UCL Université catholique de Louvain

LACTU2020

2015-2016

Fixed income mathematics

5.0 credits	30.0 h + 15.0 h	1q

Teacher(s) :	Devolder Pierre ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	The main theme is the study of interest rates products. After an introduction devoted to the interest theory, the theory of loans and bonds is developed. The management of interest rates risks in finally analysed.
Aims :	The aim of this course is to present the basic methods of financial deterministic mathematics. At the end of the course, the students must be able to price simple financial products and manage the risks associated with different interest rates. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	Content The following topics will be developed: 1. Generalities on interest 2. Principle of simple interest 3. Principle of compound interest 4. Financial structure with more than 2 cash flows - simple interest 5. Financial structure with more than 2 cash flows - compound interest 6. Annuity 7. Loans 8. Bonds 9. Term structure of interest rates 10. Spot rates 11. Risks of interest rates 12. Duration, convexity and immunisation Methods In-class activities X0 Lectures X0 Exercices/PT At home activities X0 Exercices to prepare the lecture X0 Paper work
Other infos :	Evaluation : Class participation and written examination, in French Support : Slides provided through icampus References : based on the book : "le financement des régimes de retraites" (Pierre Devolder, Economica, Paris)
Faculty or entity in charge:	LSBA

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Actuarial Science	ACTU2M	5	-	
Master [120] in Statistics: General	STAT2M	5	-	
Master [120] in Mathematical Engineering	MAP2M	5	-	
Master [120] in Mathematics	MATH2M	5	-	