

Proposed Course Structure for 4 Year under Graduate Programme in Economics

Semester	Major Course (MC)/DSC	Interdisciplinary/ Multidisciplinary (IDC/MDC)	Minor Course (MnC)	Ability Enhance ment Course (AEC)	Skill Enhancement Course (SEC)	Internship/ Apprenticeship/ Project/Community Outreach	Value addition Course (VAC)	Total credit
I	MC 1 (4) Introductory Microeconomics MC 2 (4) Indian Economy-I	MDC 1 (3) Banking and Financial System	One from the pool of courses of Minor 1 MnC 1 (4) (Sub: A) Microeconomics	MIL 1 (2)	Choose one SEC from Major Discipline SEC 1 (3) Preliminary Mathematical Skills		ENVS (2)	22
II	MC 3 (4) Introductory Macroeconomics MC 4 (4) Development Economics I	MDC 2 (3): Gender Economics	One from the pool of courses of Minor 2 MnC 2 (4) (Sub: B)	MIL 2 (2)	Choose one SEC from Major Discipline SEC 2 (3) Statistical Methods - I		Choose one from the pool of courses (2)	22+2*
III	MC 5 (4) Intermediate Microeconomics-I MC 6 (4) Indian Economy- II	MDC 3 (3)	One from the pool of courses of Minor 2 MnC 3 (4) (Sub: A) Macroeconomics	English Language 1 (2)	Choose one SEC from Major Discipline SEC 3 (3) Mathematical Methods in Economics I			20
IV	MC 7 (4) Intermediate Macroeconomics- I MC 8 (4) Statistical Methods -II MC 9 (4) Development Economics II		One from the pool of courses of Minor 2 MnC 4 (4) (Sub: B)	English Language 2 (2)		Internship/ Apprenticeship / Project/Comm unity Outreach (IAPC) (2)		18+2*
V	MC 10 (4) MC 11 (4) DSE 1 (4)		One from the pool of courses of Minor 2				One from the pool of courses (2)	22

	DSE 2 (4)		MnC 5 (4) (Sub: A)					
VI	MC 12 (4) MC 13 (4) DSE 3 (4) DSE 4 (4)		One from the pool of courses of Minor 2 MnC 6 (4) (Sub: B)				One from the pool of courses (2)	20
VII	MC 14 (4) DSE 5 (4) DSE 6 (4)		One from the pool of courses of Minor 2 MnC 7 (4) (Sub: A)				Dissertation on Major/Academic project/Entrepreneurship (4)	20
VIII	MC 15 (4) DSE 7 (4) DSE 8 (4)		One from the pool of courses of Minor 2 MnC 7 (4) (Sub: B)				Dissertation on Major/Academic project/Entrepreneurship (6)	24
	Total							170

SEMESTER - I

MC 1: (Introductory Microeconomics)

Unit 1: Subject matter of Economics

Nature and scope - scarcity and efficiency, basic problems of an economy - micro economics and macro economics, positive and normative economics -opportunity cost - production possibility frontier.

Unit 2: Demand and Supply

Concept of demand, factor influencing demand, law of demand and demand curve, movement along a demand curve, shift of demand curve, elasticity of demand – types - price, income and cross elasticity, factors influencing elasticity of demand, measurement of elasticity of demand.

Concept of supply, factors influencing supply, supply curve, elasticity of supply, market equilibrium through the interactions of demand and supply.

Unit 3: Utility Theory

Concept of consumer preference and utility - Cardinal and ordinal approaches, law of diminishing marginal utility, law of equi-marginal utility, utility function.

Unit 4: Theory of Production and Costs

Concept of production, factors of production, concept of production function; concept of short-run and long-run, returns to factor, law of variable proportion, three stages of production, returns to scale,

Concept of cost, fixed cost, variables cost, average cost, marginal cost, concept of cost function.

Unit 5: Market Morphology:

Concept of Market, Types of Market –Perfect Competition, Monopoly, Oligopoly and Monopolistic Competition (*basic descriptions and features only*).

Suggested Readings

1. N. Gregory Mankiw, *Economics: Principles and Applications*, Indian edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th Edition, 2007.
2. Pindyck R.S. and D.L. Rubinfeld, *Microeconomics*, Eighth edition, Pearson, 2017

3. Maddala, G. S. and Miller, E. M, *Microeconomics: Theory and Applications*, McGrawHill, 1989
4. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton and Company Inc., New York, International Student Edition, 4th Edition, 2007.
5. Bernheim B., Whinston M., *Microeconomics*. Tata McGraw-Hill, 2009
6. Karl E. Case and Ray C., *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007
7. Samuelson P. A. and William D. Nordhaus, *Microeconomics 19e*, Mc-Graw Hill Higher Education.
8. Ferguson CE, Gould JP. *Microeconomic Theory*, Richard D. Irwin. Inc., Homewood, IL. 1975.
9. R.G. Lipsey. *An Introduction to Positive Economics*. English Language Book Society. (sixth edition or later edition).
10. Hal R. Varian, *Intermediate Microeconomics, A Modern Approach*, W.W. Norton and Company/Affiliated East-West Press (India), 8th Edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
11. C. Snyder and W. Nicholason, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.

