BUS 640
Quantitative and Analytical Fundamentals for Finance
Storer Auditorium, School of Business

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Objective: This four-credit course provides graduate students with an intensive review of the fundamentals of financial accounting and finance, as well as microeconomic concepts and quantitative skills and background needed as appropriate foundation to pursue the Master of Science in Finance degree or other master degrees that entail taking elective courses in finance. Specific learning objectives are for students to understand:

- Statistical concepts and metrics important for finance
- Mathematics skills important for finance
- Basic microeconomic theory informing the financial perspective of the firm
- Basic macroeconomic concepts
- How financial information is reported in financial statements and basic tools used to interpret them
- The principles underlying finance in a modern economy and ethical considerations
- Time value of money and how it applies to investing, borrowing, and valuation
- The basic securities public firms use to raise capital, how such securities are valued, sold, and traded, and the role of intermediaries between firms and investors
- Capital market efficiency and the role of frictions and arbitrage activity
- The interest rate environment and the term structure of interest rates
- The concept of interest rate risk and how it is measured and managed through duration analysis and immunization
- How risk and return are measured for both individual assets and portfolios
- Diversification and the concepts of diversifiable versus non-diversifiable risk
- Asset pricing models and their applications
- The concept of capital structure and operating vs. financial leverage
- The capital budgeting process, including estimating incremental cash flows, the cost of capital, and how time value money concepts are applied to inform capital budgeting decisions
- The basics of foreign exchange and the global nature of investing
- The basics of financial derivatives, with an emphasis on how they are used to speculate or hedge

Calculator: Prior to the course, students are expected to obtain a financial calculator and familiarize themselves with using the calculator to perform arithmetic, use parentheses, raise a number to an exponent (e.g., $4^3 = 64$), take a reciprocal, change the sign, change the number of displayed decimal places, and use memory keys. Use of the financial keys (PV, PMT, etc.) will be covered in the class. Recommended models are the Hewlett Packard 10bII+ and the Texas Instruments BA II Plus (other good, but more expensive models include the Texas Instruments BA II Plus Professional and the Hewlett Packard 17BII+). Yet another alternative, the Hewlett Packard 12C, is traditionally considered the calculator of choice among “finance geeks” but be aware that it yields an imprecise answer on one particular type of financial calculation. Students considering taking CFA exams should be aware that the CFA Institute only allows test takers to use the Texas Instruments BAII Plus (or BA Plus Professional) or the Hewlett Packard 12C (or 12C Platinum, 12C Platinum 25th anniversary edition, 12C 30th anniversary edition, or 12C Prestige).

Classroom demeanor and electronics policy: Students are expected to behave in a professional manner. The use of cell phones, PDAs, and laptops is not allowed. Students may take notes on a tablet with instructor permission but are expected to refrain from other activities on their device that could distract themselves or others.

Outside text/material: *Corporate Finance, 4th* edition, by Berk and DeMarzo

ISBN13-digit = 978-0134083278

There is an electronic rental of the text but many find it cumbersome to use. Please do *not* purchase the international version of this text, as assignments will not align). Also make sure you do not buy a different book by the same authors that has “The Core” in the front or a book by the same authors titled “Fundamentals of Corporate Finance.”

Financial Statements: A Step-by-Step Guide to Understanding and Creating Financial Reports, 2nd edition (2009), by Thomas Ittelson, Career Press.

<u>Make sure you obtain the accounting guide by August 4 (you should have already had it for your summer prep work) and the finance text by August 5.</u>

Other materials: Class notes will be distributed either in class or on the course website.

Participation: Class participation is 10% of your grade. Having poor attendance, being inattentive, chit chatting, arriving late or leaving early, and otherwise detracting from the learning environment will be penalized. <u>The end of each class day typically provides time to work homework in a collaborative fashion with your classmates and with input from the professor, but it is still part of class and affects your participation.</u>

Grades: Grades will be curved in accordance with school and department policies. The following inputs and weights will be used to compute your overall score: Participation 10%, Homework assignments 30%, Quizzes 60%.

Homework: There is typically a homework assignment associated with each day, and they are due at the start of the next class day. You are encouraged to work with classmates, but to receive credit <u>you must hand in your own assignment written in your own handwriting (no photocopying and no typing allowed).</u> Make sure your work is neat and legible.

Quizzes: On the second and all later class days, class will begin with a 30-45 minute quiz (closed-book, closed-notes) on the prior day’s material. The last quiz (on statistics) will be a take-home quiz due the following Monday. Reviewing class notes and working homework provide the best preparation. Make-up policy: Missed quizzes will count as zeros and only one make-up test per student is allowed unless the missed quiz is due to a verifiable and serious medical emergency.

Attendance: Full attendance is absolutely expected, and missing class will adversely affect your participation grade. A student missing more than 10 hours of class time is subject to withdrawal from the program, pending review jointly by the program director and Vice Dean of Graduate Business Programs.

Extra credit: Extra credit is not given. Make sure you seek help early as needed!

Schedule and topics: Topical content for each day is approximate and subject to adjustment depending on a variety of factors. Generally, mornings are from 8:30 am until 12:00 noon (except **please note the different time schedule for August 16)**, and begin with a 30-45 minute quiz. Afternoon class is generally from 1:00 to 5:00 pm, with the last 1-2 hours reserved as in-class, instructor-aided group time to begin on the day's homework assignment.

