Banking and Asset Management
**Introduction**

The banking world, since the 2008 credit crunch and the following backlash of the 2011 sovereign crisis, has gone through a deep and radical mutation.

The old disbelief in the risks of a “bank run”, of a negative interest rate or the need for an institution to be nationalized for liquidity reasons, has suddenly shattered.

The capitalist world has changed and even capitalism itself has never been questioned to such an extent.

In this evolving context, it is crucial for young graduates in management specializing in finance to be as knowledgeable as flexible.

A broad, critical and educated perspective on banks, insurance, private equity and asset management companies becomes a plus for agents of change in the financial sphere.

The Banking and Asset Management orientation provides knowledge and skills to future financial analysts, fund managers as well as to corporate and market finance professionals.

The orientation offers a technically strong program in the field of the management of financial institutions, equity research, project finance and financial markets. It especially emphasizes the need to maintain a rigorous approach to controlling the mechanisms of asset, liability and risk management while insisting continually on the particular responsibility of those preparing themselves to become tomorrow’s financial experts.

The Master in Management with a focus on Banking and Asset Management has been acknowledged as incorporating at least 70 percent of the CFA Program Candidate Body of Knowledge (CBOK).

It has been recognised for placing emphasis on the CFA Institute Code of Ethics and Standards of Practice within the program. This program positions students well to obtain the Chartered Financial Analyst® designation, which has become the most respected and recognized investment credential in the world.

Through its participation in this recognition program, HEC Liège is eligible to three student scholarships for the CFA examination each academic year. The scholarship waives the one-time CFA Program enrollment fee and reduces the exam registration fee to US$350.

Students have the possibility to follow this curriculum entirely in English.
Objectives

The specialization in Banking and Asset Management offers a wide-ranging yet in-depth program, organized around the major areas of financial organization, equity research, and market management. It aims to provide students with thorough knowledge of the key principles of financial markets as well as of the most innovative and sophisticated calculus and optimization procedures needed to master the financial instruments traded on markets. Essentially, students are required to be able to apply rather than develop these principles and methods.

This orientation is aimed at students interested in a wide range of positions in financial markets as well as other job opportunities while enrolling in a program providing fast access to the professional world.

This orientation leads to the acquisition of the following skills:

- **Critical judgment and knowledge** in the specialized areas relating to financial institutions, private equity and asset management companies;
- **Advanced knowledge of financial institutions**, markets and financial instruments, of their functioning and use;
- **A command of the concepts and issues** relating to corporate finance, asset management and risk management;
- The acquisition of **the basic principles of market finance** through an opportunity to develop actual expertise and rigor in financial reasoning;
- An understanding of **the scope of application of financial operations** through mastering innovative approaches to their calculation and optimization;
- **A critical perspective** on the skills acquired from the program through personal reflection on the financial function and on the experience acquired from individual and group work.
Job Prospects

- The skills and methods acquired throughout this orientation apply to a wide range of situations: graduates holding this specialized degree will find job opportunities in the following areas:
  
  - Asset management tasks (mutual funds/pension funds/hedge funds) related to all portfolio transactions, from day-to-day asset management to risk management or strategic investment decision-making;
  
  - Jobs of financial analyst for private equity funds, corporate finance departments or for equity departments in the banking sector;
  
  - Generally, all jobs concerned with portfolio management (institutional investors, private banking, wealth management, insurance etc.);
  
  - All kinds of executive position in financial institutions;
  
  - Executive functions in financial management in commercial, industrial or financial businesses relating, among others, to cash management, asset/liability or credit management.

Strengths

- **Proximity to the field**, with many collaborations with cash management, equity research, asset management, risk management departments and with consultants specializing in the area of financial institutions;

- **The technical competence** of a multidisciplinary faculty combining a command of financial economy, econometrics, statistics and engineering sciences; the access to a trading room equipped with tools for equity and bond valuations and fund data;

- **An international learning context** as far as faculty and students are concerned and a large degree of openness;

- **Collaboration with partner enterprises** strongly involved in the Chairs (see p. 15) and proximity with the Gambit spin-off, which is active in developing state of the art investor profiling, portfolio analysis and optimization systems.
Program

The specialization in Banking and Asset Management relies on compulsory courses in management (55 credits) and then proposes 6 specialized courses, skills portfolio workshops, an internship and a thesis (for a total of 65 credits), all of which spans a period of two years.

