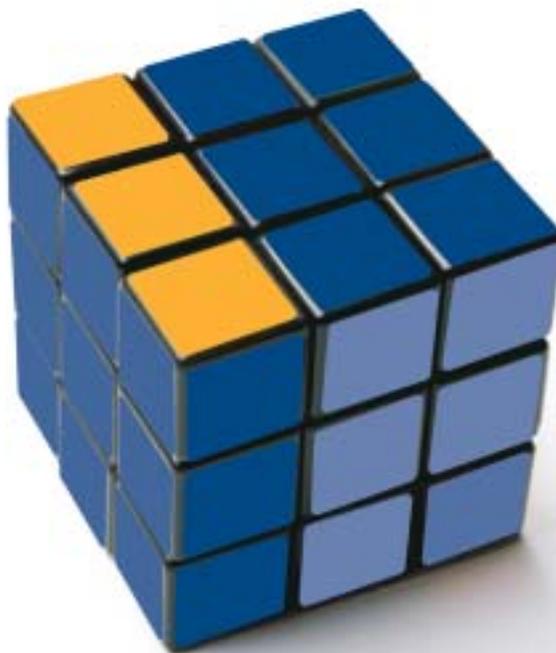


MSc in Pension Science



Make the right move

Specialist Masters Courses



Pension Science

The aims of the degree are to provide students with a comprehensive understanding of pension systems and their applicability in varying international contexts.

Upon completion of the programme graduates will:

- understand the different types of pension systems and how they have developed
- understand how these different pension systems are financed and the short and long term risks they face
- understand how these risks can be measured and managed
- have obtained certain key skills in IT and quantitative methods
- be able to provide high level advice to governments, institutions and companies in any country on pension matters.

Students

All students will be highly motivated, and will be graduates in economics, finance, insurance, accounting, law or other relevant background, who want to become pension specialists.

As the course focuses on the connection between theory and practice, students will gain an understanding of how to apply their knowledge in practical situations.

Graduates will typically gain employment in pensions-related consulting and policy fields in government departments, pension supervisory authorities, pension consultancies, pension schemes, pension funds, life companies, and the media.

Tuition fees

For up-to-date information on fees and scholarship please visit our website at www.cass.city.ac.uk/masters



Course Information

Pension Economics

Economics deals with the allocation of scarce resources between competing uses both contemporaneously and intertemporally, and with the incentives that influence this allocation. Pension economics considers the way in which individuals, companies and the state provide for pensions; and with the consequences of accumulating pension assets for the wider macroeconomy. While not attempting to train students as professional economists, this module does aim to provide a secure grounding in the theory and practice of economics insofar as it deals with pension matters.

Learning Outcomes

- Understand the key types of pension schemes
- Understand the role of pensions in maximising individual lifetime welfare
- Understand the role of pensions in individual savings and retirement decisions
- Understand the role and consequences of pension plans from the company's viewpoint
- Understand the role of pensions in promoting aggregate savings
- Understanding the social welfare implications of pensions

Quantitative Methods for Pensions

The aim of this course is to provide students with a toolkit of quantitative techniques required by a pension scientist to solve problems in pension economics and pension finance.

Learning Outcomes

- Understand the basics of the following mathematical techniques: Financial maths (Compounding, Discounting, Rates of return), Matrix algebra (especially inverses and simultaneous linear equations), Differentiation, Integration, Taylor's approximations and linearization, Static constrained optimisation, Dynamic programming, Differential equations and phase diagrams
- Understand the basics of the following statistical techniques: Descriptive statistics, Distributions (Binomial, Normal, t, Chi-square, F), Multiple regression

Pension Accounting

Accounting is the language of the financial world, and plays a significant role in the analysis and management of pension fund assets and liabilities, at both organisational and national levels. While not attempting to train future pension fund managers as accountants, this module does aim to provide a secure grounding in the practice and understanding of accounting, the characteristics and limitations of accounting data, and the role of accounting in the broader financial environment, including its role in financial analysis and valuation.