MC 2: (Indian Economy-I)

Unit 1: Indian Economy: Changing characteristics since Independence

Structure of the Indian Economy - plan regime, liberalization regime (*a brief description*)

Unit 2: Issues of Agriculture

Role and nature – growth and productivity – agrarian structure and technological changes – Forms of tenancy and Land Reforms – Green Revolution – agriculture finance and marketing – commercialization of Indian agriculture

Unit 3: Issues of Indian Industries

Role and nature – trends in industrial production and productivity – problems of industrial development – small-scale and cottage industries – industrial policy since economic reform – public sector industry and its role – industrial dispute.

Unit 4: Issues of Service Sector

Role and nature – types of service sector - trends in development of service sector – service sector since economic reform

Suggested Readings

1. Datt R. and Sundharam K.P.M. *Indian Economy*, S. Chand & Company Ltd. New Delhi.
2. Puri VK, Misra SK and Garg, B. *Indian Economy*, 41st Edition, Mumbai: Himalaya Publishing House; 2023.
3. Kapila U. *Indian Economy Since Independence*. Academic Foundation, New Delhi, 2008-09.
4. Bansil P.C. *Agricultural Problems of India*, Vikas Publishing House Pvt.Ltd.
5. Mookherjee D. *Indian Industry: Policies and Performance*. Oxford University Press 1997.
6. Bhalla G. S. and Singh G. *Indian Agriculture: Four Decades of Development*. Sage Publications.
7. Balakrishnan P. Golait R. and Kumar P. *Agricultural Growth in India Since 1991*, RBI. 2008. DEAP Study no. 27.
8. Goldar B.N. and Aggarwal S.C. *Trade Liberalization and Price-Cost Margin in Indian Industries*, The Developing Economics, September. 2005.
9. Chanda, R., *Services for Indian manufacturing*. In M. Dev (ed.) India Development Report, 2017

10. Chatterjee, S., Kapur, D., *Six puzzles in Indian agriculture*. India Policy Forum 2016, Vol. 17, 2017
11. Rajesh, S., Sen, K., *Some puzzles about firms*, Economic and Political Weekly, 51(7), 43-51, 2016
12. Sen, K., Das, D., *Where have all the workers gone? The puzzle of declining labour intensity in organised Indian manufacturing*, Economic and Political Weekly, 50(23), 108-115, 2015.

SEC-1: (Preliminary Mathematical Skills)

Unit 1: Some Basic Concepts of Algebra

Law of indices,
Concept of series–AP and GP,
Concept of logarithm and its operations.

Unit 2: Matrix and Determinant

Concept of determinant, and Cramer's rule.
Concept of vector and matrix, matrix operations, types of matrices, transpose of a matrix, inverse of matrix, properties of transpose and inverse, minor and rank of a matrix, matrix inversion method.

Unit 3: Basic Concept of Functions and Graphs

The concept and operations of set, The concept of functions, types of functions (linear, quadratic, power, exponential, inverse, logarithmic), continuous and discrete functions, limits and continuity of functions.

Unit 4: Basics of Differential Calculus

Differentiation, rules of differentiation: power rule-constant rule-sum and difference of functions-product rule-quotient rule-chain rule- exponential rule-logarithmic rule-implicit function, second order derivatives, Total and partial derivatives.

Unit 5: Basics of Integral Calculus

Concept of integration, integration as the inverse process of differentiation, rules of integration – power rule-sum rule-difference rule-product rule-integration of reciprocal and exponential function, definite and indefinite integral.

Suggested Readings

1. Alpha Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Fourth Edition, McGraw-Hill, 2005.
2. Sydsaeter, K., Hammond, P., *Mathematics for Economic Analysis*, Pearson Educational, 2002
3. Edward T Dowling (2011), *Schaum's Outline of Introduction to Mathematical Economics*, 3rd Edition, McGraw Hill Publication.

4. Geoff Renshaw (2009), *Maths for Economics*, 2nd Edition, Oxford Publications, New Delhi
5. Jean E. Weber (1982), *Mathematical Analysis, Business and Economics Applications*, Harper International Edition, Cambridge, March 1.
6. Mabbet, A.J. (1986), *Workout Mathematics for Economists*, Mac Millan Master Series, 4th Edition, London.

Minor 1/2: (Microeconomics)

Unit-1: Subject Matter of Economics

Nature and scope - scarcity and efficiency, basic problems of an economy - micro economics and macro economics, positive and normative economics -opportunity cost.

Unit 2: Theory of Demand, and Supply

Concept of demand, factor influencing demand, law of demand and demand curve, movement along a demand curve, shift of demand curve, elasticity of demand – types - price, income and cross elasticity, factors influencing elasticity of demand, measurement of elasticity of demand.

Concept of supply, factors influencing supply, supply curve, market equilibrium through the interactions of demand and supply.

Unit 3: Theory of Production and Costs

Concept of production, factors of production, concept of production function; concept of short-run and long-run, returns to factor, law of variable proportion, stages of production, returns to scale.

