


5.00 crédits

30.0 h

Q1

Enseignants	Cadelon Bertrand ;
Langue d'enseignement	Anglais
Lieu du cours	Louvain-la-Neuve
Préalables	<p>You should have a knowledge of basic topics in statistics, econometrics and finance such as those covered in the following courses:</p> <p>Fundamental mathematical and statistical concepts (such as those covered in Mathématiques avancées et fondements d'économétrie [LECGE1337])</p> <p>Advanced Finance [LLSMS2100A or LLSMS2100B]</p> <p>In addition, this course is reserved for students with a bachelor's degree in business engineering or students with equivalent quantitative method skills</p>
Thèmes abordés	<p>This course overviews topics in computational finance and financial econometrics (data sciences applied to finance).</p> <p>The emphasis of the course will be on making the transition from an economic model of asset return behavior to an econometric model using real data.</p> <p>This involves:</p> <ol style="list-style-type: none"> 1. exploratory data analysis; 2. specification of models to explain the data; 3. estimation and evaluation of models; 4. testing the economic implications of the model; 5. forecasting from the model. <p>The modeling process requires the use of economic theory, matrix algebra, optimization techniques, probability models, statistical analysis/econometrics, and statistical software (R).</p> <p>Both edX and DataCamp platforms will be used to allow practical training and continuous learning on R.</p>
Acquis d'apprentissage	<p>A la fin de cette unité d'enseignement, l'étudiant est capable de :</p> <p>Upon completion of this course, students are expected to complete the following key tasks:</p> <ol style="list-style-type: none"> 1. Have a good understanding of important issues in financial econometrics and computational finance; 2. Be able to apply concepts and tools learned in class. <p>Upon completion of this course, students are expected to develop the following capabilities :</p> <ol style="list-style-type: none"> 3. Knowledge and reasoning; 4. Critical thinking skills.
Modes d'évaluation des acquis des étudiants	Workshop hebdomadaire, projet final, défense orale.
Méthodes d'enseignement	Lectures, classes inversées, ateliers, interventions d'experts, projet final.
Contenu	<p>Ce cours se propose de couvrir les aspects théoriques et pratiques de la prévision. Les sujets abordés sont:</p> <ul style="list-style-type: none"> . Rappel des bases de l'économétrie des séries temporelles. . Processus AR, MA, ARMA. . Racines unitaires et non-stationarité. . Modèles VAR and VECM. . Modèles récents pour la prévision. <p>Tous les exercices et projets seront faits sous R.</p>
Ressources en ligne	Moodle et teams

Bibliographie	<p>Forecasting: Principles and Practice (FPP): Rob J Hyndman and George Athanasopoulos, https://otexts.com/fpp2/</p> <p>Introduction to Econometrics with R (IER): Christoph Hanck, Martin Arnold, Alexander Gerber, and Martin Schmelzer, https://www.econometrics-with-r.org/</p>
Faculté ou entité en charge:	CLSM

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Crédits	Prérequis	Acquis d'apprentissage
Master [120] : ingénieur de gestion	INGM2M	5		
Master [120] : ingénieur de gestion	INGE2M	5		