MAC1140/MAC1114

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| Quarter | Week | Major Concepts/Topics | Resources | Standard(s) |
| Sem. 1  MAC1140 | Aug. 19-31 | **Introduction to Functions**   * Equations One Variable * Quadratics and Absolute Values * Linear Functions * Functions * Composition of Functions * Graphs of Relations and Functions * Transformations of Functions * Complex Numbers | 1.1  1.7  1.4  2.1  2.4  2.2  2.3  1.6 | M-1  M-2  M-5 |
| Sept. 1-25 | **Quadratic, Polynomial, and Rational Functions**   * Quadratic Functions * Quadratic Functions with Calculator * Zeros of Polynomials * Solving Polynomial Equations * Graphs of Polynomial Functions * Graphs of Rational Functions | 3.1A  3.1B  3.2  3.3  3.5  3.6 | M-1  M-2  M-3  M-4  M-5 |
| Sept. 26-Oct. 21 | **Exponents, Logarithms, Systems Introduction**   * Review of Exponents * Exponential Functions * Inverse Functions * Introduction to Logarithms * Properties of Logarithms * Logarithmic Equations * Logarithmic & Exponential Equations * Solving Systems of Equations * Inequalities with Two Variables | 4R  4.1  2.5  4.2  4.3  4.4A  4.4B  8.1/8.3  8.5 | M-1  M-2  M-4  M-5 |
| Oct. 24-Nov. 18 | **Matrices**   * Operations with Matrices * Systems of Linear Equations in Three Variables * Solving Systems of Equations with Matrices no Calculator * Solving Systems of Equations with Matrices with Calculator and Special Cases * Solutions of Systems of Equations using Determinants | 9.2/9.3  8.2  9.1A  9.2B  9.5/9.6 | M-1  M-2  M-3  M-4  M-5 |
| Nov. 28- Dec. 9 | **Sequences/Series & Conic Sections**   * Arithmetic Sequence & Series * Geometric Sequence & Series * Conic Sections   + Parabola   + Circle   + Ellipse   + Hyperbola | 11.1/11.2  11.3  10.1-4 | M-2  M-3  M-4 |
| Sem. 2  MAC1114 | Jan. 9-27 | **Geometry Review & Introduction to Trigonometry**   * Angles * Angle Relationships and Similar Triangles * Definition of Trigonometric Functions * Trigonometric Functions of Acute Angles * Trigonometric Functions of Non-Acute Angles * Trigonometric Values using Calculator * Solving Right Triangles | 1.1  1.2  1.3/1.4  2.1  2.2  2.3  2.4 | M-1  M-2  M-3  M-4  M-5 |
| Jan. 30-Feb. 17 | **Unit Circle & Graphing Trigonometric Functions**   * Radian Measure * Application of Radian Measure * The unit Circle and Circular Functions * Graphs of Sine and Cosine Functions * Translations of Sine and Cosine Functions * Graphs of Tangent and Cotangent Functions * Graphs of Secant and Cosecant Functions | 3.1  3.3  3.2  4.1  4.2  4.3  4.4 | M-1  M-2  M-4  M-5 |
| Feb. 20-Mar. 17 | **Trigonometric Function Identities**   * Functional Identities * Verifying Trigonometric Identities * Sum and Difference Identities for Cosine * Sum and Difference Identities for Sine & Tangent * Double Angle Identities * Half Angle Identities | 5.1  5.2  5.3  5.4  5.5  5.6 | M-1  M-2  M-3  M-4 |
| Mar. 27-Apr. 14 | **Trigonometric Equations & Inverse Trigonometric Functions**   * Trigonometric Equations Level 1 * Trigonometric Equations Level 2 * Trigonometric Equations Level 3 * Inverse Circular Functions Part 1 * Inverse Circular Functions Part 2 * Equations Involving Inverse Trigonometric Functions | 6.2a  6.2b  6.3  6.1a  6.1b  6.4 | M-1  M-4  M-5 |
| Apr. 17- May 2 | **Trigonometric Function Theorems**   * The Oblique Triangle and Law of Sines * Ambiguous Case of The Law of Sines * The Law of Cosines * Complex Numbers * Trigonometric(Polar) Form of Complex Numbers * The Product and Quotient Theorems * De Moivre’s Theorem: Powers and Roots of Complex Numbers | 7.1  7.2  7.3  8.1  8.2  8.3  8.4 | M-1  M-2  M-4  M-5 |

M-1  Solve mathematical problems by using arithmetic, algebraic, or geometric skills.

M-2  Translate basic mathematical information verbally, numerally, graphically, or symbolically.

M-3  Solve mathematical problems using appropriate technology.

M-4  Interpret mathematical models such as formulas, graphs, tables or schematics.

M-5  Solve contextual problems using mathematical processes.