Advanced Diploma in Finance (531) – Finance Theory

Prerequisites: Knowledge of Finance.	**Corequisites:** A pass or higher in Diploma in Finance or equivalence.
Aim: The course is a rigorous introduction to the modern theory of finance. As such, it involves problem solving that draws heavily on the related disciplines of economics, mathematics, probability and statistics. This course focuses on the foundations of the dominant paradigms of modern finance theory: choice under uncertainty, mean-variance investment criteria and the theory of arbitrage. Topics covered include market efficiency, asset pricing, portfolio selection, utility theory, arbitrage and pricing, equilibrium models and complete markets, inter-temporal models, continuous time finance, contingent claim pricing, and the term structure of interest rates. The goal of this course is to focus on the development of the ideas behind the needed formulas and results, so that candidates will be able to think independently about when a formula or result will apply to a given situation. By understanding how a mathematical result works, candidates will be less likely to misapply a formula or result, and more likely to be able to pursue and develop a needed modification in a situation where the standard formula or result does not apply.	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: The course requires a combination of lectures, demonstrations and discussions.	

Intended Learning Outcomes:	**Assessment Criteria:**	
1 Define the subareas of finance and their roles in corporate financial management.	1.1	Be able to show why and how finance is at the heart of sound business decisions.
	1.2	Compare and contrast the advantages and disadvantages of the most common business organizational forms in the United Kingdom.
	1.3	Differentiate between financial managers' appropriate and inappropriate goals.
	1.4	Be able to incorporate ethics into financial management.
	1.5	Describe the complex and necessary relationships among firms, financial institutions, and financial markets.
2 Analyse the major financial statements that firms must prepare and provide to the public	2.1	Differentiate between book (or accounting) value and market value
	2.2	Explain how taxes influence corporate managers' and investors' decisions
	2.3	Differentiate between accounting income and cash flows
	2.4	Demonstrate how to use a firm's financial statements to calculate its cash flows
	2.5	Describe cautions that should be taken when examining financial statements
3 Understand how to interpret financial statements	3.1	Be able to calculate and interpret major liquidity ratios
	3.2	Be able to calculate and interpret major asset management ratios
	3.3	Be able to calculate and interpret major

			debt ratios
		3.4	Be able to calculate and interpret major profitability ratios
		3.5	Be able to calculate and interpret major market value ratios
		3.6	Describe how various ratios relate to one another
		3.7	Discuss the differences between time series and cross-sectional ratio analysis and decide which is most appropriate given an analytical situation
		3.8	Explain cautions that should be taken when examining financial ratios and financial information in general
4	Understand how to analyse single cash flows	4.1	Be able to create a cash flow time line.
		4.2	Be able to compute the future value of money.
		4.3	Discuss how the power of compound interest increases wealth.
		4.4	Be able to calculate the present value of a payment made in the future.
		4.5	Be able to compute the rate of return realized on selling an investment.
		4.6	Be able to calculate the number of years needed to grow an investment to a specific amount of money.
5	Understand how to analyse annuity cash flows	5.1	Be able to compute the future value of frequent, level cash flows.
		5.2	Be able to discount multiple cash flows to the present.
		5.3	Be able to compute the present value of an annuity.
		5.4	Distinguish and adjust values for beginning-of-period annuity payments as opposed to end-of-period annuity payments.
		5.5	Explain the impact of compound frequency and the difference between the annual percentage rate and the effective annual rate.
		5.6	Be able to compute the interest rate of annuity payments.
		5.7	Be able to compute payments and amortization schedules for car and mortgage loans.
		5.8	Be able to calculate the number of payments on a loan.
6	Describe bond characteristics	6.1	Identify various bond issuers and their motivation for issuing debt
		6.2	Be able to interpret bond quotes
		6.3	Be able to compute bond prices using present value concepts
		6.4	Explain the relationship between bond prices and interest rates
		6.5	Be able to compute bond yields
		6.6	Be able to assess bond market performance
7	Understand the rights and returns that come with common stock ownership.	7.1	Describe how stock exchanges function.
		7.2	Describe the terminology of stock

