SYLLABUS FOR MATH 241, CALCULUS IV

SUMMER SESSION II, 2012

Textbook: *Advanced Engineering Mathematics: 3rd edition* D.Zill & M.Cullen

Complex Analysis: chapter 17,18,19, week 1-3(Jul.02–Jul.19)

Date	Topic	Text
07/02	Introduction to complex numbers	17.1-17.3
07/03	Functions of one complex variable	17.4-17.5
07/04	Independence Day(no class)	
07/05	Classical functions in complex variable	17.6-17.8
07/09	Contour integrals	18.1
07/10	Cauchy-Goursat Theorem and independence of path	18.2-18.3
07/11	Cauchy's integral formulas	18.4
07/12	Taylor series and Laurent series for functions of complex variable	19.1-19.3
07/16	Zeroes and poles	19.4
07/17	Residues and Residue Theorem	19.5
07/18	Evaluation of real integrals	19.6
07/19	Review	chap.17-19

Fourier Series and Partial Differential Equations: chapter 12,13,14,15, week 4-6(Jul.23–Aug.09)

Date	Topic	Text
07/23	Midterm	chap.17-19
07/24	Orthogonal functions and Fourier series	12.1-12.4
07/25	Fourier integral and Fourier transforms	15.3-15.4
07/26	Sturm-Liouville problem	12.5
07/30	Introduction to partial differential equations	13.1-13.2
07/31	Heat equation	13.3
08/01	Wave equation	13.4
08/02	Laplace's equation	13.5
08/06	Bessel and Legendre Series	12.6
08/07	Boundary problems in polar coordinate system	14.1-14.2
08/08	Review	chap.12-15&17-19
08/09	Final Exam	chap.12-15&17-19

The date of midterm and final exam is fixed as in the schedule, but the actual topics on each day may vary slightly according to the progress we make.