

Semester-Wise Under Graduate Course Structure of Economics Honours (B.Sc) of Techno India University (TIU), WB, 2019

Each paper will be covered in 45-55 lecture periods (including continuous evaluation/internal assessment) of 50 minutes duration each; three (3-4) classes per week for each of the papers.

Sequencing of the Courses

Semester	Course				
I	Microeconomic Analysis I	Macroeconomic Analysis I	Statistics I	Mathematics for Economics I	Resource and Environmental Economics
II	Microeconomic Analysis II	Macroeconomic Analysis II	Statistics II	Mathematical Economics I	Business Accounting
III	Econometrics I	Mathematical Economics II	Development Economics	Applied Economics I (application of Econometrics, lab and software based)	Minor Project
IV	International Trade I	Econometrics II	Research Methodology	Applied Economics II (application of Econometrics, lab and software based)	Evaluation of the Internship with Business Unit of the last Semester
V	International Trade II- Theory of Balance of Payments and Exchange Rate	India in the Global Economy	Financial Economics	Law and Economics	Pilot Project (Part A): Formulation and Survey
VI	Indian Banking and Finance	Managerial Behaviour and Organizational Architecture	Risk Management	Industrial Economics	Pilot Project (Part B) on Internship of the Previous Semester: Report and Assessment by Seminar and Viva-voce

Students will be provided the opportunity of having internship programme with different business houses in the third and in the fifth semester. Evaluation of those works will be done in the next semester. Apart from the above mentioned core courses, students will have the opportunity to learn Computer Fundamentals and Applications (both theory and practice), Career Advancement and Skill Development (CASD) and Entrepreneurship Skill Development (ESD) as compulsory subjects.

Semester –I (July to December)

Type of Course	Name of the Course	Teaching Hours Per Week			Credit
		L	T	P	
Economics Core Course –I	Microeconomic Analysis 1	2	1	0	3
Economics Core Course –II	Macroeconomic Analysis 1	2	1	0	3
Economics Core Course –III	Statistics I	2	1	0	3
Economics Core Course –Iv	Mathematics for Economics I	2	1	0	3
Economics Core Course –V	Resource and Environmental Economics	2	1	0	3
CFA	Computer Fundamentals and Applications	2	1	0	3
CASD	Career Advancement and Skill Development	2	1	0	3
Practical					
CFA (practical)	Computer Fundamentals and Application Lab	0	0	2	2
Seasonal					
ESD	Entrepreneurship Skill Development	0	0	1	1
Total Credit		24			

L-lecture, T-tutorial, P-practical

Semester II (Jan-June)

Type of Course	Name of the Course	Teaching Hours Per Week			Credit
		L	T	P	
Economics Core Course –VI	Microeconomic Analysis II	3	1	0	4
Economics Core Course –VII	Macroeconomic Analysis II	3	1	0	4
Economics Core Course –VIII	Statistics II	3	1	0	4
Economics Core Course –IX	Mathematical Economics I	3	1	0	4
Economics Core Course –X	Business Accounting	3	1	0	4
CASD	Career Advancement and Skill Development	1	1	0	2
Practical					
CSLL	Communication Skill and Language Lab	0	0	1	1
Seasonal					
ESD	Entrepreneurship Skill Development	0	0	1	1
Total Credit		24			

L-lecture, T-tutorial, P-practical

Semester III (July-Dec)

Type of Course	Name of the Course	Teaching Hours Per Week			Credit
		L	T	P	
Economics Core Course –XI	Econometrics I	3	1	0	4
Economics Core Course –XII	Mathematics for Economics II	3	1	0	4
Economics Core Course –XIII	Development Economics	3	1	0	4
Economics Core Course –XIV	Applied Economics I (Application of Econometrics, lab and software based)	0	0	4	4
CASD	Career Advancement and Skill Development	1	1	0	2
Practical					
CSLL	Communication Skill and Language Lab	0	0	2	2
Seasonal					
ESD	Entrepreneurship Skill Development	0	0	1	1
MP	Minor Project	0	0	3	3
Total Credit		24			

L-lecture, T-tutorial, P-practical

Semester IV (Jan-June)

Type of Course	Name of the Course	Teaching Hours Per Week			Credit
		L	T	P	
Economics Core Course –XVI	International Trade I	3	1	0	4
Economics Core Course –XVII	Econometrics II	3	1	0	4
Economics Core Course –XVIII	Research Methodology	3	0	1	4
Economics Core Course –XX	Evaluation of Internship with Business Unit of the last semester	0	0	3	4
CASD	Career Advancement and Skill Development	1	1	0	2
Practical					
MCL	Managerial Communication Lab	0	0	2	2
AE	Applied Economics II (Application of Econometrics, lab and software based)	0	0	3	3
Seasonal					
ESD	Entrepreneurship Skill Development	0	0	1	1
Total Credit		24			

L-lecture, T-tutorial, P-practical

Semester V (July-Dec)

Type of Course	Name of the Course	Teaching Hours Per Week			Credit
		L	T	P	
Economics Core Course –XXI	International Trade II-Theory of Balance of Payments and Exchange Rate	3	1	0	4
Economics Core Course –XXII	India in the Global Economy	3	1	0	4
Economics Core Course –XXIII	Financial Economics	3	1	0	4
Economics Core Course –XIV	Law and Economics	3	1	0	4
PP	Pilot Project (Part A): Formulation and Survey	0	0	3	3
CASD	Career Advancement and Skill Development	1	1	0	2
Practical					
MCL	Managerial Communication Lab	0	0	2	2
Seasonal					
ESD	Entrepreneurship Skill Development	0	0	1	1
Total Credit		24			

L-lecture, T-tutorial, P-practical

Semester VI (Jan-July)

Type of Course	Name of the Course	Teaching Hours Per Week			Credit
		L	T	P	
Economics Core Course –XV	Indian Banking and Finance	3	1	0	4
Economics Core Course –XVI	Managerial Behaviour and Organizational Architecture	3	1	0	4
Economics Core Course –XVII	Risk Management	3	1	0	4
Economics Core Course –XVIII	Industrial Economics	3	1	0	4
CASD	Career Advancement and Skill Development	1	1	0	2
Practical					
PP	Pilot Project (Part B) on Internship of the Previous Semester: Report and Assessment by Seminar and Viva-voce	0	0	3	3
MCL	Managerial Communication Lab	0	0	2	2
Seasonal					
ESD	Entrepreneurship Skill Development	0	0	1	1
Total Credit		24			

L-lecture, T-tutorial, P-practical

FIRST YEAR SEMESTER I

Course Description

Microeconomic Analysis 1

1. **Introduction:** Microeconomics - Allocation of scarce resources, Models, Uses of microeconomic models.
2. **Supply and Demand** - Demand, Supply, Market equilibrium, Shocking the equilibrium, Comparative statistics, Elasticities.
3. **Consumer Theory** - Preferences, Utility, Budget constraints, Constraint Consumer Choice, Behavioural economics.
4. **Demand** - Deriving demand curves, Effects on demand.
5. **Consumer Welfare and Policy Analysis** - Consumer Welfare, Expenditure functions, Consumer Surplus.
6. **Production and Cost** – Technology – general concept of Production Function, production with one and two variable inputs, total average and marginal products, short run and long run, returns to factor and returns to scale, Isoquants, marginal rate of technical substitution, isocost line and firm's equilibrium

Types of production functions- Cobb-Douglas, fixed-coefficient and CES functions, Cost structure- implicit cost, explicit cost, accounting cost, sunk cost, economic cost, fixed cost, variable cost, total, average and marginal cost. Determinants of short run cost, cost curves, cost minimization and expansion path, short versus long run cost curves, economies of scale.

