THE COLLEGE OF STATEN ISLAND
DEPARTMENT OF MATHEMATICS

MATH 331 - APPLIED MATH ANALYSIS II

Spring 2010
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Wollman

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

LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
1		Introduction to PDE's Applications and Numerical Solutions	
	12.3	Stream Function	499/1,3,6,13,15,
2	12.4	The Gradient Field	509/1,3,9,15,17
	12.5	Divergence and Curl	514/1,3,9,12,14,15,
3	12.4-5	Matlab Project #1 Visualizing Div/Grad Curl	Matlab Project
4	13.1	Line Integral	528/1,5,11,13,17
	13.2	Green's Theorem	535/1,3,5
5	13.3	Independence of Path, Potential Theory	545/3,7,9,11,15,17
6	13.4	Surface Integrals	556/1,3,5,7,9
	13.5	Some Uses of Surface Integrals	562/7,8
7	13.6	Preparation for Theorems of Gauss and Stokes	564/1,2
	13.7	The Divergence Theorem of Gauss	571/1,3,5,6,7,8,9
8	13.7	The Divergence Theorem of Gauss	
	13.8	Stokes's Theorem	579/1,3,5,7,9
9	13.8	Stokes's Theorem	621/11,13,15
10		**Review**	
11		**EXAM 1**	

LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
12	16.3	Sturm-Liouville Theory	765/1,3,5,7,9
13	16.3	Sturm-Liouville Theory Eigenfunction Expansions and Completeness	PROBLEMS ON HANDOUT
14	14.1-2 14.3	Fourier Series Convergence of Fourier Series	592/1,2,3,5,6,9,12 609/4,5,7,8,11*,12*
15	14.4	Fourier Sine and Cosine Series	614/1,2,3,7,8,11*,13*
16	14.1-4	Matlab Project #2 Convergence of Fourier Series	Matlab Project
17	15.1 15.2	Fourier Integral	640/1,3,6,7 642/2,3,5,9
18	15.3 15.4.1-3	Fourier Transform Additional Properties of Fourier Transform (differentiation)	652/1,9,11,13,19,21,23
19		**REVIEW**	
20		**EXAM 2**	
21	18 18.1	Partial Differential Equations Introduction	844/1,2,3
22	18.2	Heat Equation	863/1,3,5,7,9,11*

LESSON	SECTIONS	TOPICS	HOMEWORK PROBLEMS
23	19.1 19.2	Potential Equation Dirichlet Problem	 883/1,3,7,9*
24	17.1 17.2	Wave Equation Series Solution	785/1,3 806/1,3,5,6
25	17.4	D'Alembert's Solution Visualization of Wave Solutions	830/14,15
26	18.3	Fourier Transform Solution of Boundary Value Problems	873/1,7
27		**REVIEW**	
28		**REVIEW FOR FINAL**	

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