Math 625 Complex Variable Functions

I. COURSE TITLE: ***Complex Variables*** **MAT 625 3 CR**

II. TEXTBOOK: **Title-----Basic Complex Analysis ---- 3th Edition,**
Authors-----Jerrold E. Marsden & Michael J. Hoffman
Publisher------W.H. Freeman and Company

III. PREREQUISITES: **Calculus III or Equivalence**

IV. OBJECTIVES:

a. To introduce students--majoring in mathematics, the physical sciences, Engineering and the health sciences fields, etc.
--the basic ideas and fundamental theory about functions of a single complex variable

b. To make advanced mathematics accessible to students through clear exposition, timely suggestions for interaction, motivating examples, exercises, and applications so they can see how powerful role mathematics plays in their fields of study

V. CLASS SCHEDULE:

WEEK		SECTION & DESCRIPTION	HOMEWORK (Odd)
1	1.1-2	Properties of Complex Numbers,	P9 #1- 20, P22 # 1- 30
2	1.4	Continuous functions	P57 #1- 24
3	1.5	Basic Properties of Analytic Functions	P77 #1- 32
4	1.3	Elementary Functions and	P38 #1- 35
	1.6	Differentiation	P89 #1- 14
5	2.1-2.3	Contour Integrals & Cauthy's Theorem	P109 #1- 16, P122 #1-11, P142 #1- 10
6	2.4-5	Cauthy's Integral Formula	P161 #1- 17, P176 #1-18
7	3.1-	Series representation of analytic	P201 #1- 20, P218 #1-26
	3.3	Functions	P234 #1- 20
8	Midterm Exam		
9	4.1-	Calculus of Residues and	P254 #1- 14, P268 #1-15
	4.3	Evaluation of Definite Integrals,	P268 #1- 25
10	5.1-	Conformal Mappings	P325 #1- 13
	5.3	and applications	P342 #1-35
11	6.1-2	Analytic Continuation and Elementary Riemann Surfaces	P382 #1- 13
12-3	8.1-8.3	(Optional) Laplace Transform	P469 #1- 22, P475 #1-10
		And Review For the Final Exam	P479 #1- 10

VI. NOTES:

- There should be at least a midterm exam and a cumulative Final Exam.
- The Final Exam will be scheduled in the final week.