



Course Number	Math 3313 Complex Variables for Engineering
Course Name	
Credit Value (Breakdown of theory and lab credits)	3 Theory
Catalog Course Description	The course will cover the algebra of complex numbers, analytic functions and the Cauchy-Riemann equations, Cauchy's integral theorem, conformal mapping, contour integration and residues. Applications in engineering and physical problems will be included. Prerequisite: MATH 2530. (3, 3T+0L)
Course Student Learning Outcomes/Objectives /Competencies of the Course	<p>Student Learning Outcomes: At the end of this course the student will be understand:</p> <ol style="list-style-type: none"> 1. Analytic functions, mappings, limits, and continuity 2. Differentiation and Cauchy-Riemann equations <ol style="list-style-type: none"> a. Harmonic functions b. Polar Coordinates 3. Conformal mapping <ol style="list-style-type: none"> a. Contour integrals b. Convergence of sequences and series c. Taylor's and power series 4. Boundary value problems and potential theory <ol style="list-style-type: none"> a. Singular points, zeroes, and poles b. Cauchy's residue theorem 5. Complex integration
College-Wide Student Learning Outcomes	<p>Math 3313 exposes students to the following NNMC College Wide Goals:</p> <p><i>Critical thought: Students are required to analyze and synthesize information and draw reasoned conclusions.</i></p> <p><i>Quantitative reasoning: Calculate, represent, apply, analyze, and communicate both quantitative and qualitative information.</i></p>
Program Student Learning Outcomes measured	PSLO #3: Use linear algebra and matrices, vector analysis, ordinary differential equations, partial differential equations, or complex analysis to solve real world problems.