



**Birla Institute of Technology & Science, Pilani**  
Hyderabad Campus

**FIRST SEMESTER 2019-2020**  
Course Handout Part II

01-08-2019

In addition to Part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

*Course No.* : **ECON F412/FIN F313**  
*Course Title* : Security Analysis & Portfolio Management  
*Instructor-in-Charge* : Dr. Nivedita Sinha ([nivedita.sinha@hyderabad.bits-pilani.ac.in](mailto:nivedita.sinha@hyderabad.bits-pilani.ac.in))  
*Instructor* : Dr. Nemi Raja ([nemiraja@hyderabad.bits-pilani.ac.in](mailto:nemiraja@hyderabad.bits-pilani.ac.in))

**Scope and Objective of the Course:** The objective and focus of the course is to give an insight into evaluation and analysis of a wide range of financial securities and thereby developing techniques for designing an optimal portfolio. The purpose of this course is to provide an in depth understanding of theory and practice related to equity markets, debt markets and portfolio management. The major topics include portfolio theory, asset pricing models, market efficiency, fundamental and technical analysis, portfolio management, introduction to debt markets and fund performance evaluation. Various theories about equity securities are to be discussed and their practical implications for investment analysis and management of individuals and institutions to be examined.

This course is intended to equip the participants with tools for determining investment objectives, combining individual assets into portfolios, managing the portfolio, and finally, measuring the portfolio performance.

Those who are interested in fund management in asset management companies or in financial institutions will find this course useful. Also this will come in handy for those who aim for personal financial advising in an institution or in individual capacity.



Upon successful completion of the course, participants would be able to:

1. Appreciate and apply the concepts of Investment analysis in theory as well as in a real-life situation.
2. Identify numerous investments related risks that an investor is subject to while investing in financial securities.
3. Differentiate between various classes of financial securities such as Equities and Fixed Income Securities, and learn various techniques to value and analyze these securities.
4. Carry out Fundamental Analysis (that involves Economy Analysis, Industry Analysis and Company Analysis) to study the intrinsic strength of a firm and make investment decisions based on the study.
5. Analyze and interpret various technical charts related to stock price movements and predict future price movements to comment on Buy/Sell/Hold decisions.
6. Analyze the performance of the portfolios using various measures.

**Textbooks:**

1. Reilly Frank K and Keith C. Brown, Investment Analysis and Portfolio Management, 10<sup>th</sup> edition CENGAGE Learning, 2012.

**Reference books**

1. Zvi Bodie, Alex Kane, Alan Marcus, Pitabas Mohanty, “Investments”, 2010, McGraw Hill.
2. Modern Portfolio theory and Investment Analysis, Elton, Edwin.J, Gruber, Martin J., Brown, Stephen J., and Goetzmann, William, N. [EGBG], 9<sup>th</sup> edition, Wiley, Jan 2014
3. Prasanna Chandra - Investment Analysis and Portfolio Management, 4th edition, TMH.
4. D.E. Fisher and R.J. Jordan - Security Analysis and Portfolio Management, Prentice-Hall/Pearson Edu., <sup>th</sup> Edition, 1995
5. J. fuller & James L. Farrell – Modern Investment & Security analysis - McGraw Hill, International Ed.
6. J.C. Francis, Investments: Analysis and management, 5<sup>th</sup> Ed., 1991, McGraw Hill, Singapore
7. M.Ranganatham & R. Madhumathi: Investment Analysis & Portfolio Management, Pearson Education.
8. Murphy, John: Technical Analysis of the Financial Markets; New York Institute of Finance.
9. Bond Markets, Analysis and Strategies, Frank J. Fabozzi, 7/E, Pearson Education, 2013.



