Department of Mathematics   **Faculty of Science**

MATH 437 (204370   COMPLEX VARIABLES   **3(3/3-0/0)**

Prerequisite   MATH 331 (206331)

Course Description

      The complex plane. Functions of a complex variable : limit, continuity, differentiation. The Cauchy - Riemann equations. Elementary functions. Analytic function. Cauchy's theorem. The integral formula and derivatives. Uniform convergence. Taylor and Laurent series. The calculus of residues and its application in evaluation of real integrals. Introduction to conformal mapping.

Course Contents	**No. of Lecture Hours**
1. The complex plane and function of a complex variable	10
- Limit	
- Continuity	
- Differentiation	
2. The Cauchy-Riemann equations	8
- Analytic functions	
- Cauchy's theorem	
3. The integral formula and derivatives	6
4. Taylor and Laurent series	6
5. Calculus of residues, poles	6
6. Application of residues	5
- Evaluation of real integrals	
7. Introduction to conformal mapping	4
Total	**45**