Reference list

Suggested Readings:

1. Hal Varian. *Intermediate Microeconomics*, 3rd edition, W. W. Norton and Company, 1993.
2. Hugh Gravelle and Ray Rees. *Microeconomics*, Prentice Hall (UK); 3rd edition, 2004.

Macroeconomic Analysis 1

1. National Income Accounting- Macroeconomic data- Basic concepts of National Income accounting. The circular flow. Concepts of GNP, GDP, NNP, and NDP at market price and at factor cost. The measurement of National Income-Value Added Method and Expenditure Method. The problem of double counting. The role of Government. Concepts of Corporate Income, Corporate Savings, Personal Income, Personal Disposable Income and Personal Savings.

Saving-Investment gap and its relation with budget deficit and trade surplus. National Income accounting and cost of living. Basic idea of India's national income.

2. Income Determination in the Short Run (Part-1) Simple Keynesian Model in Closed Economy- The Simple Keynesian Model (SKM) in a Closed Economy without Government- the Keynesian Consumption Function; the Keynesian Saving Function; income determination in SKM; stability of equilibrium; the concept of effective demand- the concept of demand-determined output ; the Simple Keynesian Multiplier; the paradox of thrift; the SKM in a Closed Economy with Government; government expenditure and tax; the government expenditure multiplier and the tax rate multiplier; the balanced budget multiplier; the budget surplus; effects of tax changes and government purchases on budget surplus; the full employment budget surplus.

3. Income Determination in the Short Run (Part-II) : The Simple Keynesian Model in a Closed Economy, IS-LM Model- The Simple Keynesian Model (SKM) in a Closed Economy without Government- the Keynesian Consumption Function; the Keynesian Saving Function; income determination in SKM; stability of equilibrium; the concept of effective demand- the concept of demand-determined output ; the Simple Keynesian Multiplier; the paradox of thrift; the SKM in a Closed Economy with Government; government expenditure and tax; the government expenditure multiplier and the tax rate multiplier; the balanced budget multiplier; the budget surplus; effects of tax changes and government purchases on budget surplus; the full employment budget surplus.

4. The Classical system- Basic ideas of Classical Macroeconomics; Say's Law and Quantity Theory of Money, Loanable fund theory; the Classical Theory of Income and Employment determination; full Employment and wage-price flexibility; Classical Dichotomy and Neutrality of Money.

5. Complete Keynesian System

- Derivation of Aggregate Demand Curve assuming price-flexibility;
- Derivation of Aggregate Supply Curve, both in the presence and absence of wage-rigidity;
- Equilibrium. Stability and Comparative-statics, especially effects of monetary and fiscal policies; Underemployment and its causes - possible solutions, including real balance effect, wage cut policy- Inflation and Unemployment trade-off - short-run and long-run Phillips curve.

5. Kalecki – Cost, mark-up pricing and degree of monopoly.

Suggested Readings:

1. J. B. Hall and R. E. Taylor. *Macroeconomics*, W.W. Norton & Company; 5Rev Ed Edition, 1997.
2. R. Dornbusch and S. Fischer. *Macroeconomics*, 5th Edition, McGraw Hill Publishing Company, 1990.
3. N. G. Mankiw. *Macroeconomics*, Worth Publishers; 5th edition, 2002.
4. R. T. Froyen. *Macroeconomics-Theories and Policies*, Prentice Hall; 9th Edition, 2008.

5. W. H. Branson. *Macroeconomics*, Harper & Row INC USA, Indian Edition, 1995.
6. Andrew Abel and Ben Bernanke, *Macroeconomics*, Prentice Hall; 6th Edition, 2007.
7. M. Kalecki. *Selected Essays Selected Essays on the Dynamics of the Capitalist Economy*, 1933–1970, CUP, 1971.
8. M. Kalecki. *Selected Essays on the Economic Growth of the Socialist and the Mixed Economy*, CUP, 1972.

Statistics I

1. Introduction and Overview –

The distinction between population and sample Representation of data- graphical (line diagram, bar diagram, pie chart) and tabular method; Frequency Distribution.

2. Descriptive Statistics- Measures of central tendency (arithmetic mean, geometric mean, harmonic mean, median and mode, and their properties, Quartiles, Deciles and Percentiles). Dispersion(range, quartile deviation, mean deviation, standard deviation, coefficient of variation, coefficient of mean deviation, coefficient of quartile deviation, Lorenz curve and Gini coefficient); Moments, Skewness and Kurtosis (definition, computation) ; Correlation and Regression (definition, computation, properties).

7. Bivariate Frequency Distribution-Simple and multiple correlation and regression.

8. ANOVA Tables.

9. Time Series – components, measurement of trend and statistical fluctuations.

10. Index Numbers – Price, quantity.

11. Vital Statistics – measures of crude birth rate, death rate, age sex specific birth and death rates; infant mortality rate; construction and use of life table.

Suggested Readings:

1. J. F. Kenney and E. S. Keeping. *Mathematical Statistics: Part 1 & Part II*, Chapman and Hall, New York, 1954.
2. F. E. Croxton, D. J. Cowden and S. Klein. *Applied Statistics*, Prentice Hall; *Applied General Statistics*. 3rd ed., Prentice-Hall, Inc., 1960.
3. R.G.Hogg and A.T.Craig. *Introduction to Mathematical Statistics*, Prentice Hall; 6th Edition, 2004

4. A. M. Goon, M. K. Gupta and B. Dasgupta. *Fundamentals of Statistics*, The World Press, 1996

Mathematics for Economics I

1. Logic: Propositions and truth values; Tautologies and Contradictions; Deduction and Induction (**4 lectures**)

2. Set Theory: Definition of a set and discussion of related concepts; Set types; Operations on sets; Nested sets; Cartesian product; Concept of Euclidean Space (**8 lectures**)

3. Functions and Correspondences: Definitions; Concepts of ‘range’, ‘domain’ and ‘mapping’; Explicit and implicit functions; Types of functions and correspondences (polynomial, exponential, logarithmic, power etc) (**4 lectures**)

4. Brief Review of Differential and Integral Calculus: Discussion of concepts of ‘limits and continuity’, ‘derivative’, ‘partial derivative’, ‘total differential’ and ‘integral’ (stress on both intuitive and mathematical understanding); Applications of differential and integral calculus to the study of functions: slope and curvature of functions, distinction between concave and convex functions; maxima and minima, area under a curve etc (**6 lectures**)

5. Mean value theorems of Derivative; Polynomial approximation of functions; Taylor’s formula with remainder. (3 Lectures)

6. Other Topics: Permutations and Combinations; Various types of series (arithmetic, geometric, logarithmic, exponential, Taylor’s; linearisation of non linear series and McLaurin’s); Brief review of trigonometric functions and associated curves (**7 lectures**)

7. Euclidian Space: Vectors, Points, Distance formula, Algebra of Vectors, Lines and Planes (**3 Lectures**)

8. System of simultaneous linear equations and matrix algebra including addition, subtraction multiplication, laws of matrix algebra, transpose, square matrices, the determinant of a matrix, properties of determinants, cofactors, Cramer’s rule. (7 lectures)

References

1. Apostol T.M. *Calculus, Volume I, One-variable calculus, with an introduction to linear algebra*, (1967) Wiley, ISBN 0-536-00005-0, ISBN 978-0-471-00005-1.

