

MHZ5554 Engineering Mathematics IV

<b>Level</b>	5
<b>Course Code</b>	MHZ5554
<b>Course Title</b>	Engineering Mathematics IV
<b>Credit value</b>	5
<b>Core/Optional</b>	Core
<b>Course Aim/s</b>	To provide the knowledge in vector integrations, conformal mapping, fourier transform, tensor calculus, statistical methods, and operations method and simulation techniques to solve complex Engineering problems.
<b>Course Learning Outcomes (CLO):</b>	<p>At the completion of this course student will be able to:</p> <p>CLO1: Solve engineering problems by applying Greens, Stokes' and Divergence theorems.</p> <p>CLO2: Apply standard techniques to solve complex functions.</p> <p>CLO3: Apply Fourier transformation techniques to solve non-periodic functions.</p> <p>CLO4: Apply tensor calculus to derive moments of inertia, stresses and strains.</p> <p>CLO5: Apply statistical techniques to engineering problems and obtain a statistical conclusion.</p> <p>CLO6: Apply optimization techniques to engineering problems to find optimum or near optimum solutions.</p> <p>CLO7: Identify and apply simulation techniques and tools to find approximate solutions to engineering problems.</p>
<b>Content</b>	<p><b>Outline Syllabus:</b></p> <p>Unit 1: Coordinate systems and vector calculus  Unit 2: Series and complex integration  Unit 3: Conformal Mapping  Unit 4:Fourier transforms  Unit 5: Tensor calculus  Unit 6: Statistical Methods  Unit 7: Operations Research(OR)  Unit 8: Simulations</p> <p><b>Computer Based Practicals:</b></p> <ol style="list-style-type: none"> <li>1. Use the software tools to solve problem using optimization and simulation techniques.</li> <li>2. Use the software tools to analyze problems using statistical techniques</li> </ol>