

THE COLLEGE OF STATEN ISLAND
DEPARTMENT OF MATHEMATICS

MATH 331 - APPLIED MATH ANALYSIS II

Spring 20112
Rev.S12
Wollman

TEXT: Advanced Engineering Mathematics, Seventh Edition
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LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
1	11.3	Introduction to PDE's Applications and Numerical Solutions Stream Function	356/1,3,5
2	11.4 11.5	The Gradient Field Divergence and Curl	361/1,3,9,13,15 366/1,3,9,12,13
3	11.4-5	Matlab Project #1 Visualizing Div/Grad Curl	Matlab Project
4	12.1 12.2	Line Integral Green's Theorem	374/1,5,7,10,11 376/1,5,7,9,13
5	12.4	Independence of Path, Potential Theory	387/3,5,9,13,15,17,21
6	12.5 12.6	Surface Integrals Applications of Surface Integrals	395/1,3,5,7,9 399/7,8
7	12.7 12.8	Lifting Green's Theorem to R^3 The Divergence Theorem of Gauss	402/1,2 407/1,3,5,6,7,8,9
8	12.8 12.9	The Divergence Theorem of Gauss Stokes's Theorem	413/1,3,5,7,
9	12.9	Stokes's Theorem	
10		Review	
11		EXAM 1	

-LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
12	15.1	Sturm-Liouville Theory	518/1,3,5,7,9
13	15.1	Sturm-Liouville Theory Eigenfunction Expansions and Completeness	PROBLEMS ON HANDOUT
14	13.1-2	Fourier Series, Convergence of Fourier Series	440/1,2,3,5,6,9,12,14,15,17,19
15	13.3	Fourier Sine and Cosine Series	445/1,2,3,7,8,11*,12*
16	13.1-3	Matlab Project #2 Convergence of Fourier Series	Matlab Project
17	14.1 14.2	Fourier Integral	467/1,3,6,7 470/2,3,5,9
18	14.3	Fourier Transform Additional Properties of Fourier Transform (differentiation)	489/1,3,5,11,13,15
19		REVIEW	
20		EXAM 2	
21	17 17.1	Partial Differential Equations Introduction	612/1,2,3
22	17.2	Heat Equation	625/1,3,5,7,9,11*

LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
23	18.1 18.2	Potential Equation Dirichlet Problem	644/1,3,7,9*
24	16.1 16.2	Wave Equation Series Solution	567/1,3 577/1,3,5,6
25	16.6	D'Alembert's Solution Visualization of Wave Solutions	601/14,15
26	17.3	Fourier Transform Solution of Boundary Value Problems	630/1,7
27		REVIEW	
28		REVIEW FOR FINAL	