1. The detailed Course Content follows the tabulated Course plan

**Course Plan:**

Lecture No.	Learning objectives	Topics to be covered	Chapter in the Text Book
1-4	Exposure to investment climate, Risk and return.	Risk and return calculations, Investor life cycle and investor utility function, Understand various types of securities markets and its classification and functioning, Types of indices and their calculations, Types of orders Understand short selling and margin transactions	Ch 1-5 TB & Class notes
5-20	Modern Portfolio theory	Markowitz model, Sharpe's Single Index model, Capital Asset Pricing model, Arbitrage pricing, Multi factor Models. Calculation of returns and abnormal returns using the asset pricing models	Ch 7-9 TB & Class notes
21-23	Efficient Market Hypothesis	Understand Efficient Market Hypothesis and its implications Calculation and Analysis of Cumulative Abnormal returns Testing market efficiency	Ch.6 & Class notes
24-30	Fundamental Analysis	Economy, Industry & Company Analysis, Models of Security Valuation (Cash Flow Model, Dividend Discount Model and Relative Valuation)	Ch 10-14TB & Class notes
31-32	Technical Analysis	Understanding the significance and limitations of Technical Analysis. Popular figures and chart patterns, their analysis and interpretation.	Ch 15-16 TB & Class notes
33-36	Evaluation of Portfolio Performance	Composite measures of Portfolio performance, Fama's measure, Sortino's measure, Holding based performance measures, Performance Attribution analysis, Market timing skills & stock selection skills	Ch 25 TB & Class notes
37-40	Fixed Income securities or Debt markets	Understand the relevance of fixed income securities, evaluate bond portfolio management strategies	Ch 17-19 TB & Class notes
41-42	Project Presentations	Project presentations by students	

## **Course Content**

### **Module I**

#### **Exposure to investment climate, risk and return**

##### **Topics**

In this section, students are expected to understand the overall financial ecosystem in which investors have to make their investment decisions and firms have to make their financing decisions. It includes the study of various types of financial markets, their trading systems, trading mechanisms and issues of various types of securities. Also, students will be introduced to the risk and return concepts which form the core of understanding financial decisions. Various methods of calculating risk and return, i.e., Historical as well as expected, are discussed in the class.

##### **Learning outcomes:**

At the end of this topic, students are expected to have understood

1. What are financial markets and their importance in the overall economy
2. Various classification systems of financial markets
3. Instruments which are traded in financial systems and how they are issued in such markets
4. Historical method of calculating various measures of risk and return
5. Calculating expected return and risk using probability distribution

##### **Additional activities**

Students will collect historical data from NSE website on a given stock and are required to calculate various risk and return measures

##### **Additional references**

[www.nseindia.com](http://www.nseindia.com)

[www.bseindia.com](http://www.bseindia.com)



## **Module II**

### **Modern Portfolio Theory**

#### **Topics**

Modern portfolio theory deals with forming efficient portfolios using risk-return relationship with the objective of maximizing return per unit of risk. By decomposing total risk into systematic and unsystematic risk, we derive a functional relationship between risk and return relationship and this relationship could be used to price any financial security which is traded in the market. For investors, it provides a base to form their expectations and for firms it provides a base to understand investor's expectations.

#### **Learning outcomes**

At the end of this topic, the students are expected to understand and appreciate

1. The equilibrium mean-variance relationship in a given market
2. Efficient portfolios and efficient frontier
3. Capital market line
4. Systematic and unsystematic risks
5. Security market line and capital asset pricing model
6. Arbitrage pricing model
7. Fama French 3 factor model, Cahart model and Fama French 5 factor model

#### **Additional activities**

Students will be given an assignment to form efficient frontier, CML and SML for a given set of equity stocks using real historical data from NSE using excel, R or python.

## **Module III**

### **Efficient Market Hypothesis**

#### **Topics**

An efficient capital market is one in which security prices adjust rapidly to the arrival of new information, and, therefore current prices of securities reflect all information about security. The relevant question to ask is “are markets efficient”? What are the various forms of market efficiency? How to test market



efficiency? What are the implications of market efficiency on fundamental and technical analysis?

### **Learning outcomes**

1. Understand efficient market hypothesis
2. Understand the anomalies identified in the market
3. Learn to calculate abnormal returns
4. Learn about event study methodology to test market efficiency

### **Additional activities:**

Students are expected to perform an event study methodology for an actual event and see the reaction of stock prices to test market efficiency.

### **Additional references:**

<http://faculty.iima.ac.in/~iffm/Indian-Fama-French-Momentum/>

[http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html)

## **Module IV**

### **Fundamental Analysis**

#### **Topics:**

Fundamental analysis is a major approach for stock valuation. The basic assumptions are that there are some fundamental economy, industry and firm level factors which drive the prices of equity stocks. This chapter discusses various frameworks to understand how fundamental factors affect value. Also, it provides a framework to calculate the value of a stock, with the assumption that markets are efficient. In this module, we discuss various stock valuation methods under the fundamental approach.

