

**Tennessee Technological University
Mathematics Department**

MATH 6070-6080: Applied Linear Statistical Methods I-II

I. COURSE DESCRIPTION FROM CATALOG: Regression analysis in the context of classical linear, nonlinear, generalized linear, and time series models. Lec. 3-3. Cr. 3-3.

II. PREREQUISITE(S):

MATH 6070: Consent of instructor.

MATH 6080: B or better in MATH 6070 or consent of instructor

III. 6070 COURSE OBJECTIVE(S):

1. To introduce the theory of modern regression analysis
2. To incorporate statistical techniques in the analysis of real world data
3. To acquaint students with statistical computing packages

6080 COURSE OBJECTIVE(S):

1. To generalize the normal error multiple regression model to data that are distributed as binary, Poisson, or other possible parametric setting, in addition to covering nonlinear models and regression models with dependent errors such as those covered in time series analysis
2. To incorporate statistical techniques in the analysis of real world data
3. To acquaint students with statistical computing packages

IV. TOPICS TO BE COVERED:

We will cover single and multivariate models assuming normality and independence in the error terms. Topics related to these models include estimation and prediction, diagnostics and remedial measures, model selection and validation. These topics will lay the ground work for additional linear models in future courses where the normality and independence assumptions may not be valid (i.e. logistic regression, time series, generalized linear models, etc.).

V. POSSIBLE TEXTS AND REFERENCES:

Applied Linear Statistical Models, by Neter, Kutner, Nachtsheim, and Wasserman, 5th edition, Irwin

VI. ADDITIONAL INFORMATION:

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.