YEAR 1

Compulsory courses in management (45 credits)

+ Banking and Asset Management (15 credits)
  . Banking and Insurance (5 credits)
  . Financial Derivatives (5 credits)
  . Investments and Portfolio Management (5 credits)

YEAR 2

Compulsory courses in Management (10 credits)

+ Banking and Asset Management (50 credits)
  . Fund Industry
  . Internship (10 crédits)
  . Master Thesis (20 credits)
  . Skills portfolio (5 credits)

2 courses to be chosen among:

  . Ethics, Regulation and Compliance in Finance (5 credits)
  . Law and Taxation of Financial Institutions (French language) (5 credits)
  . Financial Risk Management (5 credits)
  . International Finance (5 credits)
  . Advanced Corporate Finance and Modeling (5 credits)
  . Estate and Financial planning (5 credits)

The contents of the specialization are briefly described in the following pages. Full pedagogical mission statements are available on the ULg site (http://progcours.ulg.ac.be/cocoon/programmes/G2UGE01_C.html#3494014) and on the Lola@ platform used by HEC Liege (http://lola.hec.ulg.ac.be/).
First year: 3 compulsory courses

BANKING AND INSURANCE

1. Partim Banking

The course introduces the general activities of a financial institution, with a focus on the bank’s role as a financial intermediary. The Bank’s balance sheet structure is analysed in detail, with the specificities of the bank’s objectives and constraints. The recent crises of 2008 and 2010-11 will be analysed with their impact on the evolution of the banking industry. The first elements of bank risk management will be introduced.

a. Lecture 1
   I. Part A: Introduction to banking
   II. Part B: Financial structure

b. Lecture 2
   I. Part A: Neo-classic theory of banking
   II. Part B: The management of capital

c. Lecture 3
   I. Part A: Measuring and evaluating performance
   II. Part B: Risk management for changing interest rates: ALM and duration techniques

2. Partim Insurance

The course introduces the notion of insurance as it is considered by its different stakeholders: the consumer and society, the insurer himself, the surrounding economical actors and institutions. The inverted production cycle of the insurance business is emphasized, and basic actuarial mechanisms for pricing and provisioning are exposed. Finally, the new European supervision and regulation context, "Solvency II", is presented.

a. Lecture 1
   I. Risk: definitions, classification, cost
   II. Insurance: a form of risk management
   III. Key facts about the European insurance market
   IV. Some remarks on insurance availability and behaviours

b. Lecture 2
   I. The inverted production cycle
   II. Cartography of an insurer activities and value creation
   III. Introduction to tariffs
   IV. Introduction to reserves

c. Lecture 3
   I. The need for prudential supervision and regulation
   II. Solvency I
   III. Towards Solvency II
   IV. Some institutional actors
FINANCIAL DERIVATIVES

Over the last decades, firms have been increasingly challenged by financial price risks due to unpredictable movements in exchange rates, interest rates and commodity prices. Financial markets have responded to this increase in volatility by developing a continuously growing range of financial instruments, called derivatives, as well as strategies combining these with other traditional financial instruments. As a result, derivative markets have been rapidly increasing in volume for the last decades and derivatives are today recognized as very useful corporate finance and investment tools. Not only the officially exchange traded instruments are very popular as hedging or speculative devices, but also privately arranged or Over The Counter contracts attract a wide variety of customers. Any student in Financial Economics should at least have some basic knowledge of the possible uses, users, and pricing of the most important derivative instruments. In this course we aim to provide such knowledge. At the end of the course students should feel more comfortable about this complex financial environment.

At the end of this course students will be able to:
• understand how financial derivative instruments (forward, futures and options) work as well as for what purpose they have been designed;
• design forward-, futures- and option-based arbitrage and hedging strategies;
• build rational forward-, futures- and option- price estimates (including among others Black and Scholes option price estimates);
• get a first introduction into swap markets, understand the role and functioning of swap instruments;
• get a first introduction into credit derivative markets and understand the role and functioning of CDS instruments;
• develop optimal investment strategies integrating financial derivative instruments.

