

# PLAN DE COURS

ECN 7573A

SUJETS SPÉCIAUX – ÉCONOMIE FINANCIÈRE

HIVER 2017

3 CR.

Professeur : **GARCIA, René**  
Disponibilité : mardi, de 16h à 18h, local C-6031  
Courriel : [rene.garcia@umontreal.ca](mailto:rene.garcia@umontreal.ca)  
Téléphone : 514 343-6111, poste 28490

\*\*\* Pour connaître les dates importantes du trimestre (modification, abandon, etc.), consultez le calendrier des études : [http://fas.umontreal.ca/fileadmin/Documents/FAS/fas/Documents/Calendrier/Calendrier\\_2016-2017.pdf](http://fas.umontreal.ca/fileadmin/Documents/FAS/fas/Documents/Calendrier/Calendrier_2016-2017.pdf) \*\*\*

Une version électronique de ce plan de cours est disponible sur Internet. On peut y accéder par la page d'accueil du Département de sciences économiques (<http://sceco.umontreal.ca/accueil/>). Veuillez cependant noter que les informations qui suivent peuvent faire l'objet de modifications au cours du trimestre. Le cas échéant, le professeur vous avisera en classe ou, s'il y a lieu, au moyen du calendrier affiché sur le site StudiUM du cours. Par ailleurs, pour la présentation de vos travaux pratiques, vous trouverez notre Guide à <http://sceco.umontreal.ca/ressources-services/ressources-formulaires/>.

## COURSE OBJECTIVES

This course has as its main objectives to introduce students to the main research areas in empirical finance and to provide them with the basic methods to conduct empirical research in Finance. The participants should be able, at the end of the course, to address a specific empirical question with the appropriate estimation and testing methodologies.

## TEACHING MATERIALS

## RESEARCH PAPERS

The course is mainly built around research papers that the students are expected to read before class. The papers will be made available to students on a dedicated website. Other sources will be the periodicals available online at [http://opurl.bib.umontreal.ca:9003/sfx\\_local/a-z/default](http://opurl.bib.umontreal.ca:9003/sfx_local/a-z/default), on the SSRN website for the Research Paper Series <https://www.ssrn.com/en/index.cfm/rps/> or the website of authors for current working papers.

## REFERENCE TEXTBOOKS

Campbell, J.Y., Lo, A.W. et MacKinlay, A.C., (CLM) *The Econometrics of Financial Markets*, Princeton University Press, 1997.

Cochrane, John, (CO) *Asset Pricing*, Princeton University Press, (2001), revised edition 2005.

Singleton, Kenneth, (SI) *Empirical Dynamic Asset Pricing: Model Specification and Econometric Assessment*, Princeton University Press, 2006.

## OTHER BOOKS OF INTEREST FOR EMPIRICAL FINANCE

Bali, T., Engle R. and S. Murray, *Empirical Asset Pricing, The Cross-Section of Stock Returns*, Wiley, 2016.  
Gouriéroux, C., and J. Jasiak, *Financial Econometrics: Problems, Models and Methods*, Princeton University Press, 2001.  
Ilmanen, Antti, Expected Returns, *An Investor's Guide to Harvesting Market Rewards*, Wiley Finance, 2011.  
Tsay, R. S., *Analysis of Financial Time Series*, Wiley Series in Probability and Statistics.

## OTHER ECONOMETRICS-ORIENTED TEXTBOOKS

Greene, W.H., *Econometric Analysis*, MacMillan, 1993.  
Hamilton, J. D., *Time Series Analysis*, Princeton University Press, 1994.  
Wooldridge, J.M., *Econometric Analysis of Cross-Section and Panel Data*, 2010.

### EVALUATION

Students will be assessed on the quality of two research presentations in class and of one research paper. While the class presentations will be based on presenting a synthesis of several papers on a topic, the research paper will have to address an empirical issue and use both data and econometric methodologies. Both the presentations and the paper will be expected to obey the professional standards of researchers in the field and will serve as a good training ground for the students' future thesis.

