

**Formulae Sheet**

**FIN 377: Investments**

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*NOTE: This sheet is for study purposes only. You may* ***not*** *use it during the exam.*

**Topic 1: Introduction and Financial Markets**

None

**Topic 2: Investment Vehicles**

Net Asset Value (NAV)



Return on Mutual Fund



**Topic 3: Historical Returns on Major Asset Classes**

Real vs. Nominal Interest Rate



NOTE: The approximation formula,, is not sufficient.

Taxes and the Real Rate of Interest



Return on a Zero-Coupon Bond



Effective Annual Rate (EAR)



Annual Percentage Rate (APR)



Holding Period Return



Expected Returns (weighted)



Variance (VAR)



Standard Deviation (STD)



Arithmetic Average



Geometric (Time-Weighted) Average



Sharpe Ratio



**Topic 4: Risk and Risky Portfolios**

Utility Function



Portfolio with One Risk Free and One Risky Asset:

Expected Return



Standard Deviation



Slope (Sharpe Ratio)



Portfolio with Two Risky Assets:

Expected Return



Variance



Slope (Sharpe Ratio)



**Topic 5: Bond Prices and Yields**

Bond Price



Yield to Maturity (YTM)

Use your financial calculator

Current Yield (CY)



Yield to Call (YTC)

Use your financial calculator

**Topic 6: The Term Structure of Interest Rates**

 Forward Rate



**Topic 7: Equity Valuation Models**

Holding Period Return



Price = No-Growth Value per Share + PVGO



Growth Rate



Dividend Discount Models



Constant DDM



Constant Growth DDM



Mixed Model



Free Cash Flow (to the Firm)



Price(Market)-to-Book Ratio



Price-to-Cash-Flow Ratio



Price-to-Sales Ratio



**Topic 9: Capital Asset Pricing Model (CAPM)**

CAPM



CAPM (written in terms of risk premia, RP)



Risk Premium on the Market Portfolio



Total Risk = Market Risk + Unique Risk



CAPM + Liquidity Premium



**Topic 10: Multiple Factor Models**

Single Factor Model



Multifactor Model



Multifactor APT



Fama-French Three-Factor Model



Fama-French Five-Factor Model



**Topic 11:  Efficient Markets**

None

**Topic 12: Behavioral Finance and Technical Analysis**

None

**Topic 14: Options Markets: Introduction**

Call Payoff



Put Payoff



Put-Call Parity



**Topic 15: Options Valuation**

Hedge Ratio



Binomial Model: u and d





Black-Scholes Model







Delta

