Course Overview
EC3114 is designed to provide insights into the nature of the financial markets and how they are used by investors and corporations. The course lays emphasis on the equity market and mainly deals with issues in optimal asset allocation, asset pricing theory, market efficiency and market microstructure. Topics that are covered are mean-variance analysis, the Capital Asset Pricing Model (CAPM), as well as factor portfolios and Arbitrage Pricing Theory (APT) and the price formation process.

Learning Outcomes
Upon completion of the course students should
- understand and be able to describe the role of the most fundamental markets and institutions that constitute a modern financial system;
- have a firm grasp of the important tools commonly used in investment analysis;
- demonstrate understanding of various theories of risk-factor pricing, such as the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT);
- critically evaluate the theory of, and empirical evidence on efficient markets;
- demonstrate knowledge of the price formation process in financial markets;

Course Delivery
The course will comprise a two-hour lecture and a one-hour seminar each week. The detailed learning outcomes and reading for each week are outlined below. Additionally, lecture notes will be made available on Moodle. Seminars will be based predominantly upon problem sets that are usually distributed in the previous week’s lecture or made available online on Moodle. Poor attendance in seminars could result in your being given an ‘Attendance Fail’ (AF) for the entire course and even cost you the academic year.

The lecturer and seminar tutors are available to students for consultation during advertised office hours or by appointment. As this is an intensive course, for your part, you are advised to devote an additional six (6) hours per week of study in this course, including independent study on online platforms.

Assessment
During the exam term in the summer there will be a two-hour unseen examination, which contributes 90% to the final mark. The exam will test students’ knowledge and understanding of the material covered in the course. These include their ability to manipulate diagrammatic and algebraic versions of the models treated in the course, their ability to apply models to real economic situations and their ability to critically appraise models and their application. The final grade is
based on further coursework during term time. This coursework takes the form of an extended essay/project/case study which may require data analysis and contributes toward 10% of the final mark.

Formative assessment will consist of one midterm test. The dates for these are laid out in the current Student Handbook. Standardised feedback on these pieces of work will be provided. _This piece of work is not assessed and therefore does not carry a formal weight. However you must complete it in all respects. Failure to do so would lead to the issue of a Formal Warning by the Department, which can ultimately lead to you failing the entire course or the termination of your registration._

**Reading**

The primary text for the course is;

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It will provide most of the required reading. Other standard texts that you might wish to refer to are listed below. Further required reading for selected topics, and additional material in the form of lecture notes will be made available whenever necessary on Moodle. Students should also attempt to relate the material dealt within the course to actual events in the financial markets, as covered in the business sections of the broadsheets (e.g., Financial Times).

**Supplementary textbooks:**
- [LP] H. Levy and T. Post, _Investments_, FT Prentice Hall.

Students who prefer a more technical exposition of the material covered may consider the following alternative:

**Supplementary reading:**
The reading list below includes a number of textbook chapters and journal articles that complement the required reading and help deepen your understanding of the topic. Contributions marked with an asterisk (*) are available online via JSTOR at [http://www.jstor.org/browse](http://www.jstor.org/browse) - for more information please ask the library staff.

**IMPORTANT NOTE: Financial Market Participants and Institutions**

Many textbooks contain fairly comprehensive descriptions of participants and institutions in financial markets. Some students will have covered a number of these issues in EC2212 (Financial Markets and Institutions). Students who have not done so will not suffer any disadvantage regarding the course material, as all the fundamental concepts will be introduced from scratch. However, all students taking the course are strongly encouraged to ensure (through self-study) that they are familiar with the roles and functions of major financial market participants, financial instruments and the arrangements and regulations that constitute a modern financial system. For example, students should have a notion of the main features that distinguish market participants
(or the services provided by them) from each other. For textbook treatments of institutional issues see the supplementary reading for Lecture 1. These will not be covered in lectures, and students are required to familiarise themselves with the materials during the first week of lectures.