Concept of cost, fixed cost, variables cost, average cost, marginal cost, concept of cost function.

Unit 4: Market Morphology:

Concept of Market, Types of Market –Perfect Competition, Monopoly, Oligopoly and Monopolistic Competition (*basic descriptions and features only*).

Unit 5: Concept of Factor Pricing

Concept of Rent, Interest, Wage and Profit (*basic descriptions only*), distribution of factor income (basic idea)

Suggested Readings

1. R.G. Lipsey. *An Introduction to Positive Economics*. English Language Book Society. (sixth edition or later edition).1966
2. N. Gregory Mankiw, *Economics: Principles and Applications*, Indian edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th Edition, 2007 Pyndick and Rubinfeld, *Microeconomic Theory*.
3. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007

4. Joseph E. Stiglitz and Carl E. Walsh, Economics, W.W. Norton and Company Inc., New York, International Student Edition, 4th Edition, 2007.
5. Samuelson P. A. and William D. Nordhaus, *Microeconomics 19e*, Mc-Graw Hill Higher Education.
6. Hal R. Varian, Intermediate Microeconomics, A Modern Approach, W.W. Norton and Company/Affiliated East-West Press (India), 8th Edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
7. C. Snyder and W. Nicholson, Fundamentals of Microeconomics, Cengage Learning (India), 2010.

MDC-1: (Banking and Financial System)

Unit 1: Money and Banking

Concept and Evolution of Money, Functions of Money, various measures to Money Supply in India
Definition of Bank, An idea of Indian Banking System

Concept of Central Bank, Functions of Central Bank, Functions of Commercial Banks, Importance of Commercial Banks

A brief idea about Reserve Bank of India (RBI) – evolution and functions

Concept of Development Banks in India – A few examples: NABARD, IDBI, SIDBI

Unit 2: Non-bank Financial Institution

Concept of Non-bank Financial Institutions, some examples: Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GICI), Insurance Organization under Private Sector in India, Insurance Regulatory and Development Authority of India (IRDAI).

Unit 3: An Introduction to Indian Financial System

Outline of Indian Financial System – Money market and Capital market

Concept of Money market - Unorganized and Organized segments, Features and functions of money market in India

Concept of Capital market – structure and composition, Functions of capital market in India, New issue market, Share market - concepts of SENSEX-BSE, NSE, NIFTY

Brief idea about SEBI and its function.

Suggested Readings:

1. Eichberger and Harper, *Financial Economics*, Oxford University Press, 1997
2. Roy E. Bailey, *The Economics of Financial Markets*, Cambridge University Press, 2005
3. Mier K., *Financial Markets and Institutions*, Tata McGraw- Hill Publishing Company Ltd.
4. Mukherjee, Ghose, Roy (2005): *Indian Financial System and Financial Operations*, 2nd edition, Dey Book Concern
5. Khan, M.Y., *Indian Financial System*, Tata McGraw- Hill Publishing Company Ltd, 2005
6. F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6th edition, 2009.

MDC-2: (Gender Economics)

Unit 1: Role of Gender in Family

Patriarchy and underlying socio-cultural constraints for women, Household as Economic Unit: Gender division of Labour within Household, Allocation of resources between gender, Marriage and kinship, Care economics, Inheritance and property right of women.

Unit 2: Gender and Well Being

Combating gender in equality: SDGs, Women conferences, legislations etc., Indices of women empowerment (GEM, WEAI, GDI).

Unit 3: Women and Labour Market

Occupational Segregation & Wage Disparity in the labour market; Exploitation of women workers in various sectors: Formal and informal sector women workers, Factors affecting work force participation of women.

Unit 4: Economics of Gender and Development

Economics of education and gender inequality, Economics of health: Nutrition, RCH etc., Vulnerability of women: Violence against women, crimes against women.

Suggested Readings:

1. Boserup, Ester. (1970) Women's role in economic development, New York: St Martin's Press • Irene Tinker. (1990), Persistent Inequalities: Women and world development, New York: Oxford University Press
2. Kabeer Naila, (1995) Reversed realities: Gender hierarchies in development thought, New Delhi: Kali for women
3. Jackobsen J.P. (2007). The Economics of Gender, Blackwell Publishing
4. Shahra Razavi (ed.) (2009.) "The gendered impacts of liberalization: Towards embedded liberalism?" New York: Routledge (for UNRISD).
5. Maria Mies. (1986), Indian women in subsistence and agricultural labour, New Delhi: Vistaar.
6. Mark McGillivray (Ed) (2007), Human Well-being: Concept and Measurement, Palgrave Macmillan: Basingstoke.
7. Robin Jeffrey,(2003), Politics, Women and Wellbeing: How Kerala became a 'Model', New Delhi: OUP.

