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| *Approved: June 4, 2021* | *Effective: Summer 2021* | |
| **MATERIAL TO BE COVERED** | **SECTIONS FROM TEXT** | **TIME LINE** |
| Rectangular coordinate system, angles, trigonometric functions, fundamental identities. (**optional: Angle relationships and similar triangles**) | 1.1 - 1.4  (**1.2 optional**) | 2.5 hours |
| Right triangle trigonometry, trigonometric functions of acute and non-acute angles, solving right triangles, applications, special triangles | 2.1 - 2.5 | 4.5 hours |
| Radian Measure, arc length, area of a sector, unit circle and circular functions, linear and angular speed. | 3.1 - 3.4 | 3.5 hours |
| Basic graphs of trigonometric functions, amplitude, reflection, period, graphing using vertical translation and phase shift, equations from graphs, combinations of functions. (**optional: Harmonic motion**) | 4.1 - 4.4  (**4.5 optional**) | 5 hours |
| Identities, proving identities, sum and difference formulas, double-angle formulas, half-angle formulas. | 5.1 - 5.6 | 5 hours |
| Inverse circular functions, solving trigonometric equations, equations with half angles and multiple angles. | 6.1 - 6.3 | 5 hours |
| Law of sines, ambiguous case, law of cosines, area of a triangle, vectors, operations with vectors, dot product, applications of vectors. | 7.1 - 7.5 | 6.5 hours |
| Complex numbers, trigonometric form of complex numbers, products/quotients in trigonometric form, De Moivre's Theorem, powers and roots of complex numbers, polar equations and graphs. **(It is recommended to introduce polar equations and graphs before complex numbers.**) | 8.1 - 8.5 | 6.5 hours |
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| 3-unit class: hours total 42.5 (15 x 2 hours 50 minutes) – hours for exams + 2.5 hour final This outline allows for 4 hours of exams.  **COURSE POLICY:**   1. Students should be tested on the core material (see below) without the aid of a calculator or note card. 2. Professors are allowed to supply a note card to students in order to test their application skills. Student-generated note cards are not allowed   **CORE MATERIAL:**  Definitions and graphs of basic trig functions: reciprocal, ratio, and Pythagorean identities; double-angle, half-angle, and sum/difference formulas; sine, cosine, and tangent values of all quadrantal angles and "key" reference angles; correct sign of each trig function in each quadrant; recognition of equivalent forms of quadrantal and "key" reference angles in degrees and radians. The laws of sines and cosines. The law of sines (ambiguous case) need not be emphasized.  Submitted by: Abbott, Chan, Chavez, Hall, Loyd, Kaljumagi, Kojima, Lai, McMullin, Morales, Perez, Summers  Math Department Policy can be found at: <https://www.mtsac.edu/math/departmentpolicy.html> | | |