

SNDT Women's University
1, Nathibai Thackersey Road, Mumbai- 400020

M. A. Economics - 2020 - 21

Faculty Name: Humanities

Name of the Programme: M. A.

Total Credits: 80

Eligibility:

A student is being eligible for admission to M.A. in Economics as per the eligibility norms prescribed by the university.

Programme Specific Outcomes (PSOs)

The objective of the course is to introduce the students to

- Understand the concepts and application of the advanced theories in Economics.
- Be equipped to understand analytical aspects of the subject.
- Understand the tools of empirical analysis in the subject.
- Critically reflect and interpret the economic reality.

General Instructions:

- The M. A. programme is of 80 credits. There are five courses per semester. Each course will be of 4 credits. Each semester is of 20 credits. (5 x 4 = 20 Credits)
- For the M. A., courses are classified into Core (compulsory) Courses, Elective (optional) courses and CBCS (Choice Based Credit System) courses.
- In Semester I, and Semester II, students have to study total five courses in each semester.
- In Semester III, if student selects 'Research Component' as elective course, then she has to complete 2 courses of Research Component i.e. total 8 credits.
- In semester IV, if student selects 'Internship Component' as elective course, then she has to complete 2 courses of Internship Component i.e. total 8 credits.
- Students from any disciplines can opt for CBCS courses.
- In semester I, II, III and IV, students have an option to choose CBCS course each of 4 credits.

Evaluation:

- For Economics each course will have 25% Internal Evaluation and 75% External Evaluation.
- Minimum 40% marks are required in Internal & External assessment separately for passing in each Course.
- Student needs to clear internal assessment to be eligible to appear for semester end (external) examination.

Course Structure of Department of Economics as per University Format

Scheme: Semester I

Sr. No	Code No.	Subjects	L	C r.	P/ T	D	TP (E)	Intern al	P/ V	T
Core Courses										
1		Microeconomics-I	4	4	--	2.5	75	25	--	100
2		Economics of Growth and Development -I	4	4	--	2.5	75	25	--	100
3		Public Economics	4	4	--	2.5	75	25	--	100
		Elective Course: (any one of the following)								
4		Industrial Economics	4	4	--	2.5	75	25	--	100
4		Environmental Economics								
		Elective Course /CBCS (any one of the following)								
5		Demography	4	4	--	2.5	75	25	--	100
5		Mathematical Economics								
		Total	20	20	--		375	125	--	500

Scheme: Semester II

Sr. No	Code No.	Subjects	L	Cr.	P/ T	D	TP (E)	Internal	P/ V	T
		Core Courses								
1		Microeconomics-II	4	4	--	2.5	75	25	--	100
2		Economics of Growth and Development -II	4	4	--	2.5	75	25	--	100
3		Research Methodology	4	4	--	2.5	75	25	--	100
		Elective Course:								
		(any one of the following)								
4		Agricultural Economics	4	4	--	2.5	75	25	--	100
4		Statistics for Economics								
		Elective Course /CBCS								
		(any one of the following)								
5		Banking & Financial System	4	4	--	2.5	75	25	--	100
5		Econometrics								
		Total	20	20	--		375	125	--	500

Scheme: Semester III

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses:										
1		Macroeconomics-I	4	4	--	2.5	75	25	--	100
2		Indian Economy-I	4	4	--	2.5	75	25	--	100
3		History of Economic Thoughts	4	4	--	2.5	75	25	--	100
Elective Course: (any one of the following)										
4		Research Component-I (Writing Research Proposal & Review of Literature)	4	4	--	--	--	50	50	100
4		Rural Development	4	4	--	2.5	75	25	--	100
Elective Course /CBCS (any one of the following)										
5		Research Component-II (Dissertation & Viva Voce)	4	4	--	--	--	50	50	100
5		Economy of Maharashtra	4	4	--	2.5	75	25	--	100
		Total	20	20	--		225	175	100	500