LE PLAGIAT À L'UDEM EST SANCTIONNÉ PAR LE *RÈGLEMENT DISCIPLINAIRE SUR LA FRAUDE ET LE PLAGIAT CONCERNANT LES ÉTUDIANTS*. POUR PLUS DE RENSEIGNEMENTS, CONSULTEZ LE SITE [WWW.INTEGRITE.UMONTREAL.CA](http://WWW.INTEGRITE.UMONTREAL.CA).

- Research Presentations in class (2)..... **40%**
- Research Paper (to be handed out at end of course)..... **60%**

Selon le règlement pédagogique (article 9.9 reproduit ci-dessous), l'étudiant doit motiver toute absence à une évaluation; pour ce faire, il faut s'adresser au Secrétariat de son département d'attache et non pas au professeur. Seul un motif imprévu et hors du contrôle de l'étudiant peut être acceptable.

« L'étudiant doit motiver, par écrit, toute absence à une évaluation ou à un cours faisant l'objet d'une évaluation continue **dès qu'il est en mesure de constater qu'il ne pourra être présent à une évaluation et fournir les pièces justificatives.** [...] il doit [...] **fournir les pièces justificatives dans les sept jours ouvrés suivant l'absence.** Le doyen ou l'autorité compétente détermine si le motif est acceptable en conformité des règles, politiques et normes applicables à l'Université. Les pièces justificatives doivent être dûment datées et signées. De plus, le **certificat médical doit préciser les activités auxquelles l'état de santé interdit de participer, la date et la durée de l'absence, il doit aussi permettre l'identification du médecin.** »

### CONTENTS

These lectures will focus on the empirical aspects of asset pricing and on the econometrics of financial markets. We start by studying the fundamental object of interest, returns of financial assets, and their probability distributions. We then review several econometric methods to estimate and test financial models for returns. In particular, we analyze the maximum likelihood approach and the generalized method of moments, corresponding tests as well as linear and nonlinear filtering methods. For the models, we start with the Capital Asset Pricing Model (CAPM) and the multifactor models, which are the workhorses of empirical finance. We apply the previous econometric methods to estimate and test these models in order to establish if the empirical facts are consistent with model implications. Next, we address the fundamental issue, both for investors and researchers in finance, of return predictability. We put forward a number of stylized facts about return predictability. Dynamic, intertemporal asset pricing models are built to replicate these stylized facts. These models link the real economy (consumption) to financial markets. We study in particular asset pricing models with long-run risks.

The last section is dedicated to the econometrics of fixed-income securities and options. It involves the estimation of models specified in continuous time but estimated with discretely sampled data.

## **COURSE OUTLINE**

### **Section 1: Returns and Econometric Methodology**

- 1) Return Distributions
- 2) Estimation
  - a) Maximum Likelihood Principle
  - b) Maximum Likelihood with Conditional Distributions: applications to modeling return volatility and changes in regimes
  - c) Generalized method of Moments: Estimating Stochastic Discount Factor Models
- 3) Testing
  - a) Introduction to testing
  - b) The trilogy of tests

### **Section 2: The CAPM Model**

- 1) Review of basic theoretical concepts
- 2) Estimation and tests
- 3) Empirical results

### **Section 3: Multifactor Asset Pricing Models**

- 1) Review of basic theoretical concepts
- 2) Estimation and tests
- 3) Empirical results
- 4) Event Studies

### **Section 4: Predictability of Returns**

- 1) Predictability based on past price changes
- 2) Predictability based on other financial or economic variables

### **Section 5: Estimation and Assessment of Intertemporal Equilibrium Models**

- 1) Different approaches: Calibration, Regressions, Maximum Likelihood, GMM
- 2) Consumption-based asset pricing models with power utility
- 3) More general utility functions: habit formation, recursive utility, state-dependent preferences

### **Section 6: The Econometrics of Fixed-income Securities**

- 1) Models of the term structure of bond yields
- 2) Empirical analysis of dynamic term structure models
- 3) Equilibrium term structure models

### **Section 7: The Econometrics of Option Pricing**

- 1) A short survey of continuous-time models
- 2) Equilibrium Option Pricing in Discrete Time