15.415E Course Outline

The lecture dates are approximate. The readings from Brealey-Myers (BM) are required, and the readings from Bodie, Kane, and Marcus (BKM) are recommended but not required.

February 2

**Topic 1**  
**Introduction**  
Corporate financial decisions, overview of the course  
**Read:** BM Chapter 1; BKM Chapters 1-4

February 2, 4, 5, 9

**Topic 2**  
**Present Values**  
Time value of money, net present value, future value, perpetuities, annuities, compounding  
**Read:** BM Chapters 2, 3 (3.1-3.4)

**Topic 3**  
**Capital Budgeting under Certainty**  
Net present value, payback, internal rate of return  
**Read:** BM Chapter 5

February 11, 12, 18, 19  (follow Monday schedule on February 16)

**Topic 4**  
**Valuation of Fixed-Income Securities I**  
Discount bonds, term structure of interest rates, forward interest rates, coupon bonds, bootstrapping spot rates  
**Read:** BM Chapters 3 (3.5), 23 (23.1, 23.2); BKM Chapters 13, 14

**Topic 5**  
**Valuation of Fixed-Income Securities II**  
Duration and interest-rate risk  
**Read:** BM Chapter 23 (23.3); BKM Chapter 15

**Topic 6**  
**Valuation of Fixed-Income Securities III**  
Theories of the term structure, corporate and municipal bonds  
**Read:** BM Chapters 23 (23.4, 23.5), 24; BKM Chapters 13, 14
February 23, 25

**Topic 7**  
**Valuation of Common Stocks**  
Discounted cash flow model, price-earnings ratios  
**Read:** BM Chapter 4; BKM Chapters 17, 18

February 26, March 2, 4

**Topic 8**  
**Measuring Risk**  
Variance, covariance, beta, historical returns  
**Read:** BM Chapter 7

**Topic 9**  
**Portfolio Theory**  
Diversification, portfolio theory, aggregate vs. idiosyncratic risk  
**Read:** BM Chapters 7, 8 (8.1); BKM Chapters 5, 6, 7

March 5, 9

**Topic 10**  
**The Capital Asset Pricing Model (CAPM)**  
Derivation of the CAPM  
**Read:** BM Chapter 8 (8.2, 8.3, 8.5); BKM Chapters 8, 9

March 11: **Review for Midterm Exam**

March 12: **Midterm Exam**

March 16: **No class**

March 18, 19, 23, 25, 26: **Spring Break (Sloan schedule)**
March 30, April 1, 2, 6, 8

Topic 11  Derivatives I
Examples of derivatives, trading strategies involving derivatives, uses of derivatives
Read: BM Chapters 20 (20.1), 25 (25.1-25.3); BKM Chapters 19, 21, 22

Topic 12  Derivatives II
Forward and futures prices, arbitrage relations for call and put prices
Read: BM Chapters 20 (20.2), 25 (25.2, 25.3); BKM Chapters 19, 21, 22

Topic 13  Derivatives III
The binomial option pricing model, dynamic replicating strategies
Read: BM Chapter 20 (20.3, 20.4); BKM Chapter 20

Topic 14  Derivatives IV
The Black-Scholes model, pricing exotic options
Read: BM Chapter 20 (20.5, 20.6); BKM Chapter 20

April 9: Diversity Day

April 13, 15

Topic 15  Capital Budgeting under Uncertainty
Risk-adjusted discount rates, measuring betas
Read: BM Chapter 9

Topic 16  Other Applications of the CAPM
Required rate of return, performance evaluation, is $\beta$ dead?
Read: BM Chapters 8 (8.4), 9; BKM Chapters 10, 11, 24
April 16: No class

April 20: Patriots Day

April 23

Topic 17  Market Efficiency
Notions of market efficiency, tests of market efficiency, implications of market efficiency
Read: BM Chapter 13; BKM Chapter 12

April 24, 27, 29

Topic 18  Capital Structure I
Debt vs. equity, MM theorem
Read: BM Chapter 17, UST

Topic 19  Capital Structure II
Taxes and bankruptcy costs, agency and information costs
Read: BM Chapter 18

April 30, May 4, 6, 7

Topic 20  Valuation I
WACC and APV methods
Read: BM Chapter 19

Topic 21  Valuation II
Valuation in practice
Read: American Chemical

Topic 22  Valuation III
Valuation in practice
Read: American Chemical

May 11: Open topic, most likely International Finance

May 13: Review for Final Exam