INVESTMENTS AND PORTFOLIO MANAGEMENT

The course follows the whole investment process. Its logical follow-ups are the courses of Risk Management and Estate and Financial Planning (BAM), among others. This course features in the framework of the CFA Institute University Recognition Program. It spans a significant portion of the CFA Programe Candidate Body of Knowledge (CBOK), and explicitly prepares for the CFA certification.

• Types of equity securities and their characteristics
• Equity markets: characteristics, institutions, and benchmarks
• Types of fixed income securities and their characteristics
• Fixed Income markets: characteristics, institutions and benchmarks

DETAILED PLAN:

A - Efficient capital markets
1. Efficient Market Hypotheses
2. Tests and Results of the Hypotheses
3. Behavioral Finance
4. Implications of Efficient Capital Markets

B - On the way to the CAPM
  1. Risk and return: assumptions
  2. Markowitz Portfolio Theory
  3. The Capital Market Line
  4. The Security Market Line
  5. CAPM: Theory vs. Practice

C - Multifactor Models
  1. Introduction to Multifactor Models
  2. Arbitrage Pricing Theory
  3. Empirical Multifactor Models
  4. Style Analysis

D - Passive and Active Strategies
  1. Passive Strategies
  2. Fundamental Active Strategies
  3. Technical Active Strategies
  4. Asset Allocation Readings

E - Bond Portfolio Management
  1. Bond Valuation and Yields
  2. The Yield Curve
  3. Duration and Convexity: an Introduction
  4. Bond Investment Strategies

F - Alternative Investments
  1. The Notion of Alternative Investments
  2. Hedge Funds
  3. Issues in Hedge Funds Investments
  4. Other Alternative Instruments
  5. Alternatives

G - Portfolio Performance
  1. Traditional performance measures
  2. Alternative performance presentation methods
  3. Scope and use of these measures
  4. Preference-related measures

H - Special topics
Based on guest lectures (specific material, attendance is compulsory)
Second year: 1 compulsory course and 2 courses to be chosen among 6

**FUND INDUSTRY (COMPULSORY)**

The course aims at providing Business and Law students (as well as anyone interested in making a career in the mutual fund industry) with an overview of the mutual fund industry regarding basic principles as well as the different sorts of jobs. This course is practice oriented and is built around Luxembourg mutual fund industry standards. Luxembourg is by far the European leader (and second in the world behind the United States) in the mutual fund industry with more than 11,000 funds managing around 1,800 billion Euros. Financial services in Luxembourg represent more than 44,000 employees contributing to almost one third of Gross Domestic Product.

The course is articulated around 9 main parts. All these parts are presented by experts in mutual funds from the academic as well professional world (KBL, EFA, Deloitte & Touche, Arendt & Medernach, la bourse de Luxembourg, Elvinger, Hoss & Prussen, KPMG, Alter Domus).

> **Part 1:** Introduction to Mutual Fund Markets.
> **Part 2:** The different Investment Vehicles (Legal structures for investment funds: UCits funds, non-UCits funds-AIFMD, SIF, SICAR).
> **Part 3:** Global Overview of the Luxembourg Fund Industry (UCits funds, UCits III, UCits IV, non UCits funds, UCits V).
> **Part 5:** Set-up of a UCI and ongoing requirements of UCIs (Pre-AIFMD/Post AIFMD, choice criteria, structure available).
> **Part 6:** Fund Administration (fund accounting, compliance and risk management, transfer agency, late trading, market timing, dilution, anti-money laundering, the different fees).
> **Part 7:** Organization and Supervision of Investment Funds (regulatory authority, auditor, focus on CSSF circular 02/77, custodian, Corporate Governance).
> **Part 8:** Alternative funds (hedge funds, REITs, private equity).
> **Part 9:** Admission to Trading of a UCI (advantages, admission procedure, continuing obligations, AIFMD, ETFs).