8. Swapna Mukhopadhyay (2007) (ed.) *The Enigma of the Kerala Woman: The Failed Promise of Literacy*, New Delhi; Social Science Press.
9. Tessa Pollard and Susan Brin Hyatt, (1999) *Sex, Gender and Health* Cambridge: Cambridge University Press.
10. Karen Oppenheim Mason and An-Margritt Jensen, (1995) *Gender and Family Change in Industrialised Countries* Oxford: Oxford University Press.
11. Lesley Doyal. (2002)“Gender Equity in Health: Debates and Dilemmas”, in *Gender Health and Healing: The Private-Public Divide*. Ed. Bendelow et al (London: Routledge) 91
12. Female Genital Cutting: Clitoridectomy, Female Circumcision, Female Genital Mutilation or Rite of PassageŠ, in *Forsaken Females: The Global Brutalisation of Women*, Andrea Parrot and Nina Cummings, Oxford: Rowan and Littlefield, 2006.

SEMESTER - II

MC 3: (Introductory Macroeconomics)

Unit 1: National Income Accounting

Concepts of GDP, GNP, NNP and National Income, Real and Nominal – GDP deflator, Measurement of National Income – GDP at market price, GDP at factor cost, Circular flow of National Income, National Income identity in the open and closed economy, Problems of National Income accounting.

Unit 2: Money as a Macroeconomic Variable

Concept of Money, Evolution of Money, Functions and types of Money, Concept of Money supply – M1, M2, M3, High powered money

Unit 3: Concept of Price level and Inflation

Concept of price level and its measurement – CPI, WPI, Concept of Inflation, Types of Inflation – Creeping, walking, running, galloping and hyperinflation

Unit 4: Interest rate as a Macroeconomic Variable

Concept of interest rate, Nominal and real interest rate, Types of interest rate (bank rate, CRR, SRR, repo rate and reverse repo rate)

Unit 5: Concepts of Consumption, Savings and Investment

Concept of consumption – Consumption function, APC and MPC (concepts and determinants), Concept of Saving - Saving function, APS and MPS (concepts and determinants), Concept of Investment – Types (Autonomous and Induced), MEC and MEI (concepts and their relation)

Suggested Readings

1. Dornbusch and Fischer, *Macroeconomics*, McGraw Hill, 4th edition, 2005.
2. N. Gregory Mankiw., *Principles of Macroeconomics*, Indian Imprint of South Western by Cengage India, 6th edition, 2015.
3. Mishkin, F.S., *Macroeconomics: Policy & Practice*, 2nd Edition, Pearson, 2016
4. Ahuja, H.L., *Macroeconomics: Theory and Policy*, 20th edition, S Chand, 2019
5. Jhingan, M.L., *Macroeconomic Theory*, 13th edition, Vrinda Publication, 2016
6. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
7. Sikdar Soumyen, *Principles of Macroeconomics*, Oxford University Press

MC 4: (Development Economics–I)

Unit 1: Growth and Development

Concept of economic development and economic growth, difference between economic growth and economic development, Measures of development –HDI, Physical Quality of Life Index (PQLI), obstacles to economic development, Classification of countries based on the state of economic development, concept of sustainable development.

Unit 2: Population and Economic Development

Relation between population growth and economic development; theory of demographic transition; Malthusian population trap; concept of optimum population, population explosion, demographic dividend

Unit 3: Capital Formation and Economic Development

Meaning of capital formation, physical and human capital formation, role of capital formation in economic development, reasons for low level of capital formation in developing countries

Unit 4: Capital Output Ratio as tool for Economic Development

Meaning of capital-output ratio, Types of capital-output ratio - average and marginal, Role of capital-output ratio in economic development and policy formulation.

Suggested Readings

1. Todaro M.P. and Stephen C. Smith, *Economic Development*, Pearson Education in South Asia, 5th edition 2011.
2. Debraj Ray, *Development Economics*, Oxford University Press, 2009.
3. Lekhi, R.K. and Singh, J., *Economics of Development and Planning*, Kalyani Publishers, 2014.
4. Jhingan, M.L. and Jhingan, B.K., *The Economics of Development and Planning*, 42nd Edition, Vrinda Publication,
5. Ahuja, H.L., *Development Economics: A Critical Study of Economic Growth, Development and Environment*, First edition, S. Chand Publication, 2016.
6. Thirlwall A.P. *Growth and Development*, Palgrave Macmillan, 4th edition, 1989.
7. Basu, K., *Analytical Development Economics: The Less Developed Economy Revisited*, Oxford University Press India, 1998

8. Hayami, Y. and Godo, Y., *Development Economics: From the Poverty to the World of Nations*, 3rd Edition, Oxford University Press, 2005.
9. Thirlwall, A.P. and Lopez, P.P., *Economics of Development: Theory and Evidence*, 10th edition, Red Globe Press, 2017.
10. Meier, G. and James E. Rauch. *Leading Issues in Economic Development*, Oxford University Press. 7th edition 2000.
11. Wayne Nafziger E. *Economic Development*, Cambridge University Press, 5th edition, 2012.
12. Hendrik Van Den Berg, *Economic Growth and Development*, 3rd edition, World Scientific Publishing Co Pte Ltd, 2016
13. Amartya Sen, *Development as Freedom*, OUP, 2000
14. 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.
15. A.K Bagchi. *The Political Economy of Underdevelopment*, Cambridge University Press, 1982.
16. S. Fukuda-Parr and A.K. Shiva Kumar. *Readings in Human Development*. Oxford University Press.
17. *Human Development Report*. Relevant years.