Scheme: Semester IV

Sr. No	Code No.	Subjects	L	C r.	P/T	D	TP (E)	Internal	P/V	T
Core Courses:										
1		Macroeconomics-II	4	4	--	2.5	75	25	--	100
2		Indian Economy-II	4	4	--	2.5	75	25	--	100
3		International Economics	4	4	--	2.5	75	25	--	100
Elective Course: (any one of the following)										
4		Internship Component-I	4	4	--	--	--	50	50	100
4		Urban Economics	4	4	--	2.5	75	25	--	100
Elective Course /CBCS (any one of the following)										
5		Internship Component-II	4	4	--	--	--	50	50	100
5		Economics of Co-operation	4	4	--	2.5	75	25	--	100
		Total	20	20	--		225	175	100	500

L = No. of Lectures / week, Cr. = Credits, P/T = Practical / Tutorial in hrs., D = Duration of Theory paper for Examination in hrs., TP (E) = Theory paper for Examination marks, Internal = Internal Assessment in marks, P / V = Practical / Viva Voce – marks, T = Total.

Semester 1

1. Microeconomics-I

Objectives

- To enhance theoretical ability of the students.
- To build a deeper understanding of real world microeconomics.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	(A) Basic Concepts: Economic models: Micro and macro model examples, Production Possibility curve (PPC), Endogenous & Exogenous variables, Extension and increase in demand and supply, Price, income and cross elasticity of demand with numerical exercises and classification of goods into substitutes and complementary, Economic static and dynamics from micro and macroeconomics. (No long question to be asked from this) (B) Consumer Behaviour: Optimization problem based on Hick's-Allen ordinal utility approach: Budget constraint, consumer equilibrium, Price effect split into income and substitution effect based on Slutsky and Hicks methods, Derivation of demand curve from PCC in case of normal, inferior and Giffen goods. Behavioristic ordinalistic approach to demand, Strong and weak ordering hypotheses, Derivation of demand law based on Samuelson's Revealed Preference theory. Demand theorem based on Hicks Revision of demand theory and direct consistency test. Marshall's and Hick's concepts of consumer's surplus.	1	15	25
2	Theory of production and cost: Concept of production function: short-run, long-run, Cobb-Douglass production functions with characteristics, Concepts of iso-quants and iso-cost, Stages in the law of variable proportions and laws of returns to scale, Least cost combination of inputs: constrained cost minimization and output maximization rules, Short run and long-run cost concepts, with explanation U-shaped and L-shaped LAC Curves.	1	15	25
3	General Equilibrium Analysis: Difference between general and partial equilibrium, Interdependence nature of markets with	1	15	25

	examples, Edgeworth box diagram illustrating general equilibrium model, General equilibrium of consumption, production separately and simultaneously, Externalities in consumption, production and how they together cause market failure, Public goods: their features and market failure.			
4	Welfare Economics: Concept and conditions of Pareto Optimality in welfare economics, Hicks-Kaldor-Scitovsky's Compensation Principle, Bergson-Samuelson's Social welfare function, Arrow's Impossibility Theorem of social choice.	1	15	25

Course Outcomes

- To provide advance skills in Microeconomics.
- To enable the students to analyse the economic behavior of individuals, firms and markets.
- To understand welfare economics and general equilibrium in closed and open systems.

References:

- Arrow, K.J. and M.D. Intriligator (Eds) (1981), Handbook of Mathematical Economics, Vol, I North Holland, Amsterdam.
- Braodway, R.W. and N. Bruce (1984), Welfare Economics, Basil Blackwell , London.
- Da Costa, G.C. (1980) , Production, Prices and Distribution, Tata McGraw Hill, New Delhi.
- Hall of India, New Delhi.
- Hansen, B. (1970), A Survey of General Equilibrium Systems, McGraw Hill New York.
- Henderson, J.M. and R.E. Quandt (1980), Microeconomic Theory: A Mathematical Approach, McGraw Hill, New Delhi.
- Hirshleifer, J. and A. Glazer (1997), Price Theory and Applications, Prentice
- Koutsoyiannis, A. (1979), Modern Microeconomics, (2nd Edition), Macmillan Press, London.
- Kreps, David M. (1990), A Course in Microeconomic Theory, Princeton University Press, Princeton.
- Layard, P.R.G. and A.W. Walters (1978), Microeconomic Theory , McGraw Hill, New York.
- Pindyck Robert S. and Rubinfeld () , Microeconomics
- Salvatore D., Microeconomics
- Sen , A. (1999) , Microeconomics : Theory and Applications, Oxford University Press, New Delhi.
- Stigler, G. (1996), Theory of Price, (4th Edition), Prentice Hall of India, New Delhi.
- Varian , H. (2000), Microeconomic Analysis, W.W. Norton , New York.

2. ECONOMICS OF GROWTH AND DEVELOPMENT-I

OBJECTIVES:

- To learn basic concepts and theories of economic development will gain the sustained interest of the developing countries.
- To study the various economic development models and theories and compare between them.
- To enable the learners to application of the theories receptively development stages of the developed and developing economies.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Basic Concepts: Economic growth and development- Factors affecting economic development- Characteristics of developed and developing countries Measurement of Development-Indices of development – PQLI, HDI, Gender Adjusted HDI - Inter country comparisons of development- Development Gap.	1	15	25
2	Models of Economic Growth: Neo- classical – Solow and Meade- Joan Robinson's Growth Model-Hicks-Harrod-; learning by doing approach, Harrod- Domar Model, Technological progress- embodied and disembodied technical progress-Kaldor and Pasinetti- Two sector model – Endogenous growth.	1	15	25
3	Theories of Economic Growth : Theories of growth and development : Circular Causation, Unlimited Supply of Labour, Ranis and Fei model, Big Push, Balanced and Unbalanced Growth, Critical Minimum Effort, Low Level Equilibrium Trap, Dualism	1	15	25
4	Theories of Economic Development: Classical theory of development- contributions of Adam Smith, Ricardo, Malthus and James Mill, Karl Marx and development of capitalistic economy- theory of social change, surplus value and profit; Schumpeter and capitalistic development, innovation- role of credit, profit and degeneration of capitalism, Structural analysis of development.	1	15	25

Course Outcomes

- To acquire greater diversity, efficiency and equity in the subject.
- To understand many approaches to economic development.
- To get exposed to diverse theories and models on economic development.

References:

- Adelman, I. (1961), Theories of Economic Growth and Development, Stanford University Press, Stanford.
- Barrow, R. and X. Sela – I, Martin, Economic Growth, McGraw Hill, New York.
- Behrman, S. and T.N. Srinivasan (1995), Handbook of Development Economics, Vol.3, Elsevier, Amsterdam.
- Chakravarti, S. (1982), Alternative Approaches to the Theory of Economic Growth, Oxford University Press, New Delhi.
- Chenery, H. and T.N. Srinivasan (Eds.) (1989), Handbook of Development Economics, Vols. 1& 2, Elsevier, Amsterdam.
- Ghatak, S. (1986), An Introduction to Development Economics, Allen and Unwin, London.
- Gillis, M., D.H. Perkins, M.Romer and D.R. Snodgrass (1992), Economics of Development, (3rd Edition), W.W. Norton, New York.
- Gimmell, N. (1987), Surveys in Development Economics, Blackwell, Oxford.
- Grossman, G. and E. Helpman (1991), Innovation and Growth in the Global Economy, MIT Press, Cambridge, Mass.
- Hayami, Y. (1997), Development Economics, Oxford University Press, New York.
- Hayami, Y. and M. Akoi (Eds.) (1998), The Institutional Foundations of East Asian Economic Development, Macmillan, London.
- Higgins, B. (1959), Economic Development, W.W.Norton, New York.
- Hirsch, A.O. (1958), The Strategy of Economic Development, Yale University Press, New York.
- Hogendorn, J. (1996), Economic Development, Addison, Wesley, New York.
- Jadhav, N. (1995), Monetary Economics for India, Macmillan, New Delhi.
- Kahkonen, S. and M. Olson (2000), A New Institutional Approach to Economic Development, Vistaar.
- Kindleberger, C.P.(1977), Economic Development, (3rd Edition), McGraw Hill, New York.
- Kuznets, Simon (1971), Economic Growth of Nations, Total Output and Production Structure, Harvard University Press, Cambridge, Mass.
- Lewis, W.A. (1955), The Theory of Economic Growth, George Allen and Unwin, London.
- Little, I.M.D. (1982), Economic Development : Theory and International Relations, Basic Books, New York.
- Mehrotra, S. and J. Richard (1998), Development with a Human Face, Oxford University Press, New Delhi.
- Meier, G.M. (1995), Leading Issues in Economic Development, (6th Edition), Oxford University Press, New Delhi.
- Thirwal, A.P. (1999), (6th Edition), Growth and Development, Macmillan, U.K.

