Quantitative Applications in Finance (FIN236)

in 2010

This subject explores the essential quantitative skills required in today's financial markets. It covers key techniques and concepts applicable to the financial services industry, including data analysis, correlation, regression, risk and return factor analysis, portfolio construction and optimisation, measurement and factor attribution.

Learning outcomes

At the completion of this subject students should be able to:

- Analyse and interpret data.
- Apply relevant quantitative techniques and concepts.
- Develop practical, analytical problem solving techniques.
- Research and critique current issues in applied finance and investment.
- Recognise the limitations, pitfalls and ethical issues involved in quantitative analysis.

Subject content

- Fundamentals of quantitative applications
- Tools of the trade
- Correlation, covariance and causation
- Regression
- Analysing risk
- Forecasting returns
- Optimisation and portfolio construction
- Bringing it all together

Assessment

Assessment Type	Assessed	Weighting
Assignment	Week 6	50%
Examination	Week 12	50%

Delivery method

Kaplan's delivery is primarily through distance education, supported by comprehensive print and online resources. Students will have access to subject notes, pre-recorded lectures, an online subject room, practitioner led Discussion Forums, online exercises, library and further resources.

Workload

This subject requires approximately 120 hours of student effort (11-12 hours per week). This includes time spent on activities such as: Reading and review of course notes and other reading material, attending to or listening to live or pre-recorded lectures, participating in e-learning activities, and assessment preparation and review.

Pre-requisites

Students enrolling in a Masters level elective subject are assumed to have the pre-requisite knowledge in the four core subjects (FIN111, FIN112, FIN113 and FIN114). This requirement can be waived where students are studying one or more core subjects concurrently with an elective, or they are studying single subjects and are not enrolled for the Masters, Graduate Diploma or Graduate Certificate courses. Students enrolling into an elective subject without having completed all core subjects should ensure that they have, or have access to, the pre-requisite or assumed knowledge required for successful completion of the elective subject. For further information on pre-requisite study contact a student adviser.

In this subject, various mathematical and statistical methods are used. Students in this subject are required to have a basic knowledge of: statistical concepts and tests, differential calculus and matrix algebra. The subject requires students to be able to use mathematics in finance and to apply Excel to solving problems and is designed to progress students fairly quickly from basics to the advanced methods and techniques appropriate to a Master's level qualification. A pre-test is available (FIN236.PT.pdf and FIN236.PT.xls) to assist you to determine whether you have the pre-requisite knowledge for this subject.

Reading list

The following list of references provides the student with key and additional reading material.

Prescribed text
There are no prescribed texts for this subject.

Additional readings:

Chiang, AC, & Wainwright K 2005, *Fundamental Methods of Mathematical Economics*, 4th edn., McGraw-Hill

Curwin, J, & Slater R, 2007, Quantitative *Methods for Business Decisions*, 6th edn., Harcourt College

DiNardo, J, & Johnston, J 1996, *Econometric Methods*, 4th edn., McGraw-Hill,

Gujarati, DN, 2009, *Basic Econometrics*, 5th ed., McGraw-Hill

Hull, JC 2009, *Options, Futures and Other Derivatives*, 7th edn., Prentice Hall International

Mann, PS 2009, Introductory statistics, 7th edn., John Wiley

Spiegel, MR, & Stephens, LJ, 2009 *Schaum's Outline of the theory and problems of statistics*, 4th edn., McGraw-Hill

Ryan, M 2003, *Calculus for dummies*, Wiley Publishing Inc., Hoboken, New Jersey

Fama, EF & French, KR 1992, *The cross-section of expected stock returns*, The Journal of Finance, vol. 47, no. 2

Shefrin, H & Statman, M 1995, Making *sense of beta, size, and book-to-market,* The Journal of Portfolio Management, vol. 21, no. 2

Brinson et al 1995, *Determinants of Portfolio Performance*, Financial Analysts Journal; Jan/Feb95, Vol. 51 Issue 1