



<b>Course Number</b>	Math 4464 Applied Matrix Theory
<b>Course Name</b>	
<b>Credit Value (Breakdown of theory and lab credits)</b>	3 Theory
<b>Catalog Course Description</b>	The course will cover the theory of linear equations, matrix analysis of systems of linear differential equations, eigenvalues and eigenvectors, iterative methods for solving linear systems, variational principles, and generalized inverses. Prerequisite: MATH 3314. (3, 3T+0S)
<b>Course 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 learn:</p> <ol style="list-style-type: none"> <li>1. Direct methods of solving linear equations</li> <li>2. Iterative methods of solving linear equations</li> <li>3. Condition number of matrices</li> <li>4. Eigenvalues and eigenvectors and how to compute them numerically</li> <li>5. Solutions of systems of coupled ordinary differential equations</li> <li>6. Singular value decomposition</li> <li>7. Variational principles</li> <li>8. Generalized inverses</li> </ol>
<b>College-Wide Student Learning Outcomes</b>	<p>Math 4464 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>
<b>Program Student Learning Outcomes measured</b>	PSLO #3: Use linear algebra and matrices, vector analysis, ordinary differential equations, partial differential equations, or complex analysis to solve real world problems.