3. Public Economics

Course Objectives:

- To familiarize students about the rationale for and role of government intervention in economic activities and how the government makes economic decisions.
- To analyze role of fiscal tools and to understand the nature and working of fiscal policy,
- To make students learn types of taxes, government expenditure programmes, public debt and its effects, deficit financing, federal finance and stabilization instruments.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Public Economics: An Introduction: Nature and scope of public economics, Private, public and merit goods, nature of public goods and role of positive and negative externalities, public goods and market failure, Role of public sector and private sector in the context of changing conditions of India's mixed economy, private preference for public goods, principle of maximum social advantage.	1	15	25
2	Incidence and theories of taxation: Incidence and impact of tax, types of incidence, Dalton's theory of incidence of tax divided between buyers and sellers based on supply and demand elasticity, Benefit principle of taxation and Ability to pay approaches to taxation, optimal taxation, excess burden of indirect taxes over direct tax, Progressive, proportional and regressive tax with their relative merits.	1	15	25
3	Public revenue and expenditure: Sources of public revenue, tax and non-tax revenue, Trend in revenue of central government from direct and indirect taxes in India, Review of tax reforms and its impact on direct and indirect taxes in India since 1991, Introduction of GST on India's tax system, taxation on agriculture, Trends in public expenditure of central and state governments since 1991, Effect of public expenditure in economic development and economic stability.	1	15	25
4	Fiscal policy, Public debt and Federal Finance: Objectives of fiscal policy in the context of full-employment, anti-inflation and economic growth and resource mobilization, Fiscal reforms in	1	15	25

	India, Fiscal federalism in India, vertical and horizontal imbalance, constitutional provisions of transfer of resources through Finance Commission, Important provisions of resource transfer since the constitution of 14 th Finance Commission, Meaning and effects of public debt, Internal and external burden of debt, Principles of debt repayment and management.			
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Course Outcomes:

- Understand the role of modern state in a market oriented Economy.
- Learn the nature of fiscal policy in India
- Comprehend the role of finance commission of India.
- Get knowledge on various issues relating taxes and programs of government expenditure and understand the rationale of public debt and deficit financing.

References:

- Musgrave, R.A. and P.B. Musgrave (1976), Public Finance in Theory and Practice, McGraw Hill, Kogakusha, Tokyo.
- Musgrave; R.A., (1959), The Theory of Public Finance, McGraw Hill, Kogakusha, Tokyo.
- Bhargava, P.K. (1976), Taxation of Agriculture in India, Vora and Co., Bombay.
- Bhargava, P.K. (1991), India's Fiscal Crisis, Ashish Publishing House, New Delhi
- Bhatia, H.L. (2008). *Public finance* (28th Ed.). New York: Vikas Publishing House PVT Ltd..
- Chelliah, R.J. (Ed)(1997), Towards Sustainable Growth, Oxford University Press, New Delhi.
- Datt, R. (Ed.) (2001), Second Generation Economics Reforms in India, Deep & Deep Publications, New Delhi.
- Goode, R.(1986), Government Finance in Developing Countries, Tata McGraw Hill, New Delhi.
- Grivastava, D.K.(Ed.) (2000), Fiscal Federalism in India, Har-Anand Publications Ltd., New Delhi.
- Sury, M. M. (2010). Finance Commissions and Fiscal Federalism in India. New Delhi: New Century Publications.
- Jain, I. (1988), Resource Mobilization and Fiscal Policy in India, deep & Deep Publications, New Delhi.
- Lekhi R K, Public Finance, Kalyani Publishere, New Delhi.

