

THE COLLEGE OF STATEN ISLAND
DEPARTMENT OF MATHEMATICS

MATH 331 - APPLIED MATH ANALYSIS II

FALL 2004
Rev.F04
AP/AP

TEXT: Advanced Engineering Mathematics, Fifth Edition
By: Peter O'Neil, Wadsworth Publishing Co.

LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
1	11.3	Introduction to PDE's Applications and Numerical Solutions Stream Function	534/1,3,6,13,31,22
2	11.4 11.5	The Gradient Field Divergence and Curl	546/1,3,13,15,21 552/1,3,9,12,14,17,19
3	11.4-5	Matlab Project #1 Visualizing Div/Grad Curl	Matlab Project
4	12.1 12.2	Line Integral Green's Theorem	564/1,5,11,13,19,27,29 568/1,3,7,9,15,17
5	12.3	Independence of Path, Potential Theory	582/3,7,9,11,17,21
6	12.4 12.5	Surface Integrals Some Uses of Surface Integrals	595/1,3,5,7,12,15,17 601/7,8
7	12.6 12.7	Preparation for Theorems of Gauss and Stokes The Divergence Theorem of Gauss	604/1,2 611/1,3,5,6,7,8,11,19*
8	12.7 12.8	The Divergence Theorem of Gauss Stokes's Theorem	621/1,3,5,7,9,11,8*
9	12.8	Stokes's Theorem	621/13,15,17
10		Review	
11		EXAM 1	

LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
12	15.3	Sturm-Liouville Theory	835/1,3,5,7,9,13
13	15.3	Sturm-Liouville Theory Eigenfunction Expansions and Completeness	PROBLEMS ON HANDOUT
14	13.1-2 13.3	Fourier Series Convergence of Fourier Series	635/1,2,3,5,6,9,12 650/4,57,8,16*,17*
15	13.4	Fourier Sine and Cosine Series	657/1,2,3,7,8,11,13*15*
16	13.1-4	Matlab Project #2 Convergence of Fourier Series	Matlab Project
17	14.1 14.2	Fourier Integral	684/1,3,6,7 687/2,3,5,9,13*
18	14.3 14.4.1-3	Fourier Transform Additional Properties of Fourier Transform (differentiation)	697/1,9,11,13,25,27,29,31*
19		REVIEW	
20		EXAM 2	
21	17 17.1	Partial Differential Equations Introduction	918/1,2,3
22	16.2	Heat Equation	938/1,3,5,7,9,11,12,13*

LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
23	18.1 18.2	Potential Equation Dirichlet Problem	959/1,3,7,9*
24	16.1 16.2	Wave Equation Series Solution	p861/1,3 p878/1,3,5,6
25	16.4	D'Alembert's Solution Visualization of Wave Solutions	p903/22,23
26	17.3	Fourier Transform Solution of Boundary Value Problems	p949/1,9
27		REVIEW	
28		REVIEW FOR FINAL	