

**Tennessee Technological University
Mathematics Department**

MATH 6540: Calculus of Variations and Applications

- I. COURSE DESCRIPTION FROM CATALOG:** Euler equations, constraints, Lagrange multipliers, Ritz method, applications. Lec. 3. Cr. 3.
- II. PREREQUISITE(S):** Consent of instructor
- III. COURSE OBJECTIVE(S):** This course is designed to provide for the graduate student in mathematics, science, or engineering an introduction to the ideas and techniques of the calculus of variations. The mathematics are also illustrated.
- IV. TOPICS TO BE COVERED:**
Chapter 1: Elements of the Theory
Chapter 2: Further Generalizations
Chapter 3: The General Variation of a Functional
Chapter 8: Direct Methods in the Calculus of Variations
- V. ADDITIONAL INFORMATION:**
- VI. POSSIBLE TEXTS AND REFERENCES:**
Calculus of Variations & Applications, by Gelfand
The Calculus of Variation, by Brunt
- 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.