Learning Outcomes

- Have the technical knowledge to read, understand and analyse financial statements
- Understand the impact of institutional pronouncements upon accounting numbers
- Understand the role of accounting as an input to corporate valuation
- Understand the role of accounting in the valuation of pension fund assets and liabilities
- Understand the pension aspects of national income accounts

Comparative Pension Systems and Regulation

This course has a twofold aim. It will acquaint students with the variety of different pension systems and the public-private mix within these across Europe, North America, Australasia, South America and Japan, and will also make passing reference to the developing nations of south east Asia and Africa. It will also explain the role of international institutions in pension policy, with particular reference to the growing role of the European Union and Commission, but also looking at the World Bank and the International Labour Office as advisors and standard setters.

Learning Outcomes

- The nature of pensions systems, and the principles underlying these, in a wide variety of countries
- The role of the European Commission in regulating pensions and the nature of its powers
- The role international organisations, particularly the World Bank and the International Labour Office
- The lessons that different countries can learn from one another in making pensions policy

Pension Finance

Finance is a branch of economics dealing with the financial implications of economic decision making. Pension finance considers the financial aspects of pension provision. While not attempting to train students as finance professionals, this module does aim to provide a firm grounding in the theory and practice of finance insofar as it deals with pension matters.

Learning Outcomes

- Understand the allocation of wealth to different asset classes
- Understand the financial aspects of defined contribution pension plans
- Understand the financial aspects of defined benefit pension plans
- Understand the valuation of pension liabilities and role of strategic asset allocation in delivering pension obligations
- Understand the risk management of pension funds
- Understand pension fund investment performance and attribution

Actuarial Principles for Pensions

This module aims to enable students to gain insight into the work which actuaries carry out in relation to the design and operation of pension schemes.

Learning Outcomes

- The benefits typically provided by defined benefit and defined contribution pension schemes
- The issues surrounding unfunded social security pension schemes
- The work carried out by the actuary in performing a valuation of a pension scheme
- The way in which the investment strategy for a defined benefit scheme might be devised
- The regulatory issues surrounding pension schemes

Pension Law

Pensions are a major financial asset for many millions of people; curiously it is only in recent years that the law has begun to recognise the importance of the need for managing the balance of interests of employees, the self-employed, employers and providers – and the interests of the government – in relation to public and private pensions. In the UK (and the US) in particular the resultant substantial increase in law and regulation has become an issue in itself.

This course explores the general principles of law and regulation as it applies to pension rights and expectations and in particular considers the dilemmas of lawmakers as they attempt to draw the balance between protection of rights and expectations and the need to allow free market principles to operate.

Learning Outcomes

- The distinction between state, personal and workplace pension rights; trustee systems
- The balance between regulation and compliance and scheme expansion: the regulatory framework: dispute management, reporting, the regulator, pensions protection
- Pensions and investments: investment controls, corporate governance, ethical and social considerations
- Pensions and funding guarantees: funding, underfunding, surpluses and deficits, unfunded arrangements
- Pensions in corporate transactions: mergers and acquisitions, reconstructions, corporate failures

Social Policy and Ageing Populations

This course provides a context for the contemporary interest, both by academics and policy makers in pensions. It will be look at issues other than pensions that ageing societies bring with them, in particular those related to long-term care of the frail elderly and workforce ageing. It will emphasise the multi-faceted nature of the ageing challenge and responses to it.

Learning Outcomes

- The extent of demographic ageing, its causes and its expected direction and differences across time and across different geographical areas
- The relative capabilities and requirements of different age groups and the extent to which they contribute to society and the economy
- Interrelationships between different aspects of societal ageing and the responses that are proposed with respect to these separate aspects
- The consequences of proposed reforms in terms of their implications for the well being of older people and of other groups in society



For an application form or further information please contact us (www.cass.city.ac.uk)

Please complete the following and return this to:

Hannah Anders
Cass Business School
106 Bunhill Row
London EC1Y 8TZ
Tel direct: 020 7040 8468

Or email: h.anders@city.ac.uk

First name: _____ Last name: _____

Address: _____

Telephone: _____ Email: _____

I would like more information on Pension Science



Pension Science Timetable

Term 1:

Induction: Quantitative Methods & IT Skills

Pension Economics

Quantitative Methods for Pensions

Pension Accounting

Comparative Pension Systems & Regulation

Term 2:

Pension Finance

Actuarial Principles for Pensions

Pension Law

Social Policy and Ageing Populations

Term 3:

Compulsory: Research Project Management

Second half of Term 3 and summer to end September:

Pensions dissertation

In term 3 you will have to choose 4 electives amongst the following list:*

Corporate Governance

Consulting Skills

Financial Derivatives

Financial Risk Management

Life Insurance And Pensions Management

Behavioural Psychology (Judgment & Decision Making)

Behavioural Finance

Marketing of Financial Services

Regulation of Financial Services

Comparative Pension Law

Insurance Law & Regulation

Private Equity Investment

Quantitative Asset Management

Longevity Risk in Pension Products

Financial Extreme Value Statistics

Pensions Tax Issues

Personal Finance

* Not all electives will be offered every year



"The Department for Work and Pensions is enthusiastic about the development of this qualification, and would welcome applications from individuals holding the prospective Pension Science MSc. The combination of economics, finance and actuarial science on the one hand, with an understanding of law and regulation on the other, would be very well suited to the analytical and policy needs of the Department."

Robert Laslett, Chief Pensions Economist from the Department of Work and Pensions



Pension Science

The World's first Masters with a pension focus. Pension design and regulation are generally accepted to be complex issues for all countries. What is clearly needed is a well-trained group of professionals capable of providing appropriate and sustainable pension solutions.

Cass Business School, City University, London

MSc in Pension Science

The reputed Cass Business School is introducing a new MSc in Pension Science, the first of its kind.

This unique degree will offer a 12 month multidisciplinary programme covering core courses in pension economics, pension finance, comparative pension systems, social policy and ageing, accounting, law and regulation, and relevant quantitative methods.

This Pension Science programme will:

- provide you with a high quality of education
- give you an understanding of the key issues confronted by pension scientists in varying international contexts
- provide you with a thorough understanding of;
 - pension economics
 - pension finance
 - actuarial principles
 - comparative pensions systems
 - the social policy context of pensions
 - pensions accounting
 - pension law and regulation
 - relevant quantitative methods.



Cass Business School

The new name for City University Business School is Sir John Cass Business School, City of London or Cass Business School for short.

Sir John Cass's Foundation

The Foundation has supported education in London since Sir John Cass set up a school in Aldgate in 1710. He was born in the City of London in 1661 and served as MP for City. He was knighted in 1713.

In May 2001, the Foundation made a generous donation to the Business School's new building project and continues to provide on-going support to the Business School.

World-class business school

Cass Business School provides exceptionally high-quality education and is one of the top five of Business Schools in the UK and one of the top ten schools in Europe.

All the courses have a strong practical focus and have been developed in direct response to the needs of employers. Many of the courses draw on the first-hand experience of leading practitioners and the taught elements of the courses include major practitioner input. This is extremely important as it ensures that the courses are professionally relevant and that they provide a synthesis of academic rigour and practitioner insights.

The new School building is an inspirational place to study and offers a modern, flexible space in which both people and ideas can flow without hindrance. The building enables enhanced business and social interaction between students, staff, business people, from the voluntary and beyond profit sectors and visitors from elsewhere in the UK and worldwide.

Cass has a world-class faculty and research reputation and meets the needs of its students and their organisations, as well as endeavouring to achieve new areas of educational need.

The Business School offers specialist Masters courses in the following areas: International Accounting, Actuarial Science, Banking, Energy, Charity, Entrepreneurship, Finance, Insurance and Risk Management, Investment Management, Logistics, Management, Mathematical Trading, Property Valuation, Quantitative Finance, Real Estate Investment, Shipping.

Further information

Further information about the University, its courses and facilities can be found in the postgraduate prospectus, which is available by calling: **+44 (0)20 7040 8014** or e-mail: **registry@city.ac.uk** and also online at: **www.city.ac.uk/city**

How to find the business school

By Underground The nearest underground stations are Moorgate and Old Street on the Northern Line (City branch); Barbican and Moorgate on the Metropolitan and Circle Lines; and Liverpool Street on the Central Line.

The Business School is between five and ten minutes' walk from the nearest underground station.

Pedestrians Cass Business School is located on Bunhill Row, which is situated off Chiswell Street.

Bus Bus routes – 4, 8, 21, 25, 43, 55, 56, 76, 100, 133, 141, 153, 172, 214, 243, 271, 501 and 521.

Car Car parking for Bunhill Row is either in the Barbican Centre's car parks or in the National Car Parks in Aldersgate Street, London Wall and Finsbury Square.

