Schedule

Math 130 (Pecalculus) *Kovitz* Fall 2019

Monday	Wednesday	Friday
September 2 **Labor Day Holiday - No Class**	September 4 Brief Review of necessary algebra	September 6 Lines
September 9 Lines (cont.) **Add/Drop ends (Tuesday)**	September 11 Graphs, Circles	September 13 Circles (cont.)
September 16 Reflections and Symmetry (short survey)	September 18 Functions	September 20 Functions (cont.) Transformations
September 23 Even and Odd Functions	September 25 Graphing the quadratic $y = x^2$; and simple transformations. Graphing in standard form.	September 27 Complete the square of a quadratic, for an equation given in general form.
September 30 **Test 1** (on assumed algebra)	October 2 General form: (a) Complete the square to find vertex and x-intercepts, then sketch. (b) Use the formula to find the vertex and solve the quadratic eqn. to get x-intercepts.	October 4 Max/min examples, which simplify to a quadratic.
October 7 Algebra of functions, compositions, inverses. What's an inverse? Invert: a relation, a verbal string.	October 9 **Test 2** (covers topics from lines to transformations)	October 11 Inverses: (1) graph the inverse relation. (2) find a formula for f^{-1}, (3) 1-to-1 (4) composition rule, (5) implicit defn.
October 14 **Columbus Day Holiday - No Class**	October 16 Exponents, exponent functions. The graph of an exponent function.	October 18 Logarithm functions: definition and graph. Implicit definition of the log function. A closed-form algebraic formula or just a rule?
October 21 **Test 3** (on even/odd, quadratics, max/min, compositions)	October 23 Log estimation. Composition of log and exponent to the same base. Historical derivation of approx. log values.	October 25 The rules of logarithms. Selected entries from a log table showing a pattern of log rules.
October 28 Log Equations.	October 30 Change of base, Log Practice. The number e.	November 1 Exponential Growth and Decay. Definition, Two-point data problem.
November 4 Exponential Growth and Decay Doubling Time and Half-life	November 6 Angles Triangles. Trig ratios defined for right triangles. Finding trig ratios on a calculator.	November 8 Right-triangle Trig. Trig ratio values for special angles. Check these values on a calculator Derive some identities.
November 11 **Veterans Day Holiday - No Class**	November 13 Review of the Unit Circle. Standard position on the Unit Circle.	November 15 **Test 4** true/false (on inverses, exponentials, logs, and expo growth)
November 18 Definition of circular sine and cosine. Indicate their input and output in the unit-circle picture.	November 20 Even/odd and complementary identities. Derivation and pattern of even/odd and whole-π identities. (1) Minus rotation, (2) opposite point, (3) supplementary, (4) full rotation(s). **Thu.: P/F & Course Withdrawal deadline**	November 22 Reference angles: find trig values of all special angles. (1) Write as $n\pi/12$, compare to closest axis point. (2) Use a whole-π identity on the reference angle. (3) Long table for sin or cos with $\sqrt{0}/2$, $\sqrt{1}/2$, etc.
November 25 Graphs of circular sin and cosine. Don't confuse graphs of unit circle and $\sin x$.	November 27 Transformed trig graphs (period, amplitude, midline, vert. shift, phase fraction, phase and horizontal shifts).	November 29 **Thanksgiving Recess - No Class**
December 2 Inverse sin and cos functions and graphs.	December 4 Identities for sin and cos: addition, subtraction, double-/half-angle.	December 6 More examples of verifying a trig identity. Trig Equations.
December 9 **Test 5** true/false on trigonometry.	December 11 tan and arctan functions. Review for final.	December 13 more review for final
		December ?? **Final Exam** 6:30–9:30 p.m., room TBA

Instructor:

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Office Hours: Mon. and Wed. 2:30–3:15 p.m., Fridays (in September and October only) 2:00–2:20 p.m.

Grading:

Each quiz 1% bonus, each challenge homework $\frac{1}{4}$% bonus, each homework $\frac{4}{5}$%, best 4 tests 15% each, final exam 32%.

Students who would get less than a C− will get a higher grade if they attend faithfully and submit homework on time.

Supplemental Instruction:

Will begin around September 9; further information to follow.

- **Always read any assigned material before class.**
- **Always hand in the homework on or before the due date.**