MINOR IN FINANCIAL ECONOMICS (Using Data Analytics)

Course Sl. No.	Course Code	Credit [20]	Semester	Course Title
M1	HS3040	3	6	Money and Financial Markets
M2	HS4021	3	7	Econometrics for Business Data Analysis (Use of SPSS)
M3	HS4023	3	7	Financial Economics
M4	HS4025	3	7	Corporate Finance
M5	HS4026	3	8	Public Economics
M6	HS4028	3	8	Advanced Econometrics (Use of Eviews)
M7	HS4084	2	8	PROJECT

HS3040 **Money and Financial Markets** Cr-3

Course Outcome: At the end of the course, the students will be able to:

CO1 Explain why people hold money and why it is used in the trading process
CO2 Explain the impact of money multiplier and accelerator
CO3 Describe and explain the role of interest rate in an economy.
CO4 Discuss the role of financial institutions in strengthening the economy.
CO5 Describe and explain the main channels of the monetary transmission mechanism, through which monetary policy can have real effects on the economy
CO6 Discuss the merits and disadvantages of different monetary policies used by Central Banks

Unit 1

Money: concept, functions, measurement; theories of money supply determination. High Powered Money. Money multiplier and accelerator theory. Cryptocurrency

Unit 2

Financial institutions, markets, instruments, and financial innovations. Role of financial markets and institutions; problems of adverse selection and moral hazard; financial crises Money and capital markets: organisation, structure, and reforms in India; role of financial derivatives and other innovations

Unit 3

Interest rates Determination; sources of interest rate differentials; theories of term structure of interest rates; interest rates in India.

Unit 4

Banking System Balance sheet and portfolio management Indian banking system: changing role and structure; banking sector reforms. Central banking and monetary policy.

Books:

Text-

- Monetary Economics: Institutions, Theory & Policy, Suraj B Gupta. S. Chand

Reference-

1. Baye, M., Jansen, D. (2006). *Money, banking and financial markets.* AITBS.
2. Bhole, L., Mahukud, J. (2017). *Financial institutions and markets, 6th ed.* Tata McGraw-Hill.
3. Fabozzi, F., Modigliani, F., Jones, F., Ferri, M. (2010). *Foundations of financial markets and institutions, 4th ed.* Pearson Education.
4. Jadhav, N. (2009). *Monetary policy, financial stability and central banking in India.* Macmillan.
5. Khan, M. (2015). *Indian financial system, 9th ed.* Tata McGraw-Hill.
6. Mishkin, F., Eakins, S. (2017). *Financial markets and institutions, 8th ed.* Pearson.
7. Mohan, R. (2011). *Growth with financial stability: Central banking in an emerging market.* Oxford University Press.
8. Various latest issues of RBI Bulletins, Annual Reports, Reports on Currency and Finance, and Reports of the Working Group, IMF Staff Papers.

HS4021 **Econometrics for Business Data Analytics (Use of SPSS)** Cr-3

Course Outcome: At the end of the course, the students will be able to:

CO1 Understand the usage of econometric tools in business.
CO2 Describe BLUE and various types of distribution
CO3 Forecast future values using correlation and regression using SPSS
CO4 Check the relation between variables using causality, factor analysis and SEM using SPSS
CO5 Estimate and predict using dummy variables using SPSS
CO6 Gain working knowledge on SPSS

UNIT 1

Nature and scope of Econometrics. Specification Analysis. Omission of a relevant variable. Inclusion of irrelevant variable, Tests of specification. Estimation of parameters, Testing of hypotheses , Defining statistical hypotheses, Distributions of test statistics, Testing hypotheses related to population parameters, Type-I and Type-II errors; Power of a test.

UNIT 2

Properties of estimators, Best Linear Unbiased Estimator, Goodness of fit- R^2 and Adjusted R^2. Scaling and units of measurement, Confidence intervals, Gauss Markov Theorem. Normal distribution; chi-sq, t-and F-distributions, , Tests for comparing parameters from two samples. Data analysis using SPSS.

UNIT 3

Correlation- Partial and multiple. Estimation of model by method of ordinary least squares. Causality test, Granger test and Sim's test. Forecasting. Violations of Classical Assumptions: Consequences, Detection and Remedies – Multicollinearity; Heteroscedasticity; Serial correlation. Data analysis using SPSS.

UNIT 4

Individual and Joint Functional Forms of Regression Models. Qualitative (dummy) independent variables. Factor Analysis. Cluster analysis. Structural Equation Modeling. Data analysis using SPSS and AMOS.

