
Professor Robert H. Patrick
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Rutgers Business School - Newark and New Brunswick

Class meets:
Wednesdays 6:40-9:30PM, Business Rockafeller Road (BRR) 5095, Livingston Campus.

Offices and hours:
• NB: BBR 5060, Wednesdays 5:30-6:30PM.
• Newark Campus: 1 Washington Park 1148, Thursdays 2:30-3:30 P.M.
• by appointment.

E-mail: rpatrick@rutgers.edu (include FAPF at the beginning of the subject line)
Web: http://www.rci.rutgers.edu/~rpatrick/hp.html

Phone: NB x59237, during office hours only. Newark (973) 353-5247. Communication by e-mail is preferred outside of office hours.

Description: This course presents an overview of short-term and long-term financial analysis, planning, and forecasting. Regression analysis, linear programming, and other computer techniques are developed and illustrated in alternative financial planning and forecasting analyses.

Prerequisites: Introduction to financial management, Statistical methods in business, Computer applications for business, Introduction to microeconomics, Principles of Accounting, Calculus I.

References/Texts
I provide extensive handouts and problems posted on Blackboard (BB). In addition to the course handouts provided, texts (1) and (2), below, will likely be valuable references. If your goal is to be a practitioner, i.e., develop the analyses, you will find these references extremely useful in your professional endeavors. Even if you are not interested in developing the technical analyses yourself, you will find the references useful in understanding and applying alternative technical analyses for management and policy decisions.


**Computer Programs:** Microsoft Excel is the minimum software requirement for the course. However, more advanced software, such as EViews (see the Brooks text for examples), STATA, SAS, R, among others, will facilitate relatively efficient estimation.

**Grading Policy:**

3 quizzes 50%
- cumulative
- equally weighted
- your lowest score will be dropped
- no make up exams
- anticipated schedule:
  - February 18 Quiz 1
  - March 11 Quiz 2
  - April 22 Quiz 3

**Project (paper and presentation) 50%**
Course projects serve three purposes:
- a) Provide students the opportunity to pursue guided research using FAPF tools.
- b) Report organization and writing experience.
- c) Presentation organization and speaking experience.
Anticipated schedule:
- February 25 project proposals
- April 8 preliminary reports
- April 27 complete projects due
- April 29 Presentations

**Course Outline:**
1. Introduction
2. Statistical Analysis of Financial and Accounting Data
3. Linear Regression Analysis
   - OLS estimation
   - Hypothesis Testing
   - Goodness-of-fit
4. Fundamentals of Forecasting
   - Roles and conditions of forecasting
   - Explanatory versus time-series forecasting
   - Accuracy of forecasting
   - Descriptive Statistics
   - Selection of forecasting models
   - Forecasting Technique
5. Simulation models for financial planning
   - The simulation process
   - Evaluating simulation models
   - Model estimation
Vector Autoregressions
Limited data
Dynamic models
Stability and Oscillations
Multipliers and dynamic response
The impulse response function and vector autoregressions
Stochastic simulation

6. Time-series models
Smoothing and extrapolation
Seasonal adjustment
Stochastic time-series
The autocorrelation function
Random Walks
Co-integrated time-series
AR, MA, ARMA, and ARIMA models

7. Estimating and Forecasting with time-series models
Diagnostic checking
Minimum mean-square-error forecasts
Forecast error

8. Applications of regression and/or time-series models and simulation in finance.

Web Pages (there are many of potential interest, here are a few examples)
http://libguides.rutgers.edu/business
http://www.economist.com
http://www.FT.com
http://online.wsj.com/public/us
http://equity-research.com
http://lib.stat.cmu.edu
http://www.lib.umich.edu/govdocs/stecon.html
http://www.federalreserve.gov/
http://fisher.osu.edu/fin/fdf/osudata.htm
http://www.rba.co.uk/sources/stats.htm
http://www.bea.gov/
http://www.treasurydirect.gov/govt/govt.htm
http://www.economagic.com/
http://www.oswego.edu/~economic/econsoftware.htm
http://www.forecastingprinciples.com/dictionary/defined%20terms.html

This course fulfils the Applied Statistical Methods requirement for

[Canadian Institute of Actuaries] [Casualty Actuarial Society] [Society of Actuaries] Validation by Educational Experience (VEE)
ACADEMIC INTEGRITY

I do NOT tolerate cheating. Students are responsible for understanding the RU Academic Integrity Policy (http://academicintegrity.rutgers.edu/files/documents/AI_Policy_2013.pdf). I will strongly enforce this Policy and pursue all violations. I will screen all written assignments through SafeAssign or Turnitin, plagiarism detection services that compare the work against a large database of past work. Don’t let cheating destroy your hard-earned opportunity to learn. See business.rutgers.edu/ai for more details.

SUPPORT SERVICES


If you are a military veteran or are on active military duty, you can obtain support through the Office of Veteran and Military Programs and Services. http://veterans.rutgers.edu/

If you are in need of mental health services, please use our readily available services. [Rutgers Counseling and Psychological Services – New Brunswick: http://rhscaps.rutgers.edu/]

If you are in need of physical health services, please use our readily available services. [Rutgers Health Services – New Brunswick: http://health.rutgers.edu/]

If you are in need of legal services, please use our readily available services: http://rusls.rutgers.edu/

If you are in need of additional academic assistance, please use our readily available services. [Rutgers University-New Brunswick Learning Center: https://rlc.rutgers.edu/]