**ETHICS, REGULATION AND COMPLIANCE IN FINANCE**

Students are expected to have passed the courses of Banking & Insurance and Investments & Portfolio Management as prerequisites.

**Part 1: ERC in the Funds Industry (main responsible: Y. Francis)**

1. Introduction
   a. Importance of ethics in finance
   b. Difficulties in ethical decision making
   c. Improving the odds of doing the right thing
2. Ethics in the Funds Industry
   a. The standards of professional conduct (theory & case studies)
      i. Professionalism - Antitrust Disclosure Rules Violation
      ii. Integrity of Capital Markets - the case of LIBOR
      iii. Duties to Clients - Madoff’s Ponzi Scheme
      iv. Duties to Employers - GS board member reveals confidential data
      v. Investment Analysis, Recommendations, and Action - Investment bank analysts stayed bullish as Valeant struggled
      vi. Conflicts of Interest - Aviva traders manipulate deals to boost their fees
   b. Applications

3. Compliance in the Funds Industry
   a. Compliance with enforced regulations (e.g. AIFMD reporting, market abuse controls)
   b. Compliance with funds governing documents
   c. Corporate Governance, segregation of duties and conflicts of interest

4. Regulation in the Funds Industry
   a. Emergence of new regulations (e.g. UCITS V, AIFMD, MiFID II)
   b. Regulation enforcement and supervision

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Part 2: ERC in Banking (main responsible: G. Hübner)

1. Ethics in Banking
   b. Agency conflicts in banking and the responses of the industry
   c. The three lines of defense in banking
   d. Internal control, internal and external audit (testimonies)

2. Compliance in Banking
   a. Consumer protection and the ESMA/FSMA guidelines
   b. Anti-Money-Laundering (AML) and the prevention of terrorist attacks
   c. Compliance and Legal: a practical view (testimonies)

3. Regulation in Banking
   a. The Basel framework revisited in light of the financial history
   b. The SSM and the importance of the national supervisory authorities
   c. Regulation perspectives (testimonies)

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LAW AND TAXATION OF FINANCIAL INSTITUTIONS (FRENCH LANGUAGE)

This course aims to introduce students to the legislation and tax regimes of banks and insurance companies, with a view to approaching the legal problems which these institutions face on the one hand and the taxation on their products on the other. Analysis of these
products will cover tax aspects of saving and investment products, but also certain hybrid products.

Contents
a. Distinction debt vs. equity. Analysis of certain hybrid products issued by financial institutions.
b. The banking world.
   (i) banking products for individuals. Interest, dividends, capital gain and group investments.
   (ii) Banking products for companies.
   (iii) Tax regime of investment funds.
c. The world of insurance.
   Introduction.
   (i) Life insurance and income tax.
   (ii) Life insurance and inheritance law.
   (iii) The success of Luxembourg life insurances linked to individual funds.
d. The end the banking secrecy and the automatic exchange of information. Money laundering.

FINANCIAL RISK MANAGEMENT
This advanced finance course provides an overview of the risk management function and scope in a financial institution, and review the main financial risks: Market Risk, Interest-Rate Risk, Credit Risk, Operational Risk, Liquidity Risk... Basic risk management concepts will also be detailed (stochastic processes, hedging, Greeks, duration, dependence and copulae, Value-at-Risk...).

CONTENTS:
   a. 1. The scope of financial risk management
   a. 2. Creating value with risk management
   a. 3. Principles of hedging
b. Derivatives and Risk Hedging
   b. 1. Derivative securities and markets
   b. 2. Hedging linear exposures/instruments
   b. 3. Hedging options
c. Hedging Fixed Income Instruments
   c. 1. Yield curve dynamics
   c. 2. Duration and convexity
   c. 3. Duration hedging
   c. 4. Interest rate derivatives
d. Regulation and risk management
   d. 1. The need for RM in financial institutions
   d. 2. The Basel regulatory process
   d. 3. Basel III
   d. 4. Comprehensive Assessment.
e. Quantitative market risk models
   e. 1. Value-at-Risk
   e. 2. VaR characteristics
   e. 3. Portfolio VaR
An introductory lecture is organized at the beginning of the course with a guest speaker occupying a function of Chief Risk Officer (CRO) or equivalent in a prominent financial institution. Other external guests (financial consulting experts) will also share their knowledge and experience in risk management.