SEC-2: (Statistical Methods-I)

Unit 1: Basic Steps in Statistical Method

Statistics as a tool of economic analysis, concept and types of statistical data, collection of data, tabulation of data, concept and types of frequency distribution – discrete and continuous, cumulative frequency distribution, types of graphical presentation.

Unit 2: Measures of Central Tendency

Concept of central tendency and its measures – mean, median, mode and partition values (concepts of quartiles, deciles, percentiles)

Properties of AM, GM, HM and their calculation, relations among them

Properties of median, mode and their calculation

Unit 3: Measures of Dispersion

Concept of Dispersion, Measures of dispersions – Absolute measures and Relative measure

Absolute measures: Range, Mean deviation, Standard deviation and quartile deviation (concepts, property and calculation)

Relative measures of dispersion – Coefficient of Variation, Coefficient of Mean deviation and Coefficient of Quartile deviation

Unit 4: Moments, Skewness and Kurtosis

Concept of Moments and its types, relationship between Central and non-central Moment, Measures of moments,

Concept of Skewness and its types (zero, positively, negatively skewed distribution and their interpretation)

Concept of Kurtosis and its types (mesokurtic, leptokurtic, platykurtic distribution and their interpretation)

Unit 5: Index Numbers

Concepts, Construction of index number, types of index number – Price, quantity and value indices, Laspeyr's, Paasche's and Fisher's index number, fixed base and chain base indices, base shifting, cost of living index number and its application

Tests of index numbers – time reversal, factor reversal and circular test

Suggested Readings

1. Das, N.G., *Statistical Methods*, Volume 1 and 2, Mc Graw Hill Education, 2017
2. Gun, A.M., Gupta, M. K. and B. Dasgupta. *Fundamentals of Statistics*, Volume 1 and 2, The World Press, 1996
3. Gupta S.C. and Kapoor, V.K., *Fundamentals of Mathematical Statistics*, Twelfth edition, Sultan Chand and Sons, 2020
4. Nagar, A.L. and R.K. Das. *Basic Statistics*, Oxford University Press, New Delhi, 1983.
5. Giri, P.K. and Banerjee, J., *Statistical Tools and Techniques*, 7th edition, Academic Publishers, 2021.
6. Rowntree, D., *Statistics Without Tears: An Introduction for Non-mathematicians*, Penguin, 2018
7. Hogg, R.G. and Craig, A.T., *Introduction to Mathematical Statistics*, Prentice Hall; 6th Edition, 2004
8. J. F. Kenney and E. S. Keeping. *Mathematical Statistics: Part 1 & Part II*, Chapman and Hall, New York, 1954.
9. Croxton, F.E., and D. J. Cowden and S. Klein. *Applied Statistics*, Prentice Hall; *Applied General Statistics*. 3rd edition. Prentice-Hall, Inc., 1960.

SEMESTER - III

MC 5: (Intermediate Microeconomics-I)

Unit 1: Theory of Consumer Behavior

Consumer preference ordering – Cardinal and Ordinal approaches, indifference curve – axioms and properties (with special shapes), budget constraint, consumer's equilibrium, price, income and substitution effects, Marshallian and compensated demand curves; price consumption curve, income consumption curve and Engel curve, concept of consumers' and producers' surpluses. Compensating and equivalent variation, Slutsky equation, Revealed Preference Approach – axioms, derivation of demand function.

Unit 2: Production and Cost Function

Iso-quant, iso-cost line and producer's equilibrium, concept of expansion path and elasticity of substitution. Concept of homogeneous and homothetic production functions and their properties, Cobb- Douglas and CES production function and their properties.
Short run and long run costs (traditional and modern),

Unit 3: Perfectly Competitive Market Structure

Perfect Competition: price and output determination under perfect competition – short run and long run equilibrium of the firm; determination of the supply curve of the firm and industry: with reference to external economies and diseconomies

Unit 4: Imperfect Market Structure

Monopoly: supply curve of the monopolists; equilibrium under monopoly; measuring monopoly power; degree of monopoly power, price discrimination- different types and degrees, multiplant monopoly
Equilibrium under monopolistic competition, Oligopoly (Cournot duopoly, Kinked demand curve and Stackelberg's model).

Suggested Readings

1. Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
2. Pindyck R.S. and D.L. Rubinfeld, *Microeconomics*, Eighth edition, Pearson, 2017
3. Koutsyansis, A. *Modern Microeconomics*, Macmillan., 1979
4. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.
5. B. Douglas Bernheim and Michael D. Whinston, *Microeconomics*, Tata McGraw- Hill (India), 2009.
6. Hugh Gravelle and Ray Rees. *Microeconomics*, Prentice Hall (UK); 3rd edition, 2004.
7. Anindya Sen , *Microeconomics: Theory and Applications*, Oxford University Press
8. Pindyck, Rubinfeld and Mehta: *Microeconomics* (Pearson Education Asia), 6th Edition
9. Ferguson CE, Gould JP. *Microeconomic Theory*, Richard D. Irwin. Inc., Homewood, IL. 1975.
10. Ahuja HL. *Advanced Economic Theory: Microeconomic Analysis*. S. Chand Publishing; 2017.