Resource and Environmental Economics

1. Introduction – Elementary Capital Theory- The maximum Principle of optimal control Theory.

2. Renewable Resource- Concept of population growth curve- logistic growth-fishery as renewable resource- sole ownership fishery- monopoly fishery- fishery in common fishing ground-strategic fishing.
3. Forestry- optimal rotation period- socially optimum rotation period when forestry has environmental amenities- forest policies.
4. Non-renewable resource- optimal depletion- competitive, monopoly and oligopolistic exploitation of exhaustible resource- fringe and cartel - exploration–taxation of exhaustible resource- scarcity.
5. Common property resource-externalities in common property resource extraction market equilibrium vs. efficiency – measures to correct externality- privatization, quota-licence-taxation, community management of common property resources
6. Sustainable development-concept of Solow-Hartwick rule-natural resource accounting.

Suggested Readings:

1. N. Hanley, J. Shogren and Ben White. *Environmental Economics-In Theory and Practice*, Palgrave Macmillan, 2007.
2. A. C. Chiang. *Elements of Dynamic Optimisation*, Waveland Pr Inc, 1999.
3. J. M. Conrad and C. W. Clark. *Natural Resource Economics*, Cambridge University Press, 1987.
4. P. S. Heal and G. M. Dasgupta, *Economic theory and Exhaustible Resource*, Cambridge University Press, 1979.
5. N. Hanley, J.F. Shrogen and J. M. Hartwick. *Intergenerational Equity and Investing Rents from Exhaustible Resource*, AER, Vol. 67 no.5, 1977.
6. Elinor Ostrom. *Governing the Commons: The Evaluation of Institutions for Collective Actions*, Cambridge University Press, Cambridge, 1990.
7. Tom Tietenberg and Lynn Lewis. *Environmental and Natural Resource Economics*, 8th Edition, Pearson, 2008.

FIRST YEAR SEMESTER II

Microeconomics II

- 1. The Firm and Perfect Market Structure-** Organization, Firms and Profit Maximization; Marginal Revenue, Marginal Cost and Profit Maximization.

Perfect competition- short run competitive equilibrium of the firm, short run supply curve of firm and industry, Output choice and competitive equilibrium in long run, Economic rent and profit, long-run industry supply- constant, increasing and decreasing cost.

Consumer and Producer surplus, welfare and efficiency of competitive equilibrium. Government intervention and dead weight loss, Application- Minimum prices and price supports (price ceiling).

2. Input Market in Perfect Competition

Basic concepts- derived demand, productivity of an input, marginal product of an input, marginal revenue product; Marginal productivity theory of distribution; Labor market-supply of labor, competitive labor markets; Land markets and rent.

2. Monopoly (16)

Origin of monopoly; Monopoly pricing and efficiency of equilibrium; Price discrimination; Upstream and downstream monopoly: vertical integration, transfer pricing; Durable goods monopoly: lease vs. sale, pricing over time; Tying: pure and mixed; Advertising; Anti-trust and regulation.

3. Monopolistic competition (4)

Chamberlianian competition; Sweezy and Kinked demand curve analysis; Dominant firm with a competitive fringe.

4. Oligopoly and Strategic Behaviour of Firms (16)

- a) Non-cooperative static games – Solution concepts: iterated elimination of strictly dominated strategies; pure and mixed strategy Nash equilibrium.
- b) Non-cooperative dynamic games of complete information – Games of perfect and imperfect information; Solution concepts: backward induction outcome, Sub-game Perfect Nash Equilibrium; Repeated games and Folk Theorem.
- c) Oligopoly theories – Cournot and Bertrand models as games of quantity and price competition; Quantity and price leadership models; Repeated games and collusion.
- d) Analysis of entry deterrence

5. Monopsony (4)

Suggested Readings:

1. Oz Shy. *Industrial Organization: Theory and Applications*, MIT Press, 1995.
3. Robert Pindyck and Daniel Rubinfeld. *Microeconomics*, Prentice Hall/Pearson, 2009.
4. Hal Varian. *Microeconomic Analysis*, W. W. Norton and Company, 2013.
5. Louis Cabral. *Introduction to Industrial Organization*, MIT Press, 2002.
6. Jean Tirole. *Theory of Industrial Organization*, MIT Press, 1988
7. C. Ferguson and J. Gould. *Microeconomics*, AITBS, 2000
8. Robert Gibbons. *A Primer in Game Theory*, Princeton University Press, 1992.

9. Martin Osborne. *Introduction to Game Theory*, Oxford University Press, 2003.
10. Prajit K. Dutta. *Strategies and Game: Theory and Practice*, MIT Press, 1999.
11. C. D. Aliprantis and S. K. Chakrabarti. *Games and Decision-Making*, Oxford University Press, 1998.
12. Erik Rasmusen. *Games and Information: An Introduction to Game Theory*, Basil Blackwell, 1999.
13. Massimo Motta. *Competition Policy: Theory and Practice*, Cambridge University Press, 2004.

Macroeconomics II

- 1. Keynes vs. Classics** • Keynesian vs classical system. • Hybrid models under Classical/Keynesian framework. • Friedman's restatement of classical ideas
- 2. Patinkin's Rehabilitation of the Classical System (4 Lectures)**
 - The basic model of disequilibrium. Neutrality of money with inside and outside money
- 3. Neo-classical Macroeconomics (4 lectures)**
 - Isolated barter economy and inter-temporal choice
 - Basic Market-clearing Model
- 4. Consumption Function (5 lectures)**
 - Inter-temporal consumption choice (including inter-temporal Walras Law), Friedman's Permanent Income Hypothesis, Duesenberry's Relative Income Hypothesis and Ando-Modigliani's Life-cycle hypothesis.
- 5. Investment Function (5 lectures)**
 - MEC and MEI
 - Jorgenson's neo-classical theory
 - Acceleration principle- fixed and variable, comparison with Jorgenson
- 6. Demand for Money (4 lectures)**
 - Regressive expectations and Tobin's Portfolio Choice models, Baumol's inventory theoretic money demand
- 7. Money multiplier analysis and monetary policy (8 lectures)**
 - High powered money, Money multiplier analysis
 - Monetary policy- OMO, Bank rate, variable reserve ratio, repo and reverse repo
- 8. Economic Growth (5 lectures)**

- One sector models of Harrod, Domar, Solow - Equilibrium and Stability (without technological change) , Cambridge models of growth – Kaldor and Pasinetti.

Suggested Readings:

1. D. Patinkin. *Money, Interest and Prices: An Integration of Monetary and Value Theory*, 2nd Edition, Abridged, The MIT Press; 2nd Edition, 1989.
2. R. Barro. *Macroeconomics*, The MIT Press; 5th Edition (1997)
3. W. H. Branson. *Macroeconomics*, Harper and Row, 3rd Edition, 1989.
4. A.K. Sen (ed). *Growth Economics*, Penguin, 1970.
5. Andrew Abel and Ben Bernanke. *Macroeconomics*, Prentice Hall; 6th Edition, 2007.
6. J. B. Hall and R. E. Taylor. *Macroeconomics*, W.W. Norton & Company; 5Rev Ed Edition, 1997.
7. Errol D'Souza. *Macroeconomics*, Pearson Education (New Delhi), 2009.

Statistics II

1. Probability and Distribution (11 lectures)

- (a) Introduction to probability theory
- (b) Probability measure/ Probability set function.
- (c) Probability Space.
- (d) Conditional probability and independence, Bayes Theorem.
- (e) Random variables: discrete and continuous types.
- (f) Properties of distribution functions, mass functions and density functions.
- (g) Expectation of a random variable
- (h) Transformations of variables: discrete and continuous types.
- (i) Extensions of the change of variable techniques.
- (j) Expectations of functions of random variable. Some special expectations : moment generating function
- (k) Convergence in Probability) Expectation of a random variable

2. Multivariate Distributions (6 lectures)

- (a) Distribution of two random variables.
- (b) Continuous distributions and Expectations.
- (c) The correlation coefficient.
- (d) Independent random variables.
- (e) Extension to several random variables.