To illustrate and practise the concepts, a set of interactive exercise sessions will be organized in the computer and virtual trading room of HEC Liège. Furthermore, case studies representing virtual market situations will be analyzed during these exercises sessions.

**INTERNATIONAL FINANCE**

Financial operations performed in an environment of open and integrated markets entail a whole series of challenges linked to the macroeconomic and macrofinancial characteristics of the increasingly international environment. In today’s globalized world managers, investors and policy-makers need a deep understanding of this environment and its underlying mechanisms to design sound financial and strategic decision-making.

Specifically, the course will examine the following issues:

**The first part of the course focuses on foreign exchange (fx) rates:** fx rate fundamentals (definition, distinction between direct vs. cross, real vs. nominal and spot vs. forward fx rates), fx rate dynamics (how are markets organized, who is participating in these markets, how do we arbitrage on these markets?), inflation dynamics, international parity relationships as well as more structural and/or institutional parameters of fx markets (exchange rate regimes, roles and objectives of central banks, trade and capital flows, balance of payments, trade and capital flows restrictions, trading blocs, economic, monetary and/or fiscal policies, economic, fiscal and/or monetary unions, etc).

**The second part of the course concentrates on multinational financial management issues:** the identification, measurement, and management of exchange rates exposure; corporate financial decision making of an internationally oriented firm; performance-based evaluation of cross-border projects; as well as financing and investing in global markets.
While the course focuses on understanding fundamental theories behind these issues, it also examines empirical evidence and examples of firms' real world activities with the goal of preparing a student for a career dealing with financial decision making in an international environment.

The course is a combination of lecture style presentations and carefully documented discussions of real-life topics (based on case studies as well as on FT and The Economist readings).

**ADVANCED CORPORATE FINANCE AND MODELING**

The course's objective is twofold. First, the course provides students with a comprehensive understanding of the key capabilities CFOs need to acquire in order to create a successful finance function.

*How to perform diagnostics on company's operating performance? How to lever on the key value drivers and improve its performance? How to design value creating investment, financing or distribution strategies? How to generate external growth inside the company and structure a buyout (due diligence, buyout process and debt quasi equity financing)?*

The course also introduces students to equity research and fundamental analysis (sector, industry and company) with all its applications in portfolio management and company acquisitions (private deals).

**Especially, the course provides**

- students with modeling tools and advanced techniques for capital budgeting and firm and equity valuation;
- students with tools to conduct a fundamental analysis (due diligence) about one company;
- for students an opportunity to develop a thorough understanding of how financing as well as the firm’s dividend policy could affect the market value of the firm and distort investment decisions;
- students with tools to design sound corporate strategies at each point of the firm financing cycle (leveraged recapitalization, leveraged buyout, management buyout);
- students with financing tools (senior versus junior debt, bullet debt, mezzanine financing, debt push down mechanism, paid-in-kind and cash interests, club deals and syndication);
- students with modeling tools to structure a private equity deal.

The course is structured as follows:

**Introduction:** Financial analysis (ratio analysis, vertical and horizontal common-size statements) and review of firm valuation techniques and capital budgeting

**Part I:** Fundamental equity analysis and equity research: sector, industry, company due diligences, private equity and leveraged buyout. Alternatives to the Free Cash Flow to the Firm approach (Free cash flows to the Equity) and Residual Income Approach (with applications
Part II: Advanced techniques in Valuation and Capital Budgeting (NPV and sensitivity analysis, Monte Carlo simulation, decision trees, real options, ...).

Part III: Corporate decisions and firm value (capital structure and inefficiency costs, dividend policy and stock repurchases, corporate governance - agency theory and compensation package)

Conclusions drawn on the firm financing cycle (LBO, MBO, LR,...)

ESTATE AND FINANCIAL PLANNING

The course extends and deepens the core topics of Investments and Portfolio Management.

