UCLouvain

llsmf2904

2022

Managing Complexity

5.00 credits	22.5 h + 15.0 h	Q2

Teacher(s)	Coeurderoy Régis ;Decaux Loïc ;Iania Leonardo ;
Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	The material covered in the courses of bachelor in Business Engineering. In particular, students are assumed to be familiar with basic concepts of statistics and econometrics, financial accounting, managerial accounting, and mathematics for business. Knowledge of statistical and econometrics programming languages such as R-studio, and/or Matlab, etc, is assumed.
Main themes	We live in a complex environment, where the interconnections among economic agents (firms, consumers, ect.), their choices/decisions under uncertainty and as a response to unforeseen events determine the successfulness of firms' activities. The last global economic crisis driven by the Covid-19 pandemic, the great financial crisis, the digital transformation, and the pressing need for a transition towards a greener economy, are just some examples how complex and uncertain the firms' competitive arena can be. In this course, students will learn basic tools that companies can use to identify, report and analyze the risks/opportunities that a complex environment can bring to firms' activities.
Learning outcomes	**At the end of this learning unit, the student is able to :** ***Upon completion of this course, students will:*** • Be able to understand and critically assess the risks an organization is exposed to; • Critically assess the reporting of risk in corporations and associated strategic reporting practices; • Analyze the risks a corporation is exposed to; • Apply empirical work in a (relatively) new software (R, Python, etc.).
Evaluation methods	The evaluation methods are based on "Continuous Evaluation", i.e. no exam is foreseen at the end of the teaching session. Students will work in groups on a concrete, real-life case study, for which they will deliver a written report and an oral presentation.
Teaching methods	The course will be centered around the following teaching methods: • In-class lectures • Practical sessions • Regular meetings with the professors and assistants • Case studies • Guest lecture Prior to the participation to those activities, students will be provided with learning material and compulsory readings that will be pivotal for the understanding of the teaching activities.
Content	As the scope of the course is broad, the team of instructors will select a range of topics based on their background, interests and experience. Potential covered topics are (but not limited to): **Part 1. Introduction:** • What is Volatility, uncertainty, complexity and ambiguity (VUCA)? Sources & consequences • The corporate search for resilience • Risk assessment for the board (from analysis of annual reports) **Part 2. Qualitative aspects:** • Governance & annual reports • Risk awareness • Internal control • Risk identification • Risk management • Etc. **Part 3. Quantitative aspects:** • Valuation techniques • Decision trees • Simulation techniques • Sensitivity and scenario analysis

	• Real option analysis • Stress testing • Etc.
Bibliography	**Potential references:** • COSO and World Business Council for Sustainable Development (2018). Applying enterprise risk management to environmental, social and governance-related risks. • Enterprise Risk Management, by Jonathan Fraser and Betty J. Simkins. • Business Risk and Simulation Modelling in Practice: Using Excel, VBA and @RISK, by Michael Rees, Wiley, 2015. • Real Options Analysis (Third Edition): Tools and Techniques for Valuing Strategic Investments and Decisions with Integrated Risk Management and Advanced Quantitative Decision Analytics, by Johnathan Mun.
Faculty or entity in charge	CLSM

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] : Business Engineering	INGE2M	5		🔍
Master [120] : Business Engineering [CEMS Programme]	INGM2M	5		🔍