

# ECMT - ECONOMETRICS

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## ECMT 638 Applied Time Series Econometrics

**Credits 3. 3 Lecture Hours.**

Examines econometric models and methods used to study time series data; emphasis on applications in macroeconomics; principles of estimation techniques and inference in the context of serially correlated and potentially large datasets as well as on the identification challenges in macroeconomic models.

**Prerequisites:** Graduate classification.

## ECMT 660 Mathematical Economics I

**Credits 3. 3 Lecture Hours.**

Use of selected types of mathematical tools in economic theory.

**Prerequisites:** Graduate classification; enrollment in 5-Year BS/MS-ECON program; or approval of instructor.

## ECMT 670 Econometric Analysis of Financial Data

**Credits 3. 3 Lecture Hours.**

Predictability of asset returns, test of random walk hypothesis, the microstructure of securities markets, event analysis, the CAPM and arbitrage pricing theory, the term structure of interest rates, dynamic models of economic equilibrium and nonlinear financial models; provides an accessible combination of theory and practice.

**Prerequisites:** Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.

## ECMT 673 Economic Analytics

**Credits 3. 3 Lecture Hours.**

Analysis of large household, corporate and financial data involving empirical modeling and SAS programming for prediction of economic decisions and outcomes; lecture, discussion and team project presentation format.

**Prerequisites:** Graduate classification and enrollment in the master's program in economics.

## ECMT 674 Economic Forecasting

**Credits 3. 3 Lecture Hours.**

Empirical application of econometric techniques to prediction in economics; model building and specification; examination of various modern forecasting techniques.

**Prerequisites:** Graduate classification; must be enrolled in the MS program in the department of economics; or approval of instructor.

## ECMT 675 Econometrics I

**Credits 3. 3 Lecture Hours.**

Empirical distributions of economic variables; elementary discrete and continuous distributions expressing econometric hypotheses, distributions of estimators and test statistics.

**Prerequisites:** MATH 151 and MATH 152 or approval of instructor.

## ECMT 676 Econometrics II

**Credits 3. 3 Lecture Hours.**

Use of statistics in economic theory as device for testing hypotheses, formulation of concepts and economic forecasting; regression analysis in economics problems, heteroskedasticity, autocorrelation, distributed lags, regressions with lagged dependent variable, dummy variables and in introduction to multi-equations economics models.

**Prerequisite:** ECMT 675 or equivalent.

## ECMT 677 Applied Microeconometrics

**Credits 3. 3 Lecture Hours.**

Estimation methods applied to economic problems; techniques include single and simultaneous equations models; general linear model in matrix form; tests of linear restrictions; Wald, Likelihood Ratio and Lagrange Multiplier tests; seemingly unrelated regressions, simultaneous equations identification and estimation; missing observations, errors in variables and non-linear estimation in economics problems.

**Prerequisites:** ECMT 675 and ECMT 676; STAT 610 or approval of instructor.

## ECMT 678 Advanced Topics in Econometrics

**Credits 3. 3 Lecture Hours.**

Continuation of ECMT 677; estimation methods applied to economic problems; techniques include qualitative limited dependent variables; pooled time-series and cross-section data; instrumental variables in economics problems; estimation of average treatment effects.

**Prerequisite:** ECMT 677.

## ECMT 680 Financial Econometrics

**Credits 3. 3 Lecture Hours.**

Basic concepts of financial engineering and elementary theory of stochastic processes and continuous time models; selected topics related to current financial econometrics research.

**Prerequisites:** Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.