Depending on our progress day by day, in addition to the schedule below we will discuss financial derivatives.

Class Day, date, and time	At start of class (8:30)	Topical content for the day
July 31 (Mon), 1-4:00 pm	(Note 1:00 pm start time this day)	*1:00-4:00. Check-in, orientation, and administrative activities in Rosa de la Cruz Study Center (ground floor, School of Business) – business casual attire.*
Class 1, August 1 (Tue), 8:30-5		Math skills review: Notation (equality and inequality, absolute value, fractions, ratios, percentages, series, summations, products), Weighted average, Exponents, Functions (including exponential and logarithmic), Lines, Graphs, Algebra and solving systems of equations, Derivatives, Graphs, Optimization.
Class 2, August 2 (Wed), 8:30-5	HW 1 due, Quiz (covering Class 1).	Accounting module 1: Recognize the information conveyed in each of the four basic financial statements and the way that it is used by different decision makers (investors, creditors, & managers). Define the objective of financial reporting, the elements of the balance sheet, and the related key accounting assumptions and principles. Understand accrual vs. cash accounting. Analyze the adjustments necessary at the end of the period to update balance sheet and income statement accounts. Identify the steps in the accounting communication process, including the issuance of press releases, annual reports, quarterly reports, and SEC filings as well as the role of electronic information services in this process.
Class 3, August 3 (Thu), 8:30-5	HW 2 due, Quiz (covering Class 2)	Accounting module 2: Accounting for inventory (FIFO v. LIFO), long-term liabilities (notes and bonds payable), stockholders' equity (common v. preferred), treasury stock, cash dividends, stock dividends versus stock splits, introduction to financial statement analysis (liquidity, solvency, profitability, financial flexibility). Define, classify, and explain the nature of long-lived productive assets and interpret the fixed asset turnover ratio. Apply the cost principle to measure the acquisition and maintenance of property, plant, and equipment, as well as understand the concepts of depreciation, depletion, and amortization of PP&E. Define, measure, and report current liabilities. Classify cash flow statement items as part of net cash flows from operating, investing, and financing activities. Develop basic understanding of the issues involved in the transition to IFRS.
Class 4, August 4 (Fri), 8:30-5	HW 3 due, Quiz (covering Class 3)	Finance module 1: Principles in finance, Ethical issues in finance, Time value of money (present value and future value, annuities and other cash flow patterns, interest rate conversions, etc.).
Class 5, August 7 (Mon), 8:30-5	HW 4 due, Quiz (covering Class 4)	Finance module 2: Valuation, Stocks and bonds and how they are valued, Other fixed income securities, Capital Structure part I (financial leverage), Term structure of interest rates.
Class 6, August 8 (Tue), 8:30-5	HW 5 due, Quiz (covering Class 5)	Economics for finance (supply and demand curves, elasticity, profit maximization, capital structure part 2-operating leverage), markets: perfect competition, monopoly, oligopoly, economic role of government: monetary and fiscal policy, regulation, taxation). Finance module 3: Interest rate environment (including interest rate risk and its measurement and management)

August 9 (Wed)		No class
Class 7, August 10 (Thu),8:30 - 5	HW 6 due, Quiz (covering Class 6)	Finance module 4: (Capital markets, How securities trade, The role of financial intermediaries, Capital market efficiency, Arbitrage, Risk & Return, Portfolio math, begin Modern portfolio theory)
Class 8, August 11 (Fri), 8:30-5	HW 7 due, Quiz (covering	Finance module 5: (Finish Modern Portfolio Theory & Asset pricing models, Cost of capital).
Class 9, August 14 (Mon) 8:30-5	HW 8 due, quiz covering Class 8)	Statistics part 1 (Statistics topics include tabular & graphical representation of data, measures of location (mean, median, mode) & dispersion (range, variance, standard deviation), using mean and standard deviation (Z-score and empirical rule), the sampling distribution of the sample mean (central limit theorem), and the normal probability distribution.
August 15 (Tue), 8:30 - ?		Mandatory field trip (details to-be-announced)
Class 10, August 16 (Wed), 11:15-5:30	HW 9 due	*Mandatory writing evaluation for BUS 602, Storer Auditorium, 9:15am – 10:45am.* Class 11:15-12:15, lunch break approx. 12:15-1:15, class approx. 1:15-5:30 Statistics part 2 (Statistics topics include tabular & graphical representation of data, measures of location (mean, median, mode) & dispersion (range, variance, standard deviation), using mean and standard deviation (Z-score and empirical rule), the sampling distribution of the sample mean (central limit theorem), and the normal probability distribution).
Class 11, August 17 (Thur), 8:30-5 followed by social Event		FINANCE 6 capital budgeting – **LOCATION Cox Science Classroom #145 – not Storer!!** ***MSF Social at Splitsville Lanes, 5:30 pm - ??***
August 18 (Fri), 1-3		*No class [International Student Orientation (**mandatory** for international students). Learning Center, Ro*
August 19 (Sunday)		*No class [President's New Student Picnic, 4pm, Donna Shalala Student Center]*
August 21 (Monday)		Take-home assignments on statistics & capital budgeting due by noon.