3. Some Special Distributions: (12 lectures)

- (a) Uniform distribution, Binomial and related Distributions; Poisson, Normal and Bivariate Normal, Beta, Chi-Square, t and F
- (b) Convergence in Distribution.
- (c) Limiting Distributions: Central Limit Theorem

4. Distributions of Functions of Random Variables (5 lectures)

- (a) Sampling Theory.

(b) Distributions of sample mean and sample variance.

5. Introduction to Statistical Inference (11 lectures)

(a) Point Estimation.

(b) Confidence Intervals for means.

(c) Confidence Interval for difference of means

(d) Test of statistical hypothesis, Z test, t test, Chi-square test, F test

(f) Anova

(g) Some non-parametric test: test for Goodness of fit, test of independence, test of Homogeneity

Suggested Readings:

1. J.E. Freund. *Mathematical Statistics with Applications*, 7th edition, Pearson Prentice Hall, 2004.

2. Irwin Miller and M. Miller. *Probability and Statistics*, Prentice Hall, 2003.

3. F. Kenney and E. S. Keeping. *Mathematical Statistics: Part 1 & Part II*, Chapman and Hall, New York, 1954.

Mathematical Economics I

1. One variable calculus and its application in Economics (10 lectures)

a) Definition of real number

b) Functions: Types, domain, limit, continuity, derivatives; Relative Maxima and Minima, Concavity, Convexity, Global Maxima and Minima; Horizontal Asymptotes; Graphing a Rational function; Chain rule; Inverse functions and their derivatives.

c) Application to Economics: Production function – Different types: Cost functions; Revenue functions; Profit; Demand functions and elasticity

2. Calculus of several variables Static Optimization and its application (23 lectures)

a) Sequence of real numbers: definition, limit

b) Open Set; Closed Set; Compact Set

c) Functions of several variables with examples

d) Graphs of Function level curves: indifference curve, isoquants, implicit function

e) Quadratic forms and polynomials

f) Continuous functions

g) Partial derivatives, total derivatives, marginal Product, marginal utility—slope of a level curve

h) Higher order derivatives: Concavity and Convexity of functions; Quadratic forms and definiteness

i) Unconstrained optimization and its application: First and second order conditions; Global maxima and minima; Profit maximization of a firm; Monopoly—Price discriminating monopoly

j) Constraint Optimization Concepts: Properties of Feasible set, convex set, quasi concave functions, definition and derivative property, uniqueness of solutions

- k) Optimization with single equality constraint: Lagrange Function, second order condition, application in consumer and production theory;
- l) Optimization with several equality constraint: Second order condition, bordered hessian condition, application—work leisure choice
- m) Meaning of Lagrange multiplier: Value Functions
- n) Optimization with inequality Constraint: Introduction to non-negativity constraints, complementary slackness conditions, shadow prices, Kuhn-Tucker Conditions, Arrow Enthoven sufficiency condition
- o) Envelope Theorem

3. Homogenous and Homothetic functions (2 lectures)

4. Duality in consumer theory and production (10 lectures)

Properties of expenditure function, indirect utility function, Shepherd's Lemma; Roy's Identity; Slutsky equation and decomposition of price effect; Properties of cost functions

References

1. Lawrence Blume and Carl Simon. *Mathematics for Economists*, W. W. Norton and Company, 1994.
2. Sydsaeter Knut and Peter J. Hammond. *Mathematics for Economic Analysis*, PHI, 1995
3. Alpha Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Fourth Edition, McGraw-Hill, 2005.

Business Accounting

1. Financial Accounting-

- a. definition and scope, objectives of financial accounting, accounting vs book keeping, terms used in accounting.
- b. users of accounting information and limitations of financial accounting.
- c. brief overview of accounting cycle-introduction to balance sheet and income statement.

2. Conceptual Framework:

- a. accounting concepts, principles and conventions.
- b. accounting standards-concept, objectives, benefits, brief review of accounting standards in india.
- c. accounting policies, accounting as a measurement discipline, valuation principles, accounting estimates.

3. Accounting for fixed assets:

a. Introduction-valuation of fixed assets-principles and norms of standard accounting treatment.

b. Depreciation-methods-accounting-importance.

c. revenue recognition- introduction-definitions-sale of goods-rendering of services-the use by others of enterprise resources yielding interest.

d. Royalties and dividends-effect of uncertainties on revenue recognition-accounting standard.

4. Preparation of final accounts-

a. preparation of trading and profit and loss account and balance sheet of sole proprietary business.

b. introduction to company final accounts: important provisions of companies act, 1956 in respect of preparation of final accounts, understanding of final accounts of a company.

5. Computerized accounting- computers and financial application.

References

1. Fundamentals of accounting and financial analysis: by Anil chowdhury (Pearson education).
2. Financial accounting: by Jane Reimers (Pearson education).
3. Accounting made easy by Rajesh Agarwal and R. Srinivasan (Tata Mcgraw-Hill)

Second Year Semester III

Econometrics I

1. The two-variable linear regression model: least-squares estimators of the regression parameters, the properties of the estimators, testing of hypothesis. **(15 lectures)**

2. Introduction to two variable non-linear relationship. **(2 lectures)**

3. Violation of assumptions and simple least-squares methods in two variable linear regression models: autocorrelation, heteroscedasticity, test of autocorrelation and heteroscedasticity. **(8 lectures)**

4. K-variable model- multicollinearity problem, consequences and testing. **(6 lectures)**

5. Dummy variables, dummy variable for changes in intercept term, slope coefficient, dummy variable trap, dummy variables for testing in the regression coefficient. **(7 lectures)**

6. Introduction to Logit and Probit Models. **(5 lectures)**

Suggested Readings

1. G.S.Maddala. *Introduction to Econometrics*, John Wiley & Sons Ltd, 2009.
2. Jack Jhonston. *Econometric Methods*, 3rd Edition
3. Jan Kmenta. *Elements of Econometrics*, Macmillan Publishing Company, 1991.
4. D. Gujarati. *Basic Econometrics*, McGraw Hill Higher Education, 2003
5. William H. Green, *Econometric Analysis*, 7th Edition, Prentice Hall, 2011.

Mathematical Economics II

1. Linear Programming Problem: (8 lectures)

Basic concepts and solution methods; geometrical Solution and solution using simplex method; Duality theorem.

2. Simultaneous Equation Systems: algebraic and geometric exposition (9 lectures)

Linear and non-linear simultaneous systems. Application in Economics SKM, IS-LM Model Leontief Input Output Model; Simple non-linear small open economy trade models

3. Eigen values and Eigen vectors—definition Characteristics equations its roots (4 lectures)

4. Linear difference equation (12 lectures)

- a) First order non-homogenous linear difference equation: solution concepts, dynamic stability, Cobweb Model, market model with inventory, stability in S.K.M and ISLM model
- b) Nonlinear difference equation time path and phase diagram
- c) Second Order non-homogenous linear difference equation: solution concepts, Multiplier-Accelerator interaction models of Samuelson and Hicks and trade cycles, Inflation and unemployment model.
- d) System of difference equations

5. Linear Differential Equations (12 lectures)

- a) First order linear differential equation: Solution concepts; Solow growth model
- b) Linear second order differential equation: Solution; Real and unreal roots of characteristic equation; existence of solution; Graphs; Phase diagram; A market model with price expectation; Inflation and unemployment interaction
- c) System of linear differential equations: Solution concepts; Eigen values; Steady state and stability; Phase diagram.
- d) Dynamics of national debt, dynamics of the IS-LM model
- e) Non-linear systems of differential equations: Equilibrium of an autonomous system;

Lyapounov stability; The system of a linear approximation.