Books:

Text-

- Multivariate Data Analysis, 8th Edition. Joseph F. Hair Jr., William C. Black, Barr y J. Babin, Rolph E. Anderson . Cengage Publication.

Reference-

1. Gujarati D. N., Basic Econometrics, Mc Graw Hill, New Delhi.
2. Wooldridge, Introduction to Econometrics,Cengage Publication.
3. Kmenta J., Elements of Econometrics, University of Michigan Press.
4. Johnston J., Econometric Methods (2nd edition), Mc Graw Hill, New Delhi
5. Gupta S.C, Fundamental of Statistics. Himalaya Publishing House.
6. Gupta S.C and Kapoor V.K., Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.
7. G.S. Maddala- An Introduction to Econometrics
8. Landau, S., & Everitt, B. S. (2003). A handbook of statistical analyses using SPSS. Chapman and Hall/CRC

HS4023 **Financial Economics** Cr-3

Course Outcome: At the end of the course, the students will be able to:

CO1 Understand theories of investment
CO2 Discuss portfolio analysis
CO3 Explain Efficient Market Hypothesis
CO4 Describe Capital Asset Pricing Model
CO5 Understand derivatives and options
CO6 Discuss various types of contracts

Unit 1

Investment theory and portfolio analysis: deterministic cash flow streams; basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed-income securities; bond prices and yields; interest rate sensitivity and duration; immunisation; the term structure of interest rates; yield curves; spot rates and forward rates.

Unit 2

Single period random cash flows; mean-variance portfolio theory; random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean-variance portfolio analysis: the Markowitz model and the two-fund theorem; risk-free assets and the one-fund theorem. Efficient Market Hypothesis.

Unit 3

CAPM: the capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula; the CAPM as a factor model, arbitrage pricing theory.

Unit 4

Futures, options and other derivatives: introduction to derivatives and options; forward and futures contracts; options; other derivatives.

Books:

Text-

- Zvi Bodie;Alex Kane;Alan J. Marcus; Pitabas Mohanty. Investments, 11th Edition. Mc Graw Hill.

Reference-

1. Brealey, R., Myers, S., Allen, F., Mohanty, P. (2013). *Principles of corporate finance, 10th ed.* Tata McGraw-Hill.
2. Hull, J., Basu, B. (2017). *Options, futures, and other derivatives, 9th ed.* Pearson Education.
3. Luenberger, D. (2013). *Investment science*. Oxford University Press.

HS4025 **Corporate Finance** Cr-3

Course Outcome: At the end of the course, the students will be able to:

CO1 Learn about expected utility maximization – Risk aversion
CO2 Understand trade-off between risks and return.
CO3 Know the principle of arbitrage; discrete processes and the binomial tree mode.
CO4 Analyse the risk neutral valuation; stochastic process and the Markov property
CO5 Learn the idea underlying the Black- Scholes-Merton (BSM) differential equation, BSM pricing formulas; the Greek letters.
CO6 Understand the use of futures for hedging

UNIT 1

The Economic properties of utility functions – concept & measures to model attitudes towards risk – Expected utility maximization – Risk aversion – Motivation – First order stochastic dominance – Second order stochastic dominance – Stochastic dominance Vs dominance- risk: Risk versus return: Mean-variance analysis. Game Theory. The Prisoner's Dilemma. Nash Equilibrium.

UNIT 2

Trade-off between risk and return (the Markowitz model) – Efficient frontier of risky assets – Value at risk of a portfolio – Computing VaR-Definition of VaR. Sharpe single index model.

UNIT 3

The principle of arbitrage; discrete processes and the binomial tree model; risk neutral valuation; stochastic process (continuous variable, continuous time), the Markov property, Itô's lemma; the idea underlying the Black- Scholes-Merton (BSM) differential equation, BSM pricing formulas; the Greek letters.

UNIT 4

The use of futures for hedging, stock index futures; forward and futures prices; interest rate futures and duration-based hedging strategies, option markets; call and put options; factors affecting option prices; put-call parity; option trading strategies: spreads; straddles; strips and straps; strangles.

Books:

Text-

- Westerfield, R. W., Jaffe, J., Ross, S. A., & Kakani, R. K. Corporate Finance (8th Edition ed.). The McGraw.Hill Companies.

Reference-

1. D.G. Luenberger (1998), Investment Science, Oxford University Press, New York.
2. J. Cvitanic and Zapatero F (2004), Introduction to Economics and Mathematics of Financial Markets,
MIT Press, Cambridge, London.
3. E. J. Elton and M.J. Gruber, Modern Portfolio Theory and Investment Analysis, Wiley, London.
4. Z. Bodie, A. Kane and A.J. Marcus (2004), Investments, Irwin McGraw – Hill, London.
5. R.A. Haugen (2001), Modern Investment Theory, Fifth Edition, Prentice Hall, New Jersey.
6. J.C. Hull (2004), Futures and Option Markets, Prentice-Hall, New Jersey.
7. The Theory of Corporate Finance. Jean Tirole. ISBN 9780691125565. Princeton University Press.

