MHZ5554 Engineering Mathematics IV

Level	5
Course Code	MHZ5554
Course Title	Engineering Mathematics IV
Credit value	5
Core/Optional	Core
Course Aim/s	To provide the knowledge in vector integrations, conformal mapping, Fourier transform, tensor calculus, statistical methods, operations method, and simulation techniques to solve complex Engineering problems.
Course Learning Outcomes (CLO):	At the completion of this course student will be able to CO1: Solve engineering problems by applying Greens, Stokes' and Divergence theorems. CO2: Apply standard techniques to solve complex functions. CO3: Apply Fourier transformation techniques to solve non-periodic functions. CO4: Apply tensor calculus to derive moments of inertia, stresses, and strains. CO5: Apply statistical techniques to engineering problems and obtain a statistical conclusion. CO6: Apply optimization techniques to engineering problems to find optimum or near optimum solutions. CO7: Identify and apply simulation techniques and tools to find approximate solutions to engineering problems.
Content	**Outline Syllabus:** 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