References

1. Lawrence Blume and Carl Simon. *Mathematics for Economists*, W. W. Norton and Company, 1994.
2. Sydsaeter Knut and Peter J. Hammond. *Mathematics for Economic Analysis*, PHI, 1995
3. Alpha Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Fourth Edition, McGraw-Hill, 2005.
4. J.R.Hicks. *A Contribution to Theory of Trade Cycle*, Oxford University Press, New York, 1951.

Development Economics

Development and underdevelopment:

- 1.1 Colonial Pattern of trade and De-industrialisation- division of world between centre and periphery; export enclaves **(4 lectures)**
- 1.2 Underdevelopment as a low level equilibrium in a multiple equilibrium situation –low level equilibrium trap (arguments offered by Nurkse, Rosenstein-Rodan and formalized by Murphy. Shleifer & Vishny) **(4 lectures)**

2. Marco characteristics of underdeveloped economics:

2.1 Dual economics structure, open and disguised unemployment and migration: Lewis Model extension;

Ranis-Fei-Harris-Todaro model of rural-urban migration and their critiques. **(5 lectures)**

2.2 Informational Asymmetries and market failure: credit market, land market, labour market consequent

existence of interlinkage. **(10 lectures)**

2.3 Poverty: Conceptual Issues-Measurement –Functional Effects **(5 lectures)**

2.4 Inequality: Conceptual Issue and Measurement Issues (Kuznets` inverted-U hypothesis: testing and explanation, inequality as a constraint to growth-basics of Galore-Zeira model. **(5 lectures)**

2.5 Issues involved in measurement: conceptual issues about the relationship between growth and development-Human development index, its alternative forms and critique. **(5 lectures)**

3. Strategies of Development:

Stages of Economic growth: Rostow-Vicious circle of poverty and the critical minimum effort hypothesis; Big push argument targeting the big push-balanced vs. unbalanced growth; Choice of technique and investment criteria. **(6 lectures)**

Suggested Readings:

1. Kaushik Basu. *Analytical Development Economics: The Less Developed Economy Revisited*, OUP, 2000.
2. A. P. Thirlwal, *Growth and Development*, 5th Edition, MacMillan Press Ltd, 1994.
3. W.Arthur Lewis. *Economic Development with Unlimited supply of Labour* in A. N. Agarwal and S. P. Singh (ed.) *Economics of Underdevelopment*. Oxford University Press, 1986.
4. Debraj Roy. *Development Economics*, Oxford University Press, 1999.
5. M.P Todaro. *Economic Development in the Third World*, London: Longman, 1981.

6. World Bank. *World Development Report*, Selected Years.
7. A.K Bagchi. *The Political Economy of Underdevelopment*, Cambridge University Press, 1982.

Applied Economics-I

This course will be different from other courses as it visualises a fully computer lab based teaching course. This course also provides a basic idea of how problem can be formulated, how to take up a research project and also the steps that need to follow in any primary data based research study. This course is so sequenced that students will be able to apply the knowledge on Statistical and Econometric methods that they have already gathered in their earlier semesters. This course design aims at providing students with necessary skill to handle Statistical and Econometric packages using data sets and computer facilities of the Computer Laboratory of the Department. The students are expected to acquire enough competence in handling application of computer packages so that they can use that knowledge in their group research Project Work in semester 6.

A. Essential Steps in Primary Data Collection (12 Lectures)

Problem selection, Testing of hypothesis and Inference, sample design, designing of questionnaire pre-testing of questionnaire for collection of primary data, introduction to secondary data sources.

B. Application of Statistics (14 Lectures)

Estimation of descriptive statistics: mean, median, mode, measures of dispersion, skewness and kurtosis, simple correlation; rank correlation. Graphical representation of data sets: pie chart, bar chart, linear and nonlinear curve fitting; Introduction to probability theory, random sampling using random number table, ANOVA based Tests.

C. Application of Econometrics (19 Lectures)

Linear regression model and test for linear restriction on parameters test of heteroscedasticity, autocorrelation, multicollinearity, application of dummy variable models; Simple models with limited dependent variable; Examples from economic behaviours.

Suggested Readings:

1. G. Maddala. *Introduction to Econometrics*, Willey, 2002.
2. G. Hadley. *Linear Programming*, Addison-Wesley Pub Co., 1962.
3. W. G. Cochran. *Sampling Techniques*, Wiley; 3rd Edition, 1977.
4. J.W. Wooldridge. *Introduction to Econometrics*, South-Western Division of Thomson Learning; International Ed edition, 2005.
5. J. F. Kenney and E. S. Keeping. *Mathematics of Statistics*, Part I & II, D. Van Nostrand Company Inc; 2nd Edition, 1951.
6. F. E. Croxton, D. J. Cowden and S. Klien. *Applied General Statistics*, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1967.

Second Year Semester IV

International Trade I

Total Number of Lectures: 45 lectures + Tutorials + Problems

1. Basis of Trade (5)

Arbitrage and inter-industry trade; Absolute and comparative advantages; Different sources of comparative advantage; Regulation of externalities; Perverse comparative advantage; Basis of intra-industry trade.

2. Gains from Trade (GFT) (5)

GFT theorem. Equilibrium in an open economy and gains from trade (in terms of production possibility curve and community indifference curve): Convexity and tangency conditions (market structure & technology): GFT in commodity-endowment model and in factor endowment model.

3. International equilibrium (4)

Offer curves: derivation; properties, related elasticities; Equilibrium TOT and welfare property in terms of trade-indifference curves; Walrasian static stability and Marshall-Lerner condition.

4. Neoclassical Trade Models (14)

(a) Technology & Trade: Ricardian model (4)

(Role of demand; double-factoralToT; many-country model)

(b) Factor endowment& trade:

Heckscher-Ohlin Samuelson model (10) (Condition for incomplete specialization; Rybczynski effect and HO theorem under physical definition; demand-bias and Leontief paradox; linear homogeneity and the one-to one correspondence; Stolper-Samuelson effect in 2x2 case and HoS theorem under price definition; FPE theorem and sources of its disruption: Non- traded good. Factor immobility, factor intensity reversal. Complete specialization, Immiserizing growth.)

5. Theory of Trade Restriction: (10)

(a) Price interventions (tariff and export subsidies): dead-weight losses of tariff under partial equilibrium; General equilibrium analysis of tariff: TOT effect and Lerner Case; welfare effect and optimum tariff; tariff retaliation; tariff and protection (infant industry argument; effective rate of protection in a small economy; domestic price effect and Metzler Paradox in a large country); TOT deterioration and welfare loss under export subsidy; Lerner's Symmetry.

(b) Quantitative Restrictions (Import quota and VER): Scarcity rent and dead-weight losses, TOT effect and welfare under import quota; price equivalence between tariff and import-quota; effects of VER in the exporting country; equivalence of economic effects under import quota and VER for the importing country.

6. Domestic Monopoly and Trade Policy (4)

Gains from trade in presence of domestic monopoly; non-equivalence of tariff and import quota; international price discrimination and dumping under trade protection.

7. Introduction to Trade and Growth (3)

Trade and growth linkage in HOS model; import-biased versus export-biased growth; export-led growth, TOT and welfare (Bhagwati's immiserizing growth hypothesis)

Suggested Readings:

1. R. E. Caves, J. A. Frankel and R. W. Jones. World Trade and Payments: An Introduction, Pearson Education, 2007.
2. J. Bhagwati, A. Panagariya and T.N. Srinivasan, Lectures on International Trade, MIT Press, 1998.
3. P. Krugman and M. Obstfeld. International Economics; Theory and Policy, Pearson Education, 6th Edition, 2004.
4. R. Acharyya, International Economics: An Introduction to Theory and Policy, Oxford University Press, Delhi, 2014.