HS4026 **Public Economics** Cr-3

Course Outcome: At the end of the course, the students will be able to:

CO1 Know what the study of public finance is all about, different roles played by the government in an economy.
CO2 Learn about the interaction between the public and the private sector regarding several economic functions in an economy
CO3 Analyze the rationale behind different public sector activities by the government as suggested from the study of public finance
CO4 To know about the difference between public goods and private goods.
CO5 Understand the market failure and the role of the government
CO6 Learn the importance of financial market in the light of the need to achieve efficiency and distribution goals.

UNIT 1
Public Finance and private finance; public good vs. private good; Market failure and role of government; Criteria for public investment-Social Cost-Benefit Analysis; Maximum Social Advantage. Tax System: structure and reforms. Tax saving schemes.

UNIT 2
Wagner's law of increasing state activities; Wiseman-Peacock hypothesis; Pure theory of public expenditure; Structure and growth of public expenditure; Criteria for public investment; Social cost-benefit analysis – Project evaluation.

UNIT 3
Objectives of fiscal policy – full employment, anti-inflation, economic growth, redistribution of income and wealth; Interdependence of fiscal and monetary policies; Budgetary deficit and its implications; Fiscal policy for stabilization – Automatic vs discretionary stabilization; Alternative measures of resource mobilization and their impact on growth, distribution and prices; Balanced budget multiplier.

UNIT 4
Challenges of financing small economic operators like moral hazard, adverse selection, high transaction cost and information asymmetry etc. Concept of microfinance: different models of microfinance operating in India; Self Help Group-Bank Linkage Programme (SBLP) in India. Subsidy-linked credit programmes and Non subsidy-link programmes of the Government of India for rural sector.

Books:

Text-

- Musgrave, R.A. and P.B.Musgrage (1976), Public Finance in Theory and Practice, McGraw Hill, Kogakusha, Tokyo.

Reference-

1. Goode, R.(1986), Government Finance in Developing Countries, TMH, New Delhi.
2. Jha. R.(1998), Modern Public Economics, Routledge, London.
3. Atkinson, A.B. and J.E. Siglitz (1980), Lectures on Public Economics,TMH, New York.
4. Herber, B.P. (1967), Modern Public Finance, Richard D.Irwin, Homewood.
5. Stiglitz, J. E., & Rosengard, J. K. (2015). Economics of the public sector: Fourth international student edition. WW Norton & Company.

HS4028 **Advanced Econometrics (Use of Eviews)** Cr-3

Course Outcome: At the end of the course, the students will be able to:

CO1 Learn the regressions with Qualitative Independent Variables.
CO2 Understand the theory and application of dynamic econometrics models.
CO3 Know to estimate and interpret the Granger causality test results
CO4 Understand about Eviews software and import of data to Eviews
CO5 Learn the data analysis using Eviews.
CO6 Know the theory and application of cointegration, VAR and VECM with time series data.

UNIT 1:
Regressions with Qualitative Independent Variables :- Dummy variable technique – Testing structural stability of regression models comparing to regressions, interaction effects, seasonal analysis, piece wise linear regression; The LPM, Logit, Probit and Tobit models – applications. Data analysis using Eviews.

UNIT 2:
Dynamic Econometric Model. Auto-regressive and distributed lag models – Koyak model, partial adjustment model, adaptive expectations; Instrumental variables, Problem of auto-correlation – application; Almon approach to distributed lag models. Data analysis using Eviews.

UNIT 3:
Ordinary Least Square Methods- OLS, FMOLS, DOLS. Estimating generalized least squares (GLS) equations using the Cochrane-Orcutt method. Data analysis using Eviews.

UNIT 4:
Volatility model(s)- ARCH, GARCH, GARCH-M, TGARCH, EGARCH. Cointegration, VAR and VECM. Data analysis using Eviews.

Books:

Text-
- Bhaumik, Sankar – Principles of Econometrics: A Modern Approach using EViews, OUP, 2015

Reference-

1. Koutsoyiannis, A. (1977) Theory of Econometrics, Macmillan Press, London.
2. Amemiya,T. (1985), Advanced Econometrics, Harvard University Press, London
3. Mas-Colell,A., M.D. Whinston and J.R. Green Microeconomic Theory, Oxford University Press, 1995.