MC 6: (Indian Economy- II)

Unit 1: Economic Development since Independence

Major features of the economy since independence; planning: evolution of India's development goals and strategies - structural constraints and Indian development strategies, the strategy of export promotion and import substitution.

Public sector, Private sector and public-private partnership (PPP) model,

Unit 2: Poverty and Unemployment in India

Concept of poverty and its measures, strategy poverty alleviation, poverty alleviation programs in India.

Nature and Types of Unemployment in India, trend in unemployment, estimates of unemployment, causes of unemployment, Policies for removing unemployment, major employment generation programs – MGNREGS, Pradhan Matri Rojgar Protsahan Yojona (PMRPY).

Unit 3: Indian Monetary and Banking System

Evolution of monetary and banking system in India – Evolution of RBI and bank nationalization, Role and functions of RBI, Methods of Credit Control of RBI or Monetary Policy of RBI, Components of money supply in India,

Commercial banks in India - functions, Importance of Commercial Banks

Development banks in India – NABARD, IDBI, SIDBI, ICICI

Non-Bank financial institution – LIC and GICI

Unit 4: Indian Public Finance

Budgetary system in India – Types of Government Revenues (direct and indirect taxes, non-tax revenue), changing pattern of direct and indirect taxes and tax reform, expenditure policies in India – composition, concept of deficits in India-budget deficit, revenue deficit, fiscal deficit, public debt – internal and external debt in India.

References

1. Puri VK, Misra SK and Garg, B. *Indian Economy*, 41st Edition, Mumbai: Himalaya Publishing House; 2023.
2. Datt R. and Sundharam K.P.M. *Indian Economy*, S. Chand & Company Ltd. New Delhi.
3. Kapila U. *Indian Economy Since Independence*. Academic Foundation, New Delhi, 2008-09.
4. Jean Dreze and Amartya Sen, 2013. *An Uncertain Glory: India and its Contradictions*, Princeton University Press.
5. Jean Dreze and Amartya Sen: *Economic Development and social opportunity*, OUP
6. Sukhomoy Chakraborty: *Development Planning: The Indian Experience*, OUP
7. Pramit Chaudhuri, *The Indian Economy, Poverty and Development*, Vikas Publishing House.
8. Bhagwati and Desai, *India Planning for Industrialization*, OUP.
9. Bimal Jalan (Ed), *The Indian Economy*, OUP
10. Raja J. Chelliah, *Towards Sustainable Development – Essays in Fiscal and Financial Sector Reforms in India*, OUP
11. C. Rangarajan, *Indian economy – Essays on Money and Finance*, UBS Publishers' Distributors Ltd.
12. Panagariya, A., Mukim, M., *A comprehensive analysis of poverty in India*, Asian Development Review, 31, 1-52, 2014
13. Rangarajan Committee., *Report of the expert group to review the methodology for measurement of poverty*, Government of India, 2014
14. Rodgers, G., *Inequality in the Indian growth regime*, Indian Journal of Human Development, 12, 134-148, 2018

SEC 3: (Mathematical Methods in Economics-I)

Unit 1: Application of Derivatives and Integration in Economics

Derivation of Elasticity, MC, MR, MP, Concept of slope, Concept of acceleration/deceleration, Rate of Change - MRS, MRTS, Concept of Curvature - Convex, Concave, Quasi-Concave, Point of inflection and its application (Production Possibility curve, three stages of production, indifference curve, iso-quant), Application of Homogeneous and Homothetic function, Mathematical representation of Euler's theorem - Product Exhaustion Theorem, Cobb-Douglas Production Function and its properties, CES Production Function and its properties, Cobb-Douglas Production Function: A Special case of CES Production Function, Leontief Production Function with properties, Leontief Function as the limiting form of CES Function, Integrals in Economics- Marginal to Total, Concept of area and its calculation (Consumer surplus, Producer's surplus).

Unit 2: Applications of Unconstraint Optimization Techniques

Basic idea of optimization, Maxima and Minima (single variable and multi-variable) - Extreme values, necessary and sufficient condition. Application of Unconstrained optimisation problems in Economics- Utility, Production, Cost and Profit, Price and output determination under different forms of market and their comparison (perfect competition, monopoly, multi-plant, multi-product, price discrimination, Cournot's model of Duopoly and Stackelberg's Model)

Unit 3: Application of Constraint Optimisation Techniques

Basic idea of Constrained Optimisation - Method of Substitution, Lagrange Multiplier Method- necessary and sufficient condition, Bordered-Hessian Matrix. Application of Constrained Optimisation Problems in Economics: Utility Maximisation subject to budget constraint, Derivation of Ordinary Demand Function, Derivation of Compensated Demand Function, Output Maximisation Subject to cost constraint, Cost Minimisation subject to an output constraint, Expansion Path, Long-run Cost Function.