Econometrics II

System of Equations

A. Linear Models

1. Introduction to system of equation (4 lectures)

- (a) Seemingly Unrelated Regression Equation Model
- (b) Panel Model

2. Simultaneous Equation Model

- (a) Single equation Method of estimation : Indirect least square estimator(ILS), two stage least square estimator (2SLS), Instrumental variable estimator(IV)

3. Panel Data Analysis: Introduction to static Panel Model (4 lectures)

4. An introduction to time series data: Structure of time series AR, ARMA, MA, ARIMA, identification of series –Box Jenkins approach, Concept of stationarity, distinction between Trend stationary process and Difference stationary process, unit

root test, co integration and error correction, Engle Granger Methodology.

B. Non Linear Models

1. Full information maximum likelihood method of estimation
2. Generalized Method of Moments for System of Equations.

Suggested Readings:

1. J.W. Wooldridge. *Econometric Analysis of Cross section and Panel Data*, MIT Press, 2010.
2. A. Collin Cameron and P.K.Trevedi. *Micro Econometric Methods and Applications*, Cambridge University Press, 2005.
3. W. H. Green. *Econometric Analysis*, Pearson Education, 2003.
4. W. Enders. *Applied Time Series Econometrics*, Wiley, 2004.

Research Methodology

1. Methodological Issues I

- i. Locating the basic issues- theme based literature survey and motivation behind any study objectives of the study-development of writing skills.
- ii. Designing the sampling frame in case of field survey- the role of pilot survey.
- iii. The role of random numbers in drawing random sample.
- iv. Methods behind preparation of questionnaire in case of field survey.
- v. Data entry after field survey.
- vi. Tabular representation of data and graphs for data interpretation.

2. Methodological Issues II

- i. Theoretical and Empirical Research in Economics
- ii. Common sections of an ideal research paper in Economics
- iii. Illustrations of empirical research work. Reporting the regression results and interpretation of the results: the role of statistical inference. [The course instructor should focus on framing the testable hypothesis and the role of statistical inference in empirical research]
- iv. Illustrations of theoretical research: specification of the model, closing the model, checking stability of the model for meaningful comparative static results. [The course instructor should focus on the role of stability analysis in theoretical models by showing the method of linearizing non-linear differential equations. Illustrations can be made from IS-LM model by using trace and determinant conditions of the Jacobian matrix-the role of phase diagrams].
- v. Role of footnotes or end notes in a research paper.
- vi. Bibliography, reference and citation.
- vii. Writing the abstract of a research paper.
- viii. Key words and JEL Classification.
- ix. Presentation of a research paper through power point. Basic rules to be followed for a good presentation. Role of diagrams, graphs, pictures and charts.

Suggested Readings

1. Goon, A. M, Gupta, M. K, and Dasgupta, B. Fundamentals of Statistics (Volumes One and Two), The World Press Private Ltd
2. C.R. Kothari : Research Methodology : Methods and Techniques (second revised edition), New Age India (P) Ltd Publishers.
3. Alpha C. Chiang and Kavin Wainwright : Fundamental Methods of Mathematical Economics, McGraw Hill, 2005.[For stability analysis]

Third Year Semester V

International Trade II: Theory of Balance of Payments and Exchange Rate

1. Balance of Payments: Concepts and Accounting

- (i) Current Account (balance of visible and invisible trade) and Capital Account (balance of short-term and long-term asset transactions); Concept of balance of payments equilibrium: ex ante and ex post – concepts of accommodating and autonomous transactions and movements of monetary instruments.
- (ii) National Income Accounting in an Open Economy: Relationship between current account surplus and the rate at which the economy is adding to its net external assets and the accounting relationship of deficit in current account with savings-investment gap and government budget deficit or surplus.

2. Exchange Rate: Concepts

Price Quotation System (PQS) and Value Quotation System (VQS) definition of bilateral nominal and real exchange rate . Extension to multilateral trade-concepts of nominal and real effective exchange rate index (NEER and REER). Concept of Purchasing Power Parity (PPP), exchange rate and its use for international comparison of macro variables.

3. Foreign Exchange Market

Concepts of spot market –demand for foreign exchange and supply of foreign exchange and their connection with debit entry and credit entry of balance of payment. Spot market exchange rate determination: partial equilibrium approach-Marshall Lerner condition- Jcurve. Concept of forward market; concepts of ‘open’, ‘short’, ‘long’ positions and ‘hedging’ and the usefulness of forward market. Hedging and Covered Interest Arbitrage Forward Exchange Rate-neutrality condition for international money flow.

4. Open economy Macroeconomics

Open economy simple (abstraction from monetary complication and international asset transactions) fix-price model of a small country with exogenous export demand and endogenous import demand-export multiplier –extension of this model for a large

country-interaction of the income expenditure process of home country with that of the rest of the world-foreign repercussion. Introduction of various degrees of capital flows under fixed and flexible exchange rate systems and examination of the effectiveness of fiscal and monetary policies-Dutch disease, sterilization and stagflation- Alexander's critique and macroeconomic absorption. Flex Price Model: Laursen-Metzler Synthesis of 29

Elasticity Approach and Absorption Approach. Conflict between internal and external balance (Swan diagram)

5. International Money

Concept of international money and liquidity under various monetary systems- ancient and modern gold and silver standard –gold and silver parity- partial endogeneity of money supply in an 'outside' money economy. Bretton Woods system-gold parity of dollar and dollar parity of other currencies-introduction of SDR as accounting money and medium of exchange for government to government transactions-emergence of dollar as international reserve currency and the currency of intervention – Triffin Dilemma and the problem of Seigniorage-breakdown of Bretton Woods system. Emergence of crypto currency-Bitcoin as medium of private international transaction vis-a-vis SDR.

6. India's BOP and Exchange Rate Policy

(a) India's current account and capital account scenario (including FOREX reserves) since the 1950s with special reference to the changes in the mid-1970s (marked by the rise of OPEC) and the mid-1980s (the start of liberalisation), the 1991 crisis and current developments.

(b) Current scenario of managed float and market determined exchange rate (flexible exchange rate regime) of India and other countries (including LERMS, Target zone etc.)

Suggested Readings:

1. R. E. Caves, J. A. Frankel and R. W. Jones. World Trade and Payments: An Introduction, Pearson Education, 2007.
2. Rudiger Dornbusch. Open Economy Macroeconomics, Basic Books, 1980.
3. P. Krugman and M. Obstfeld. International Economics; Theory and Policy, Pearson Education, 6th Edition, 2004.
4. Giancarlo Gandolfo. International Economics, Springer Link, 2004.
5. Francisco L. Rivera-Batiz and Luis A. Rivera-Batiz, International Finance and Open Economy Macroeconomics, 2nd Edition, 1994.

