COLLEGE OF STATEN ISLAND MATHEMATICS DEPARTMENT DJ/89

ADVANCED CALCULUS II (MTH 342) COURSE OUTLINE (part ii) 4 CREDITS/4 HRS
TEXT: ADVANCED CALCULUS (3rd Ed.) Authors: Taylor & Mann Pub: Wiley

SECTIONS	TOPICS	HOMEWORK
18.4	The Integral as a Function of the Upper Limit	549/1,2
18.5	Leibnitz Rule	554/1,4
8 - 8.2	The Implicit Function Theorem	229/1
8.3	Simultaneous Equations	234/1-3
9,9.1	The Inverse Function Theorem	247/Exercise
9.2	Mappings	251/1,3,8
9.3	Successive Mappings	254/1,2
9.6	Functional Dependence	266/1,4a,Misc. 1a,c
19	Infinite Series of Constants	569/1a,d,g,2,4b,c
19.1	Taylor's Series	572/1,2
19.2	Series of Non-negative Terms	576/1a,c,2,5a,e,g,8
19.21	Comparison Tests, Integral Test	579/1a,c,d,g,5,6
19.22	Ratio Tests, Root Test	581/1e,f,g,3,4
19.4		595/1b,d,h,2a,e,g,h,3a 595/5
19.3	Absolute and Conditional Convergence	585/1-3
19.31	Grouping and Rearrangement of Terms	587/4
19.32	Alternating Series	589/1a,b,e,2a,d,4
19.5	Binomial Series	
19.6	Addition, Subtraction and Multiplication of Series	604/1,2,7
19.7	Dirichlet's Test	607/1,5,6
20,20.1	Uniform Convergence	617/1a,b,d,4,5
20.2	Comparison Test Weierstrasse M-Test	620/1a-d,2
20.3	Continuity of the Limit Function	621/1,3
20.4	Integration of Sequences and Series	623/1,4
20.5	Differentiation of Sequences and Series	626/1a,c,f
21,21.1	Power Series; The Interval of Convergence	631/1a,d,e,f,7a,b,12
21.2	Differentiation of Power Series	637/1,3,12
21.3	Elementary Operations With Power Series Substitution of Power Series {f(g(x))}	642/1a,e,2a,b
21.4	Abel's Theorem	646/1,2
21.5	Inferior and Superior Limits	649/1a-c,2,4c,d,f,7
21.6	Real Analytic Functions	652/1

Advanced Calculus II (MATH 342) COURSE OUTLINE (PART I)
TEXT: ADVANCED CALCULUS (3rd Ed) AUTHORS: TAYLOR & MANN

LESSON	SECTIONS	TOPICS	HOMEWORK
	5	Functions of Several Variables	
0	5.1	Point Sets in 2 & 3 Dimensions	121/1; 122/3,4,5
0	5.2	Limits	124/1,3,8,9
0	5.3	Continuity	127/1,3
	5.4	Modes of Representing a Function	
1	6	Partial Derivatives	
2	6.1	Implicit Functions	134/1,3
2	6.2	Geometric Significance	138/1,2,6
7	6.3	Maxima and Minima	143/1,3; 144/16,17
2	6.4	Differentials	153/1ac,2
3	6.5	Composite Functions & the Chain Rule	160/2,4,7
3	6.52	Second Derivatives by the Chain Rule	166/1; 167/3,7,9a
5	6.6	Derivatives of Implicit Functions; Jacobians	176/1,2,3
7	6.7	Extremal Problems with Constraints	186/1,4
8	6.8	Lagrange's Method	186/2,16; 187/20,23
	6.9	Quadratic Forms	193/1,2,5a
1	7	General Theorems about Partial Differentiation	187/28; 188/29
1	7.1	Sufficient Conditions for Differentiability	199/1,4
1	7.2	Changing the Order of Differentiation	201/1
4	7.4	The Law of the Mean	
6	7.5	Taylor's Formula & Series	210/1,8; 211/10a
9	7.6	Relative Extrema [Suff. cond	220/1bf