Suggested Readings:

1. Alpha Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Fourth Edition, McGraw-Hill, 2005.
2. Sydsaeter, K., Hammond, P., *Mathematics for Economic Analysis*, Pearson Educational, 2002
3. Lawrence Blume and Carl Simon. *Mathematics for Economists*, W. W. Norton and Company, 1994.
4. Hoy, M., Livernois, J., McKenna, C., Rees, R. and Stengos, T., *Mathematics for Economics*, Third Edition, MIT Press, Cambridge, 2011
5. Alpha C. Chiang, *Elements of Dynamic Optimization*, McGraw-Hill, 2005.
6. Taha, H.A., *Operation Research: An Introduction*, 9th edition, Pearson Education, 2014
7. A. K. Dixit, *Optimization in Economic Theory*, 2nd Edition, (Oxford University Press), 1990.
8. Silberberg, E. and Suen, W., *The Structure of Economics: A Mathematical Analysis*, 3rd Edition, McGraw Hill International Edition, 2000

Minor 3/4: (Macroeconomics)

Unit 1: Introduction to Macroeconomics and National Income Accounting

Basic issues in macroeconomics; Concept of National Income, concepts of GDP, GNP, NDP, NNP, Nominal GDP, real GDP and GDP deflator. Measurement of gross domestic product: income, expenditure method and the circular flow; price indices.

Unit 2: The Closed Economy in the Short Run

Classical system: Say's Law of market, Wage Price flexibility and full employment, Keynesian systems; simple Keynesian model of income determination.

Unit 3: Money Demand and Money Supply in a Closed Economy

Concept and functions of money; quantity theory of money - Fisher's and Cambridge versions, determination of money supply; money demand function– Keynesian Liquidity Preference Theory.

Unit 4: Inflation in a Closed Economy

Concept of inflation, deflation and stagflation, causes of inflation, Demand pull and cost push inflation, inflationary gap, anti-inflationary policy measures.

Suggested Readings:

1. Dornbusch and Fischer, *Macroeconomics*, McGraw Hill, 4th edition, 2005.
2. N. Gregory Mankiw., *Principles of Macroeconomics*, Indian Imprint of South Western by Cengage India, 6th edition, 2015.
3. Mishkin, F.S., *Macroeconomics: Policy & Practice*, 2nd Edition, Pearson, 2016
4. Ahuja, H.L., *Macroeconomics: Theory and Policy*, 20th edition, S Chand, 2019
5. Jhingan, M.L., *Macroeconomic Theory*, 13th edition, Vrinda Publication, 2016
6. Sikdar Soumyen, *Principles of Macroeconomics*, 3rd edition, Oxford University Press India, 2020
7. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009.

SEMESTER-IV

MC-7: (Intermediate Macroeconomics-I)

Unit 1: Introduction to Macroeconomics and National Income Accounting

Basic issues studied in macroeconomics; Concept of National Income, concepts of GDP, GNP, NDP, NNP, Nominal GDP, real GDP and GDP deflator. Measurement of gross domestic product; income, expenditure method and the circular flow; price indices; national income accounting for an open economy.

Unit 2: The Closed Economy in the Short Run

Classical system: Say's Law of market. Wage Price flexibility and full employment of an economy.

Keynesian systems; simple Keynesian model of income determination,

Classical dichotomy, Real Balance Effect,

IS-LM model; Effectiveness of Monetary and Fiscal Policies.

Unit 3: Money Demand and Money Supply in a Closed Economy

Concept and functions of money; quantity theory of money - Fisher's and Cambridge versions, determination of money supply; money demand function– Keynesian Liquidity Preference Theory; Tobin's Portfolio Balance Approach, Baumol's Inventory Theoretic Approach.

Unit 4: Inflation in a Closed Economy

Concept of inflation, deflation and stagflation, Causes of inflation, Demand pull and cost push inflation, inflationary gap, Role of structural factors in inflation–output gap, anti-inflationary policy measures.

Unit 5: Phillips Curve

Trade-off between inflation and unemployment – conventional approaches of Phillips curve, Friedman-Phelps approach – Short run and long run Phillips curve – Natural rate of Unemployment - NIRU.

Suggested Readings

1. Dornbusch and Fischer, *Macroeconomics*, McGraw Hill, 4th edition, 2005.
2. N. Gregory Mankiw., *Principles of Macroeconomics*, Indian Imprint of South Western by Cengage India, 6th edition, 2015.
3. Mishkin, F.S., *Macroeconomics: Policy & Practice*, 2nd Edition, Pearson, 2016
4. Ahuja, H.L., *Macroeconomics: Theory and Policy*, 20th edition, S Chand, 2019
5. Jhingan, M.L., *Macroeconomic Theory*, 13th edition, Vrinda Publication, 2016
6. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
7. Sikdar Soumyen, *Principles of Macroeconomics*, 3rd edition, Oxford University Press India, 2020
8. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
9. Richard T. Froyen, *Macroeconomics*, Pearson Education Asia, 2nd edition, 2005.

