**MATH 130 + MATH 13 OUTLINE**

**COLLEGE ALGEBRA with SUPPORT**

Text: College Algebra, 12th Edition, Lial/Hornsby/Schneider/Daniels

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| *Approved: December 2018* | *Effective: Summer 2019* | |
| **MATERIAL TO BE COVERED** | **SECTIONS FROM TEXT** | **RECOMMENDED**  **TIME LINE** |
| **Math 13 Support Topics:** Review exponent rules (integer and rational), algebraic expressions, polynomials and their operations, factoring polynomials, rational expressions and their operations, complex fractions, radicals and their operations, simplifying radicals, rationalizing denominators. | R.2 - R.7 | **Math 13:**  6 hours |
| **Math 130 Topics:** Applications of linear equations, quadratic equations and applications, radical, rational and quadratic-in-form equations, linear/rational/quadratic inequalities.  **Math 13 Support Topics:**   * Linear equations (identities, conditional equations, contradictions), literal equations, applications (section 1.1) * Complex numbers (section 1.3) * Additional time reviewing solving techniques: Quadratics equations (zero-factor property, square root property, completing the square, quadratic formula), rational equations, radical equations, equations quadratic in form, literal equations, applications * Solving linear inequalities | 1.2 ,1.4 - 1.7 | **Math 130:**  4 hours  **Math 13:**  5 hours |
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| **Math 130 Topics:** Graphs of equations including circles, functions, linear functions, graphs of basic functions and piecewise-defined functions, graphing techniques, function operations including composition.  **Math 13 Support Topics:** Review rectangular coordinates and graphs, distance formula, and midpoint formula. Additional time with equations of lines (point-slope, slope-intercept, vertical and horizontal, parallel and perpendicular). | 2.1 - 2.8 | **Math 130:**  10 hours  **Math 13:**  3 hours |
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| **Math 130 Topics:** Quadratic functions and applications, synthetic division, real and complex zeros of polynomial functions, polynomial functions: graphs and applications; rational functions: graphs and applications; variation.  **Math 13 Support Topics:** Review polynomial functions, quadratic functions, graphing techniques, finding the vertex using completing the square and the vertex formula. Additional time with graphs of polynomial functions and rational functions. | 3.1 - 3.6 | **Math 130:**  14 hours  **Math 13:**  5.5 hours |
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| **Math 130 Topics:** Inverse functions, exponential functions, logarithmic functions, properties of logarithms, exponential and logarithmic equations and applications.  **Math 13 Support Topics:** Additional time with inverse functions, exponential functions, logarithmic functions, properties of logarithms, exponential and logarithmic equations. | 4.1 - 4.6 | **Math 130:**  10 hours  **Math 13:**  4 hours |
| **Math 130 Topics:** Linear systems: two and three variables and applications, matrix solution of linear systems, systems of linear inequalities and linear programming, properties of matrices.  **Math 13 Support Topics:** Review solving systems of linear equations using graphing, substitution, and elimination methods, graphing linear and nonlinear inequalities. | 5.1, 5.2, 5.6, and 5.7 | **Math 130:**  6.5 hours  **Math 13:**  3 hours |
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| **Math 130 Topics:** Sequences and series, arithmetic and geometric sequences and series, binomial theorem, math induction.  **Math 13 Support Topics:** Additional time with sequences, series and summation notation, binomial theorem, kth term of a binomial expansion. | 7.1-7.5 | **Math 130:**  7 hours  **Math 13:**  2 hours |
| **TOTAL HOURS:** |  | **Math 130:**  51.5 hours  **Math 13:**  28.5 hours |

* All hours listed are face-time; i.e. breaks are administered by the instructor separately and

are in addition to the hours listed.

Math 130 (4 units): 51.5 teaching hours + 6 hours exams + 2.5-hour final = 60 hours

Math 13 (2 units): 30 teaching hours

### The Math 13 timeline does not include time for exams. Exams in the support course are at the

### discretion of the professor.

### Math 13 is a 15-week course. The corequisite course does not meet during finals week.

**Math 13 Instructor Notes:**

* Worksheets for some support topics are available online at [www.mtsac.edu/math](http://www.mtsac.edu/math) under “resources”.
* Instructors should emphasize review chapter (Chapter R), test preps, review exercises, chapter tests, mid-chapter quizzes and skills for success.
* Math 13 is a Pass/No Pass course and is not subject to department grading policy.

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Math Department Policy can be found at: <https://www.mtsac.edu/math/departmentpolicy.html>