(Tentative) Schedule

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<tr>
<th>Lecture Title</th>
<th>Learning Outcomes</th>
<th>Reading</th>
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| Lecture 1: Introduction – Overview of Financial Markets/Instruments | This lecture will introduce the main topics to be covered in the course and provide an introductory overview of financial markets and financial instruments used by market participants. | Required reading: [BKM] Part 1 (Chapters 1-4)  
Supplementary reading: [GT] Chapter 1, [EG] Chapter 2, [LP] Part 1  
Blake, D., 2000, Financial Market Analysis (2nd ed.), Wiley, Chapter 1, for a UK perspective |
| Lecture 2: Basic Tools for Portfolio Analysis | In addition to learning the material covered in the reading and the lecture, students should be able to  
• be familiar with the concept of risk aversion and understand how investors’ preferences over risky portfolios may be expressed in terms of scoring function (a utility function);  
• demonstrate ability in using statistical tools such as mean, variance, and covariance for simple portfolio analysis; | Required reading: [BKM] Chapters 5 and 6  
Supplementary reading: [GT] Chapter 4, [LP] Chapters 6 and 7 |
| Lectures 3-4: Mean Variance Analysis | In addition to learning the material covered in the reading and the lecture, students should be able to  
• understand how portfolio variance can be reduced through diversification and the limits of diversification;  
• evaluate the trade-off between risk and return, both intuitively and algebraically;  
• demonstrate how the efficient frontier of risky assets is obtained and how to locate ‘key’ portfolios such as the global minimum-variance portfolio and the tangency portfolio in the mean/standard deviation diagram;  
• construct a mean-variance efficient portfolio. | Required reading: [BKM] Chapters 6 and 7  
Supplementary reading: [GT] Chapter 5, [LP] Chapters 8 and 9  
The foundations of modern portfolio theory can be found in:  
| Lecture 5: The Capital Asset Pricing Model (CAPM) | In addition to learning the material covered in the reading and the lecture, students should be able to:  
- understand the difference between mean-variance analysis and the CAPM, in particular regarding the assumptions made in the latter;  
- be able to solve for the required return of common stock using the capital asset pricing model (CAPM);  
- have the ability to interpret the meaning of a stock’s beta;  
- be able to appraise critically the CAPM. | Required reading: [BKM] Chapter 9  
Supplementary reading: [GT] Chapter 5, [LP] Chapter 10  
| Lecture 6: Factor Models and Arbitrage Pricing Theory (APT) | In addition to learning the material covered in the reading and the lecture, students should be able to:  
- distinguish between market-related and non-market-related, as well common-factor and firm-specific components in decomposing the variance of an asset’s return;  
- demonstrate how to exploit a profitable arbitrage opportunity;  
- design a pure-factor (and other hedging) portfolios when given the factor betas for a set of assets;  
- analyse how the APT exploits the postulate of no-arbitrage to reach its conclusions. | Required reading: [BKM] Chapters 8 and 10  
Supplementary reading: [GT] Chapter 6, [LP] Chapter 11 |
| Lecture 7: Empirical Evidence on Asset Pricing Theories and Market Efficiency | In addition to learning the material covered in the reading and the lecture, students should be able to:  
- critically evaluate main empirical evidence on the CAPM and market efficiency;  
- analyse the three versions of the efficient markets hypothesis, and their implications for financial markets;  
- critically assess trading strategies based on technical analysis or fundamental analysis. | Required reading: [BKM] Chapters 11 and 13  
Supplementary reading: [GT] Chapters 5 and 6, [LP] Chapter 12  
| Lecture 8: An overview of Behavioral Finance | Required reading: [BKM] Chapters 12 and 13  
A. Shleifer, “Are markets efficient?”, WJS, December 2000 (available on moodle).  
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In addition to learning the material covered in the reading and the lecture, students should  
• understand the limits to EMH and in particular to arbitrage;  
• be able to identify mechanisms, rational and/or behavioural, that can account for several anomalies;  
| In addition to learning the material covered in the reading and the lecture, students should  
• demonstrate ability in analysing a limit order book;  
• understand how adverse selection gives rise to a bid-ask spread;  