MC-8: (Statistical Methods–II)

Unit 1: Correlation Analysis

Bivariate frequency distribution- scatter plot, Concept of simple correlation, measures of correlation coefficient and their properties, numerical calculation, concept of rank correlation and its measures, multiple and partial correlation coefficient.

Unit 2: Simple Regression Analysis

Meaning of regression, the relation between correlation and regression, Concept of regression lines and OLS method of estimation, interpretation of regression coefficient, properties of regression coefficients, numerical calculation of regression coefficients.

Unit 3: Basics of Time Series Data

Meaning of time series data, frequency of time series with examples– components of time series and their additive and multiplicative relations, measurement of trend involving moving average method, OLS method, and de-seasonalization of time series.

Unit 4: Interpolation and Extrapolation

Meaning and needs for interpolation, difference between interpolation and extrapolation, Conventional approaches of interpolation – Newton's backward and forward, Lagrange interpolation, inverse interpolation.

Suggested Readings

1. Das, N.G., *Statistical Methods*, Volume 1 and 2, Mc Graw Hill Education, 2017
2. Gun, A.M., Gupta, M. K. and B. Dasgupta. *Fundamentals of Statistics*, Volume 1 and 2, The World Press, 1996

3. Gupta S.C. and Kapoor, V.K., *Fundamentals of Mathematical Statistics*, Twelfth edition, Sultan Chand and Sons, 2020
4. Nagar, A.L. and R.K. Das. *Basic Statistics*, Oxford University Press, New Delhi, 1983.
5. Giri, P.K. and Banerjee, J., *Statistical Tools and Techniques*, 7th edition, Academic Publishers, 2021.
6. Rowntree, D., *Statistics Without Tears: An Introduction for Non-mathematicians*, Penguin, 2018
7. Hogg, R.G. and Craig, A.T., *Introduction to Mathematical Statistics*, Prentice Hall; 6th Edition, 2004
8. J. F. Kenney and E. S. Keeping. *Mathematical Statistics: Part 1 & Part II*, Chapman and Hall, New York, 1954.
9. F. E. Croxton D. J. Cowden and S. Klein. *Applied Statistics*, Prentice Hall; *Applied General Statistics*. 3rd ed. Prentice-Hall, Inc., 1960.

MC 9: (Development Economics-II)

Unit 1: Problems of Underdevelopment

Characteristics of underdeveloped economies – vicious circle of poverty (demand and supply sides)
– concept of low level equilibrium trap.

Unit 2: Theories of Development and Growth

Adam Smith's theory of growth, Rostow's theory of economic growth, Marx's approach to development, Lewis model of rural-urban migration – Big push theory, critical minimum effort thesis and Nelson's low level equilibrium trap model

Unit 3: Balanced and Unbalanced Growth

Concept of balanced and unbalanced growth, differences, Some theories of balanced and unbalanced growth – Nurkse and Hirschman.

Unit 4: Poverty, Inequality and Development

Types of poverty (absolute and relative), Measures of poverty and international comparison, poverty line, Inequality-meaning and measurement, Kuznet's inverted-U hypothesis,

Suggested Readings

1. Todaro M.P. and Stephen C. Smith, *Economic Development*, Pearson Education in South Asia, 5th edition 2011.
2. Debraj Ray, *Development Economics*, Oxford University Press, 2009.
3. Lekhi, R.K. and Singh, J., *Economics of Development and Planning*, Kalyani Publishers, 2014.
4. Jhingan, M.L. and Jhingan, B.K., *The Economics of Development and Planning*, 42nd Edition, Vrinda Publication,

5. Ahuja, H.L., *Development Economics: A Critical Study of Economic Growth, Development and Environment*, First edition, S. Chand Publication, 2016.
6. Thirlwall A.P. *Growth and Development*, Palgrave Macmillan, 4th edition, 1989.
7. Basu, K., *Analytical Development Economics: The Less Developed Economy Revisited*, Oxford University Press India, 1998
8. Hayami, Y. and Godo, Y., *Development Economics: From the Poverty to the World of Nations*, 3rd Edition, Oxford University Press, 2005.
9. Thirlwall, A.P. and Lopez, P.P., *Economics of Development: Theory and Evidence*, 10th edition, Red Globe Press, 2017.
10. Meier, G. and James E. Rauch. *Leading Issues in Economic Development*, Oxford University Press. 7th edition 2000.
11. Wayne Nafziger E. *Economic Development*, Cambridge University Press, 5th edition, 2012.
12. Hendrik Van Den Berg, *Economic Growth and Development*, 3rd edition, World Scientific Publishing Co Pte Ltd, 2016
13. Amartya Sen, *Development as Freedom*, OUP, 2000
14. 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.
15. A.K Bagchi. *The Political Economy of Underdevelopment*, Cambridge University Press, 1982.
16. S. Fukuda-Parr and A.K. Shiva Kumar. *Readings in Human Development*. Oxford University Press.
17. *Human Development Report*. Relevant years.