

Tennessee Technological University
Mathematics Department

MATH 6310-6320: Complex Analysis I-II

- I. COURSE DESCRIPTION FROM CATALOG:** Complex numbers, calculus of complex variables, analytic function. Cauchy's Theorem and complex integration, power series including Taylor's and Laurent's, residue theory with applications, conformal mapping with physical applications. Lec. 3. Cr. 3.
- I. PREREQUISITE(S):**
MATH 6310: C or better in MATH 4120 or MATH 5120 or consent of instructor.
MATH 6320: C or better in MATH 6310.
- III. COURSE OBJECTIVE(S):** This is a first course of the theory of functions and complex variables. Topics to be covered include analytic functions, Cauchy's Theorems and complex integration, power series including Taylor's and Laurent's, residue theory with applications and conformal mapping with physical applications.
- IV. TOPICS TO BE COVERED:** (Time Permitting)
- MATH 6310
- I. The Complex Number System
 - II. Metric Spaces and the Topology of \mathbb{C}
 - III. Elementary Properties and Examples of Analytic Functions
 - IV. Complex Integration
 - V. Singularities
- MATH 6320
- VI. The Maximum Modulus Theorem
 - VII. Compactness and Convergence in the Space of Analytic Functions
 - VIII. Runge's Theorem
 - XI. Entire Functions
- V. ADDITIONAL INFORMATION:**
- VI. POSSIBLE TEXTS AND REFERENCES:**
Functions of One Complex Variable, 2nd edition, John B. Conway
- VII. ANY TECHNOLOGY THAT MAY BE USED:**

Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). 1
An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The ODS is located in the Roaden University Center, Room 112; phone 372-6119.