

Preliminary Syllabus for MATH 6172 Advanced Applied Mathematics II

Text: Advanced Engineering Mathematics, Eighth Edition, by E. Kreyszig

Lecture(s)	Section(s)	Contents
1	12.1-3	Complex Numbers, Polar Form, Derivative
2	12.4-5	Cauchy-Riemann Equations, Conformal Mapping
3	12.6-7	Exponential Function
4	12.8-9	Logarithm, Linear Fractional Transformations
5	13.1-2	Line Integral, Cauchy's Integral Theorem
6	13.3-4	Cauchy's Integral Formula, Derivatives of Analytic Functions
7		Review
8		Test 1
9	14.1-2	Sequences, Power Series
10	14.3-4	Taylor Series, Maclaurin Series
11	15.1-2	Laurent Series, Singularities and Zeros
12	15.3-4	Residue Integration Method, Evaluation of Real Integrals
13	16.1-2	Electrostatic Fields, Use of Conformal Mapping
14	16.3-4	Heat Problems, Fluid Flow
15	16.5-6	Poisson's Integral Formula, Harmonic Functions
16		Review
17		Test 2
18	22.1-3	Experiments, Probability
19	22.4-5	Permutations and Combinations, Random Variables
20	22.6-7	Mean and Variance, Binomial and Poisson Distributions
21	22.8-9	Normal Distribution
22	23.1-2	Random Sampling, Estimation of Parameters
23	23.3-4	Confidence Intervals, Decisions
24	23.7	Goodness of Fit, χ^2 -Test
25	23.9	Fitting Straight Lines
26		Review
27-29		Catch-up
30		Test 3