optional) Nonlinear Systems of Equations in Two Variables	A.1, p.A-1 to A-8 9.4, p.843-845	p.A-10: 35-45 odd, 49, 55, 57 p.848: 15-29 odd, 41 (optional), 47	NonLinearSystems
17	Exam 2 (Midterm)			
18	Angle Measure and Special Triangles The Trigonometry of Right Triangles	1.1, p.2-6 2.1, p.46-50	p.7: 45-57 odd p.51: 7-21 odd	SpecialTriangles TrigonometryRatios
19	Solving Right Triangles Applications of Static Trigonometry	2.2, p.54-56 2.3, p.63-66	p.57: 7-47 odd p.69: 35-38	SolvingRightTriangles SolvingRightTriangles- InverseTrig TrigApplications
20	Angle Measure in Radian Trigonometry and the Coordinate Plane	3.1, p.90-93 1.3, p.22-27	p.95: 25-39 odd, 43, 45, 49-61 odd, 67-71 odd p.28: 25-31 odd, 45, 47, 55-63 odd, 64, 73-79 odd	AngleMeasure-Radians CoordinatePlaneTrig
21	Unit Circles	3.3, p.108-113	p.115: 29-35 odd, 37-40	UnitCircle
22	Graphs of the Sine and Cosine Functions Graphs of the Tangent and Cotangent Functions (optional)	4.1, p.134-144 4.2, p.153-159	p.145: 1-3, 17-29 odd, 33-39 odd p.160: 15, 19, 21, 39, 43, 47	GraphingSineCosine
23	Fundamental Identities and Families of Identities	1.4, p.31-35 5.1, p.212-214	p.35: 11-37 odd p.216: 13-29 odd, 37, 43, 51	
24	Trigonometric Equations	6.3, p.284-290	p.292: 13, 17, 21, 25, 31, 35, 43-49 odd, 79, 80	TrigEquations
25	Oblique Triangles and the Law of Sines The Law of Cosines	7.1, p.316-322 7.2, p.329-332	p.324: 7-23 odd p.338: 7-11 odd, 21-29 odd	LawOfSines LawOfCosines
26	Exam 3 Exponential Functions	8.3.1, 8.3.2, 8.3.4, p.680-686	p.687: 9-25 odd, 43, 49	ExponentialFunctions
27	Logarithmic Functions	8.4, p.690-693, and Ex. 8, 9	p.699: 11-61 odd	LogarithmicFunctions
28	Properties of Logarithms Compound Interest	8.5, p.704-709 8.6, p.712-715 (skip Ex. 3)	p.710: 17-29 odd, 45-55 odd, 63-64, 67-71, 79, 81, 91 p.721: 11,13	LogarithmicProperties CompoundInterest
29	Logarithmic and Exponential Equations	8.7, p.726-734	p.735: 39-49 odd, 55-61 odd, 73, 75, 77, 79, 87	ExponentialEquations ExponentialEquations-Calc
30	Final Exam			