



<b>Course Number</b> <b>Course Name</b>	Math 3313 Complex Variables for Engineering
<b>Credit Value</b> <b>(Breakdown of theory and lab credits)</b>	3 Theory
<b>Catalog Course Description</b>	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)
<b>Student Learning Outcomes/Objectives /Competencies of the Course</b>	<p><b>Student Learning Outcomes:</b> At the end of this course the student will be understand:</p> <ol style="list-style-type: none"> <li>1. Analytic functions, mappings, limits, and continuity</li> <li>2. Differentiation and Cauchy-Riemann equations             <ol style="list-style-type: none"> <li>a. Harmonic functions</li> <li>b. Polar Coordinates</li> </ol> </li> <li>3. Conformal mapping             <ol style="list-style-type: none"> <li>a. Contour integrals</li> <li>b. Convergence of sequences and series</li> <li>c. Taylor's and power series</li> </ol> </li> <li>4. Boundary value problems and potential theory             <ol style="list-style-type: none"> <li>a. Singular points, zeroes, and poles</li> <li>b. Cauchy's residue theorem</li> </ol> </li> <li>5. Complex integration</li> </ol>
<b>College-Wide Student Learning Outcomes</b>	<p>Math 3313 learning objectives align with the following NNMC College Wide Goal:</p> <p><i>Critical thought: Students are required to analyze and synthesize information and draw reasoned conclusions.</i></p>