India in the global Economy

1. Economic Development since Independence

• Growth and development under different policy regimes (from planning to market based development) - Objectives, achievements and failures of Planning [4 lecture hours] - Economic

crisis during the late 1980s [3 lecture hours] Page 34 of 75 - Economic Reforms –Critical Analysis [3 lecture hours] • Structural changes in the post-reforms period [5 lecture hours] • Regional variation of growth and development [5 lecture hours]

2. Population and Human Development • Demographic trends and issues [6 lecture hours] • Education and health: Basic problems and Government measures, Right to Education (RTE) Act 2009 [9 lecture hours]

3. Growth and Distribution • Trends in GDP and per capita GDP [5 lecture hours] • Growth, poverty and inequality [5 lecture hours] • Youth unemployment (School Transition to Work) [5 lecture hours] • Policy perspectives in growth and distribution [5 lecture hours]

4. Economic Reforms • Banking sector reforms [5 lecture hours] • Reforms in tax policy [5 lecture hours] • Reforms in the external sector [5 lecture hours] • Reforms in Labour market [5 lecture hours]

References

- Jean Dreze and Amartya Sen, 2013. An Uncertain Glory: India and its Contradictions, Princeton University Press.
- Jean Dreze and Amartya Sen: Economic Development and social opportunity, OUP

Financial Economics

Topic 1: Introduction to Financial Economics: Finance and Financial Economics; Understanding Financial System involving Financial instruments, Financial Institutions and Financial Markets

Topic 2: Financial Statement: Balance Sheet. Cash Flow and Financial Statement, Ratio Analysis, From Accounting to Corporate Finance

Topic 3: Time value of money

- a. Time value of money and opportunity cost of capital
- b. Future Value of a cash flow : concepts of compounding
- c. Present value of a cash flow: concepts of discounting
- d. Valuing different types of cash flows
- e. Valuing level cash flows: different types of annuities & perpetuities
- f. Real versus nominal interest rate: Fisher's equation
- g. Introduction to risk.

Topic 4: Bond valuation

- a. Different types of interest rates: Call money rates, treasury bills rates, repo & reverse repo rates, bank rates
- b. Different types of bonds and their valuation techniques

- c. Bond ratings & rating agencies
- d. Concept of yield to maturity
- e. Measurement of volatility and duration
- f. Term structure of interest rate & determinants of term structure of interest rates

Topic 5: Valuation of stocks

- a. Dividend discount model
 - b. Free cash flow model
 - c. Growth stocks & income stocks
7. Financial derivatives
- a. Forward contract,
 - b. Futures contract,
 - c. options and
 - d. Swaps
 - e. Functioning of derivative markets (6)

Topic 6: Portfolio Theory: Systematic and Unsystematic risk, Portfolio diversification, Concept of Beta, Security Market Line & Capital Asset Pricing Model. Arbitrage Pricing Theory

Topic 7: Capital Budgeting: Net Present Value and Other Investment Criteria

Topic 8: Capital Structure: Capital Structure and Cost of Capital, Financial leverage. Modigliani & Miller Proposition I & II, Bankruptcy Costs & Optimal capital structure

References:

S,A . Ross, R.W Westerfield, B.D Jordan-Fundamentals of Corporate Finance, Tata McGraw Hill

R.A. Braeley and S.C.Myers - Principals of Corporate Finance

Law and Economics

I. Introduction Text: Chapter 1 Coase, Ronald (1960) “The Problem of Social Cost,” Journal of Law and Economics, Vol. 3, pp. 1-44.

II. Tort Law A. The Economic Model of Accidents Text: Chapter 2 Brown, John (1973) “Toward an Economic Theory of Liability,” Journal of Legal Studies, Vol. 2, pp. 323-349. Cooter, Robert (1985) “Unity in Torts, Contracts, and Property: The Model of Precaution,” California Law Review, Vol. 73, pp. 1-51. U.S. v. Carroll Towing Co., 159 F.2d 169, 2d Cir. (1947). B. Applying the Model of Accidents Text: Chapter 3 Landes, William and Richard Posner (1985) “A Positive Economic Theory of Products Liability,” Journal of Legal Studies, Vol. 14, pp. 535-567. MacPherson v. Buick, 217 N.Y. 382, 111 N.E. 1050 (1916).

III. Contract Law A. Defining a Valid Contract Text: Chapter 4 *Hamer v. Sidway*, 124 N.Y. 538, 27 N.E. 256, Court of Appeals of New York (1891). Posner, Richard (1977) "Gratuitous Promises in Economics and Law," *J. Legal Stud.*, Vol. 6, pp. 411-426. *Alaska Packers' Assn. v. Domenico*, 117 F. 99, 9th Cir. (1902). *Goebel v. Linn*, 47 Mich. 489, 11 N.W. 284 (1882). Hirshleifer, Jack (1971) "The Private and Social Value of Information and the Reward to Inventive Activity," *American Economic Review*, Vol.61, pp. 561- 574. Kronman, Anthony (1978) "Mistake, Disclosure, and Information," *J. Legal Stud.*, Vol. 7, pp. 1-34. *Sherwood v. Walker*, 66 Mich. 568, 33 N.W. 919, Mich. (1887). **B. Remedies for Breach of Contract Text:** Chapter 5 Shavell, Steven (1980) "Damage Measures for Breach of Contract," *Bell Journal of Economics*, Vol. 11, pp. 466-490. *Hadley v. Baxendale*, 9 Ex. 341, 156 Eng. Rep. 145 (1854). Posner, Richard and Andrew Rosenfield (1977) "Impossibility and Related Doctrines in Contract Law: An Economic Analysis," *J. Legal Stud.*, Vol. 6: 83- 118. Friedmann, Daniel (1989) "The Efficient Breach Fallacy," *J. Legal Stud.*, Vol. 18, pp. 1-24. *Peevyhouse v. Garland Coal & Mining Co.* , 382 P.2d 109, cert. denied, 375 U.S. 906, Okla. (1962).

IV. Property Law A. Property Rights and Consensual Exchange Text: Chapter 6 Demsetz, Harold (1967) "Toward a Theory of Property Rights," *American Economic Review*, Vol. 57, pp. 347-359. **B. Non-consensual Exchange and Regulation of Property Text:** Chapter 7 Calabresi, Guido, and A. Douglas Melamed (1972) "Property Rules, Liability Rules, and Inalienability: One View of the Cathedral," *Harvard Law Review*, Vol. 85: 1089-1128. *Boomer v. Atlantic Cement Company*, 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870, Court of Appeals of New York (1970). *Spur Industries v. Del E. Webb Development Co.*, 108 Ariz. 178, 494 P.2d 700 (1972). Miceli, Thomas J. and Kathleen Segerson (2007) *The Economics of Eminent Domain: Private Property, Public Use, and Just Compensation, Foundations and Trends in Microeconomics*, Vol. 3, Issue 4. *Mugler v. Kansas*, 123 U.S. 623 (1887). *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393 (1922). *Lucas v. South Carolina Coastal Council*, 112 S.Ct. 2886, 505 U.S. 1003 (1992). *Kelo v. New London*, 125 S.Ct. 2655, 545 U.S. 469 (2005).

V. The Economics of Crime and Law Enforcement Text: Chapter 8 Becker, Gary (1968) "Crime and Punishment: An Economics Analysis," *Journal of Political Economy*, Vol. 76, pp. 169-217. Stigler, George (1970) "The Optimum Enforcement of Laws," *Journal of Political Economy*, Vol. 78, pp. 526-536. *Schenk v. United States*, 249 U.S. 47 (1919).

VI. Legal Procedure and Dispute Resolution Text: Chapter 9 Cooter, Robert and Daniel L. Rubinfeld (1989) "Economic Analysis of Legal Disputes and Their Resolution," *Journal of Economic Literature*, Vol. 27, pp. 1067-1097. Rubin, Paul (1977) "Why is the Common Law Efficient?" *Journal of Legal Studies*, Vol. 6, pp. 51-63. Priest, George (1977) "The Common Law Process and the Selection of Efficient Rules," *Journal of Legal Studies*, Vol. 6, pp. 65-82.