### **Learning outcomes**

The students are expected to understand and apply the following stock valuation methods for real historical data

1. Dividend discount models
2. Earnings valuation
3. Relative valuation

### **Additional activities:**

Students are expected to value the assigned firm using all the three valuation methods using real data



collected from their annual financial statements.

## **Module V**

### **Technical Analysis**

#### **Topics:**

Technical Analysis is the study of market action (stock prices, volume and open interest), primarily using charts, for forecasting future price trends. It has become a useful tool for making investment decisions as market price acts as a leading indicator of the fundamentals. This topic introduces an alternative approach to valuation, with an assumption that markets are not efficient. The students will gain understanding of the significance and limitations of Technical Analysis. This Module discusses various chart patterns of stock prices and relevant trading strategies to be used.

#### **Learning Outcomes:**

The student is expected to gain the conceptual and applied knowledge in the following areas:

1. Different patterns of historical stock prices
2. Interpreting chart patterns
3. Forecasting stock and market trends

#### **Additional activities:**

Students are expected to perform an exercise with real data on the use of various technical indicators to provide buy/sell recommendations.

## **Module VI**

### **Evaluation of Portfolio Performance**

#### **Topics:**

Students will learn various portfolio performance measures in this Module. The topic will start with the Composite Portfolio Performance measures such as Sharpe's measure, Jensen's alpha measure, Treynor's measure, Information ratio. Some other performance measures such as Sortino's measure which measures risk as downside risk will also be dealt with in this Module. Measurement of market timing skills and stock selection skills of an active portfolio manager using simple statistical techniques will be covered. Fama's Components of Investment Performance measures will provide insights to



measuring Selectivity, Diversification, Net Selectivity measures. This module will also cover Holding based performance measures and Performance Attribution analysis.

**Learning Outcomes:**

Students will learn how to evaluate portfolio performance.

Students will be able to compare mutual funds' performance using these measures

**Additional activities:**

Exercise on evaluating two different mutual funds using the performance measures learnt in this Module.

**Additional Readings:**

Fama 1992. Components of Investment Performance, The Journal of Finance, Vol. 27, No. 3, pp. 551-567

**Additional references:**

<https://www.amfiindia.com/>

**Module VII****Fixed Income securities or Debt markets**

The world's Bond markets are estimated at over \$100 trillion, much larger than the Equity market. They offer a vital source of finance for both corporates and governments. This Module covers the intricacies of Fixed Income markets in depth. It encompasses issues related to both domestic and global debt markets.

**Learning Outcomes:**

1. Understand the relevance of various Fixed Income Securities, Price volatility characteristics of Bonds and the factors influencing Yield Curve.
2. Apply the concept of Theoretical Spot rate to create Zero Coupon Yield Curve.
3. Evaluate Option free bonds in terms of risk, return and value.
4. Understand various types of Mortgages, the cash flow and yield and the risks associated with them.





5. Evaluate passive and active Bond Portfolio Management strategies.

**Additional activities:**

A comparative study on Bond Spread and Z Spread of the selected bonds comprising a portfolio.

**Additional Readings:**

1. Subprime Mortgages: A Case Providing the perspectives of a Home Buyer and a CDO  
Michael Tucker, Fairfield University Journal of the International Academy for Case Studies, Volume 15, Number 7, 2009, First Part of the Case

**Evaluation Scheme:**

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Mid Semester Examination	1 hour 30 Minutes	30	1/10, 11.00 -- 12.30 PM	CB
Surprise Quizzes/tests		20		CB
Assignments/ Presentations		20		OB
Comprehensive Examination	3 hours	30	6/12 AN	CB

**Chamber Consultation Hour:** With prior appointment

**Notices:** All notices pertaining to this course shall be displayed on the **Course Management System (CMS)** or the **Economics and Finance Notice Board**.

**Make-up Policy:** Make-up will be approved only for students who give a prior (on or before test date) intimation with a genuine reason.

**Academic Honesty and Integrity Policy:** Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

**INSTRUCTOR-IN-CHARGE**  
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