Course structure:

1. Profiling Investors and Managing Investor portfolios
   a. Notions of Investor Profile: The Rational and the Behavioral
   b. Management of Individual/Family Investor Portfolios
   c. Management of Institutional Investor Portfolios including pension plans and employee benefit funds

2. Asset Allocation and Financial Planning
   a. Steps in the Asset Allocation Process
   b. Tax & Successoral Planning Issues in Asset Allocation

3. Calibrating the risk-return framework
   a. Economic Analysis and Setting Capital Market Expectations
   b. The Black-Litterman Framework

4. Portfolio Strategies
   a. Equity Portfolio Management and Selection
   b. Fixed Income Portfolio Management and Selection
   c. Mutual funds, pooled funds and ETFs
   d. Overlay strategies (including currency overlays)
   e. Alternative Investments & Strategies: Hedge funds, Commodities, Real Estate, Private Equity, Distressed Securities, Closely-held companies and inactively traded securities and other Tangible Assets

5. Portfolio Construction and Monitoring
   a. Executing and Rebalancing Portfolios
   b. Risk Management and Compliance
   c. Performance Measurement and Reporting, including the presentation of GIPS
**Internship/Master Thesis**

In order to fulfil the requirements of their training at HEC Management School of the University of Liège, all students of a 120-credits master program are to perform an internship in a company and to write a master thesis in the second year of their studies.

As concerns the **practice-based thesis**, the internship and the master thesis are strongly interrelated and defined within the scope of the student’s chosen specialization. As concerns the **research thesis**, the internship and the master thesis are defined within the scope of the student’s chosen specialization but not necessarily interrelated.

**Students choose one of the following two options:**

![Diagram of options]

**2 options**
- **Internship** (10 ECTS)
- **Master thesis** (20 ECTS)
- **Practice-based thesis** (30 ECTS)

**10-week Internship**

Students do an internship in a company lasting over the first 10 weeks of the academic year (from mid-September to end-November).

The internship can be done within a private (either commercial, financial or industrial) or public enterprise, a semi public institution or an international organization. The internship is based in Belgium or abroad and is generally not remunerated.

Students choosing this internship option are bound to do a Research-Paper as an ESP (end-of-study project). Those choosing the internship as integrated within the Project-Paper are to refer to the last option detailed hereunder.

For more details: go to the «10-week internship» menu available on LOL@.

**Contact**

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Research-thesis

Students are expected to deliver a master thesis treating an original research problem to be defined within the scope of their chosen specialization. The master thesis presents rigorous scientific analysis and constitutes a contribution to the field of research. It demonstrates the theoretical knowledge that students acquired during their master studies and their ability to apply this knowledge critically in order to build and propose some original, creative and viable solutions to a complex management problem.

For more details: go to the «Research-Thesis» menu available on LOL@

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Practice-based thesis

Students writing a practice-based thesis analyze a complex management problem arising in a private or public organization located in Belgium or abroad. The studied problem must be original and related to their chosen specialization. The practice-based thesis makes use of rigorous scientific analysis in order to demonstrate the theoretical knowledge acquired by students during their training as well as their critical thinking and problem solving skills.
Students begin the practice-based thesis by working one day a week in the company during the first semester and deepen their analysis within the framework of a 10-week internship in the second semester of the second and final year of their studies.

For more details: go to the «Practice-based Thesis» menu available on LOL@.

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The Ethias Chair in Risk Management is managed by Laurent Bodson, Affiliate Professor of Finance. The Ethias Chair seeks to develop research and teaching methods in the field of financial risk management. In particular, several applied research projects and workshops have been organized in order to develop reporting of the management of the assets of an insurance company.

The Deloitte Chair in Financial Management and Corporate Valuation is held by Marie Lambert, PhD University of Luxembourg and University of Liège. This collaboration, which is over 10 years old, pools the expertise of Deloitte Belgique, Deloitte Luxembourg and HEC Liege with the view to make significant advances in the field of asset and private management, to better understand management processes and to influence the control processes of financial performance.
Contact & information

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http://progcours.ulg.ac.be/cocoon/programmes/G2UGES01_C.html#3494014