			trading
		7.3	Be able to compute stock values using dividend discount and constant-growth models.
		7.4	Be able to calculate the stock value of a variable growth rate company.
		7.5	Be able to assess relative stock values using the P/E ratio model.
8	Identify characteristics of risk and return	8.1	Be able to find information about the historical returns and volatility for the stock, bond, and cash markets.
		8.2	Identify how to measure and evaluate the total risk of an investment using several methods.
		8.3	Demonstrate the risk / return relationship and its implications.
		8.4	Be able to plan investments that take advantage of diversification and its impact on total risk.
		8.5	Be able to find efficient and optimal portfolios.
		8.6	Be able to compute a portfolio's return.
9	Understand how to estimate risk and return	9.1	Be able to compute forward-looking expected return and risk.
		9.2	Be able to apply the Capital Asset Pricing Model (CAPM).
		9.3	Be able to calculate and apply beta, a measure of market risk.
		9.4	Differentiate among the different levels of market efficiency and their implications.
		9.5	Calculate and explain investors' required return and risk.
		9.6	Be able to use the constant growth rate model to compute required return.
10	Grasp the basic intuition behind calculating the cost of capital and its relationship to the investor's required return.	10.1	Be able to use the weighted-average cost of capital (WACC) formula to calculate a project's cost of capital.
		10.2	Define the firm's choices in estimating the appropriate capital component costs of equity, preferred stock, and debt.
		10.3	Be able to calculate and justify appropriate weights used for WACC projections.
		10.4	Differentiate between the objective and subjective approaches to computing a divisional cost of capital.
		10.5	Be able to denote the impact that flotation costs have on capital budgeting decisions and adjust the WACC to reflect flotation costs.
11	Understand the logic underlying capital budgeting decision techniques.	11.1	Be able to calculate and use the net present value (NPV) method for evaluating capital investment opportunities.
		11.2	Be able to calculate and use the payback (PB) and discounted payback (DPB) methods for valuing capital investment opportunities.

	11.3	Be able to calculate and use the internal rate of return (IRR) and the modified internal rate of return (MIRR) methods for evaluating capital investment opportunities; understand which problems associated with IRR that MIRR can and cannot correct.
	11.4	Be able to use NPV profiles to reconcile sources of conflict between NPV and IRR methods.
	11.5	Be able to compute and use the profitability indexes (PI).
12 Understand how to assess long-term debt, equity, and capital structure	12.1	Differentiate between active and passive changes to capital structure.
	12.2	Demonstrate why finance professionals refer to debt as "leverage" in firms' capital structures.
	12.3	Describe how optimal capital structure changes when we relax the assumption of no corporate taxation—at which point the optimal capital structure becomes one in which "The More Debt, the Better" applies.
	12.4	Demonstrate how individual shareholders can mimic or reverse firm capital structure changes by borrowing and lending on their own account.
	12.5	Calculate the EBIT and EPS levels at which shareholders will become indifferent about the choice between two alternative capital structures.
	12.6	Describe how the firm's choice of optimal capital structure changes if we allow for the possibility of bankruptcy.
13 Identify general factors that affect a firm's payout policies.	13.1	Discuss how investors' preferences regarding differential tax rates and differential timing can guide the firm's policies on the distribution of dividends and capital gains.
	13.2	Define the information effect and the clientele effect and explain corporate control issues that affect investors' preferences for dividends versus capital gains.
	13.3	Analyse cash dividend payment procedures and explain the effect that these procedures have on the stock price path.
	13.4	Differentiate between a stock dividend's impact on the firm's books and a stock split's impact on the books.
14 Understand the issuing of capital and the investment banking process	14.1	Evaluate different methods for small firms to get funding
	14.2	Describe venture capital is and the role it plays in encouraging entrepreneurship
	14.3	Differentiate among sources of capital funding for public firms
	14.4	Identify the process by which securities are underwritten

15 Understand how to address working capital policies and manage short-term assets and liabilities	15.1	Be able to set overall objectives of a good working capital policy.
	15.2	Discuss how net working capital serves the firm.
	15.3	Be able to calculate and use the firm's operating cycle and cash cycle to discover how much funding for current assets the firm has to find.
	15.4	Be able to compare the flexible and restrictive approaches to financing current assets.
	15.5	Differentiate among sources of short-term financing available for funding current assets.
	15.6	Be able to justify the firm's need to hold cash.
	15.7	Be able to use the Baumol and Miller-Orr models for determining cash policy.
	15.8	Investigate why firms have excess cash and identify their choices about what to do with it.
	15.9	Be able to draw the connection between the firm's credit terms and collection policy and the amount of capital the firm has invested in accounts receivable.

Recommended Learning Resources: Finance Theory

Text Books	• Probability Theory in Finance: A Mathematical Guide to the Black-Scholes Formula by Sean Dineen and Sean Dineen. ISBN-10: 0821839519 • Essentials of Stochastic Finance: Facts, Models, Theory (Advanced Series on Statistical Science & Applied Probability). ISBN-10: 9810236050 • Intermediate Financial Theory (Academic Press Advanced Finance) by John B. Donaldson Jean-Pierre Danthine.
Study Manuals	BCE produced study packs
CD ROM	Power-point slides
Software	None