VII. Antitrust Law Text: Chapter 10 Gilbert, Richard and Oliver Williamson (1998) "Antitrust Policy," in *The New Palgrave Dictionary of Economics and the Law*, P. Newman, ed., Vol. 1, pp. 82-88. *Standard Oil Co. v. United States*, 221 U.S. 1, (1911).

Third Year Sixth Semester

Indian Banking and Finance

1. **Indian Financial System** - An Overview
2. Overview of Banking & Structure of Banking in India
3. Role and Functions of Reserve Bank of India
4. Banks in India - Role and Functions
5. Changing Role of Banks
6. Banker - Customer Relationship
7. Types of Customers & Mode of Operation
8. Negotiable Instruments
9. Retail Banking Products - Deposits
10. Retail Banking Products - Loan
11. Foreign Exchange Business of Banks
12. Insurance
13. Mutual Funds
14. Recent Trends in Banking Regulation.

References

Managerial Behavior and Organizational Architecture

1. The Evolution of Organizational Behavior

Definition and history of organizational behavior, the relationship of the human relations movement to organizational behavior, ways to study behavior, positive organizational scholarship.

2. Management and Organizational Behavior

Tiers of management, management functions, skills needed by good managers

3. Foundations of Individual Behavior

Individual diversity, self-esteem, self-monitoring, Hofstede's Cultural Dimensions Theory

4. Personality and Behavior in Organizations

Definition of personality, how to use traits to predict behavior in the workplace, the Myers-Briggs Type Indicator, Type A and Type B personalities.

5. Emotions and Moods in the Workplace

Differences between mood and emotion, the role of emotion in the workplace, emotional intelligence.

6. Attitudes and Values in the Workplace

Definition of values, attitude and cognitive dissonance and how they influence workplace behavior, major job attitudes, job satisfaction.

7. Ethics in the Workplace

Business ethics, the ethical climate in an organization, types of workplace discrimination, affirmative action.

8. Perception and Attribution

Ways individuals judge others, attribution theory, how various cultural perceptions can influence organizational behavior.

9. Learning in the Workplace

Review classical and operant conditioning, social learning and shaping and how they relate to organizational behavior

10. Employee Motivation

Various theories of management, employee productivity, motivational theories, employee empowerment.

11. Individual Decision Making in Organizations

The rational decision making model, the leader participation model, common biases or errors in decision making.

12. Workforce Diversity

Types of diversity, such as gender and cultural, and how organizations manage diversity.

13. Organizational Communication in Business

The process and function of communication, methods of communication by managers, formal communication channels and casual communication in an organization

14. Groups and Work Teams

Types of groups, social identity theory, stages of group development, characteristics of effective teams.

15. Group Decision Making

Pros and cons of group decision making, the concept of group think, group polarization, cultural and ethical considerations in group decision making.

16. Conflict in the Workplace

Types of workplace conflict, functional and dysfunctional conflict, conflict resolution strategies, mediation.

17. Leadership in Organizational Behavior

The role of leaders, types of positional and personal power, influence tactics.

18. Leadership Theory

Situational control, the Hersey-Blanchard Model of Situational Leadership, path-goal theory, attribution theory of leadership

19. Leadership Styles in Organizational Behavior

Types of leaders, including task-oriented, people-oriented, transformational, servant and transactional, leadership styles.

20. Organizational Structure and Design

Definition of organizational structure, factors that influence organizational design, types of organizational designs, downsizing

21. Job Design

Fixed procedures to improve productivity, social information processing, the job characteristics model, design to encourage job enrichment for employees.

22. Organizational Culture

Definition of organizational culture, subcultures in organizations, employee socialization, institutionalization.

23. Organizational Change and Organizational Behavior

Planned and unplanned change, how to overcome resistance to change, action research to execute organizational change.

24. Managing Workplace Stress Causes of stress, its consequences, individual and organizational approaches to coping with stress.

25. Career Management

Occupational choice, job previews, career stages.

26. Global Implications of Organizational Behavior

Job satisfaction in other countries, emotions in other cultures, cultural differences when negotiating, ways to achieve globalization of an organization, challenges of globalization.

References

Risk Management

Topic 1 : Introduction to Risk Management: Concept of Risk; Major types of Risk- Market risk, Credit risk, Operational risk, Liquidity risk, Volatility risk etc.; What is risk management; Risk Management perspectives

Topic 2: Derivatives: Concept of derivative instruments; Growth of derivative markets; Types of derivative instruments – Forwards, Futures, Options, Swaps etc.; Derivatives used as risk management tool.

Topic 3: Forwards and Futures: Forwards and Futures markets, Futures trading; Cost of carry model; Mechanics of futures market; Types of traders

Topic 4: Options: American and European options, Put options and Call options, Put-Call parity; Option markets, trading strategies involving options; Option pricing, dynamic hedging and Black-Scholes model

Topic 5: Measuring Risk: Value-at-Risk (VaR)- Alternative methods of Value-at-Risk; concepts of Stress testing and Back testing; Principal Component Analysis VaR

Topic 6: Greek letters: Stop-loss strategy ; Delta hedging, Theta, Gamma, Vega, Rho

References:

J.C. Hull- Option, Futures and Other Derivatives- PEARSON Education
Rene M. Stultz- Risk Management and Derivatives-Thomson
R.A. Jarrow and A.Chatterjea- An Introduction to Derivative Securities, Financial Markets and Risk Management –W.W. Norton & Company
S.A.Ross, R.W.Westerfield and J.F. Jaffe- Corporate Finance- Mcgraw-Hill/Irwin

Industrial Economics

Theory of the firm

Size and structure of firms:

- the technological view of the firm
- the transaction costs-property rights approach
- investment specificity, incomplete contracts and vertical integration
- empirical evidence.

Separation of ownership and control:

- separation of ownership and control
- managerial incentives
- the limits to managerial discretion
- foundations of the profit-maximisation hypothesis.

Firm conduct and market structure

Short-run price competition:

- the Bertrand model
- Bertrand competition with capacity constraints
- the Cournot model.

Dynamic price competition:

- repeated interaction
- collusion and cartel stability
- theories of price wars
- Empirical analysis of market power and collusive behaviour.

Entry deterrence and entry accommodation:

- first-mover advantages and the value of irreversible decisions
- strategies to deter entry
- strategic substitutability vs. complementarity
- a taxonomy of business strategies
- predation.

Product differentiation and non-price competition:

- horizontal product differentiation
- brand proliferation and entry deterrence
- vertical product differentiation

- markets with asymmetric information.

Price discrimination:

- first-degree, second-degree and third-degree price discrimination
- non-linear pricing
- tie-in sales.

Vertical restraints:

- efficiency explanations for vertical restraints
- vertical and horizontal externalities
- vertical restraints as instruments that restrict competition
- empirical evidence.

The determinants of market structure:

- theory of market structure in exogenous and endogenous sunk cost industries
- technology and market structure
- empirical evidence.

Competition policy and regulation

Competition and industrial policy:

- competition policy in the EU, the USA and Japan
- current issues in competition policy
- industrial policy towards R&D.

Regulation:

- regulation of firms with market power under symmetric information
- regulation under asymmetric information
- liberalisation and regulation
- empirical evidence.

References

- *Tirole, J. The Theory of Industrial Organization. (Cambridge, MA: MIT Press)*
- *Church, J.R. and R. Ware Industrial Organization: A Strategic Approach. (Irwin McGraw-Hill)*
- *Sutton, J. Sunk Costs and Market Structure. (Cambridge, MA: MIT Press)*
- *Armstrong, M., S. Cowan and J.Vickers. Regulatory Reform. (Cambridge, MA: MIT Press)*