

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

SYLLABUS
Semester 101
Instructor: N.-e. TATAR

Course	Math 533
Title	Complex Analysis
Textbook	Complex Analysis by Lars V. Ahlfors (Third Edition)
Objectives	This course aims to strengthen the introductory concepts of complex analysis taken in the undergraduate of this course, the student should have well understood the concepts of Analyticity of functions and get an idea about the conformal mappings.

Week	Date	Sec.	Material	Homework
1	Sept. 25-29	Ch. 1	The Algebra of complex numbers and representations The spherical representation	
2	Oct. 02-06	Ch. 2	Concept of analytic functions: Limits – Continuity – Analyticity – The Cauchy-Riemann equations Harmonic functions	
3	Oct. 09-13		The Exponential, Trigonometric and Logarithmic functions	
4	Oct. 16-20	Ch. 3.1	Notions of topology	
1st Major Exam:				
5	Oct. 23-27	Ch. 4	Fundamental theorems, Cauchy's integral Formula	
6	Oct. 30-Nov. 03		Local properties of Analytical functions, General form of Cauchy's theorem	
7	Nov. 06 -10		Calculus of Residues, Harmonic functions	
Eid Al-Adha Break: Thursday, Nov. 11- Friday, Nov. 21, 2010				
8	Nov. 22- 24	Ch. 5	Power series expansions	
9	Nov. 27-Dec. 01		Partial fraction and Factorization	
2nd Major Exam:				
10	Dec. 04-08	Ch. 6	Conformal Mapping	
11	Dec. 11-15		Conformal Mapping	
12	Dec. 18-22		Conformal Mapping	
13	Dec. 25-29	Ch. 8	Global analytic functions	
14	Jan. 01-05		Global analytic functions	
15	Jan 08- 12		Presentations	