4. INDUSTRIAL ECONOMICS

Objectives:

- The objective is to provide a thorough knowledge about the economics of industry.
- The papers deals with the industrial policy framework in a cogent and analytical manner, particularly in the Indian context.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Industrial Organisation: Market – Structure – Conduct – Performance – Theories of Product Pricing – Administered prices – Theories of Location – Theories of Growth of firms – Financial Ratios – Methods of Investment Appraisal	1	15	25
2	Industrial Policy, Industrial Finance and Development: Overview of industrial policy prior to 1991 - Industrial Policy Resolution of 1991 and changes thereafter - Trends and pattern in national and regional industrial development - Problems of industrial sector - industrial sickness- imbalance in regional development - industrial pollution - Remedial measures Types and Sources of industrial finance, sources and trends of institutional finance (IFCI, SFCs, IDBI, SIDBI) Commercial Banks.Problems of Industrial finance - Remedial measures	1	15	25
3	Private, Public and Small Scale and External Sectors Role, Performance and Problems of Private, Public and small scale Sectors – Privatization and Disinvestment. Trends and pattern of FDI in India-Trends and pattern of Indian industry abroad-M&A- Export and import component of Indian industrial sector	1	15	25
4	Some Selected Industries: Performance, problems and remedial measures of selected industries Iron and Steel - Cement - Coal - Engineering Goods - Textiles - Information and Technology	1	15	25

Course Outcomes:

- To understand the basic issues such as productivity, efficiency, capacity utilization and a contemporary world with globalization and liberalization
- To provide knowledge to the students on the debates involved in the industrial development of India.

References:

- Bagchi, A. and M. Banerjee (Eds.) (1979), Change and Choice in Indian Industry, Bagchi publications, Calcutta.
- Bain, J.S. (1996), Industrial Organization, Cheltenham, U.K.
 - Barthwal, R.R. (1985), Industrial Economics, Wiley Eastern Ltd. , New Delhi
- Bhagwati J. and P. Desai (1972), India : Planning for Industrialization, Oxford University Press, London.
- Brahmananda, P.R. and V.R. Panchamukhi (Eds.) (1987), The Development Process of the Indian Economy, Himalaya Publishing House, Bombay.
- Chakravarty, S. (1987), Development Planning : The Indian Experience, Oxford University Press, New Delhi.
- Cherunilam, F. (1994), Industrial Economics : Indian Perspective, Himalaya Publishing House, Mumbai
- Das, N. (1969), The Public Sector in India, Vora and Company, Bombay.
- Dasgupta, P.S. Marglin and A. Sen (1972), Guideline for Project Evaluation, Unido Publications, New York.
- Datta, B. (1992), Indian Planning at the Crossroads, Oxford University Press, New Delhi.
- Dhameeja, N. and K.S. Sastry (1998), Privatization : Theory and Practice, A.H. Wheeler, New Delhi.
- Fog, B. (1959), Industrial Pricing Policies, North Holland, Amsterdam.
 - Gadgil
- Ghosh, P.K. (1977), Government and Industry, Oxford University Press, New Delhi.
- Gupta, L.C. (1996), The Changing Structure of Industrial Finance in India, Oxford University Press, New Delhi.
- Hay, D. and Morris, D.J. (1979), Industrial Economics : Theory and Evidence, OUP, New Delhi Publishers, New Delhi.
- Koutsoyiannis, A. (1979), Modern Microeconomics, Macmillan, New York.
- Mamoria and Mamoria (2000), Dynamics of Industrial Relations in India (15th Edition) Himalaya Publishing House, Mumbai.
- Martin, S. (1989), Industrial Economics – Economic Analysis and Public Policy, Macmillan Publishing Co. New York.
 - Pandey, I.M. (), Financial Management,
- Rama Murti, R. and R. Verman (Eds.) (1991), Privatization and Control of State-owned Enterprises, The World Bank, Washington.
- RBI, Report on Currency and Finance (Annual reports)
- Sandesara, J.C. (1992), Industrial policy and Planning- 1947-1991 : Tendencies, Interpretations and Issues, Sage Publications, India Pvt. Ltd., New Delhi.
- Sandesara, J.C. (1982), Industrial Growth in India ; Performance and Prospects, Lala Lajpat Rai College, Bombay.
- Sen, R. and B. Chatterjee (2001), Indian Economy : Agenda for the 21st Century (Essays in honour of professor P.R. Brahmananda), Deep and Deep Publications Pvt. Ltd., New Delhi.
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- Jalan, B. (1996), India's Economic Policy, Viking, New Delhi
- Joshi, V. and I.M.D. Little (1999), India : Macro Economics and Political Economy : 1964-1991, Oxford University Press, New Delhi.
- Kamien, M.T. and N.L. Schwartz (1982), Market Structure and Innovation, Cambridge University Press, Cambridge.
- Kelkar, V.L. and Rao, Bhanoji V.V. (eds), (1996), India development Policy Imperatives, Tata McGraw Hill, New Delhi
- Khan, M.Y. (1981), Indian Financial Systems, Allied

5. Environmental Economics

Objectives:

- Identify and analyze the key issues related to economic growth with environmental and ecological constraints.
- Demonstrate the use of economic theory in analyzing contemporary environmental issues and to identify valuation techniques to measure environmental problems

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Basic Environmental Issues: Environment and Ecology; Linkages between Ecology, Environment and Ecosystems; Material Balance Approach; Principles of Uncertainty, Irreversibility, Inter-Temporal Efficiency, Inter-Generational Equity; Environment-Development Trade-Offs; Environmental Costs of Economic Growth, Limits to Growth; Sustainable Development — Concepts and Indicators; Environmental Kuznets Curve.	1	15	25
2	Welfare Economics: Social Sectors and Environment Pareto optimality and competitive equilibrium: Market failures; Theories of Externality and Public Goods, Solutions to Externality, Coase's Theorem, Property Rights and Transaction Costs; Free Rider's Problem, Optimal Provision of Public Goods — Lindahl's Equilibrium; Common Property Resources – Tragedy of Commons. Land use: Deforestation, Urbanization and their Impact on Environment; Air and Water Pollution; Pigovian Tax and Subsidy on Pollution Control.	1	15	25
3	Environmental Valuation: Environmental damages/Benefits, Social Cost Benefit Analysis; Definitions: Use Value, Option Value and Non-Use Values — Total Economic Value. Valuation Techniques – Market and Non-Market: - Scientific, Behavioural and Technological - Production Based, Contingent	1	15	25

	Valuation, Hedonic-Pricing, Travel Cost Method, Risk Assessment, Environmental Impact Assessment; Valuation of Land, Forest and Mineral Resources.			
4	Economics of Resource Management : Theories of Optional Use of Exhaustible and Renewable Resources; Integrated Environmental and Economic Accounting and the Measurement Environmentally Corrected GDP; Ecological Footprint Analysis; Comprehensive Wealth and Genuine savings; Global Environmental Governance.	1	15	25

Course Outcomes:

- Understanding of various roles the environment plays in the economic process with merits and demerits of market based and control mechanism.
- Recognize and apply valuation techniques and undertake a basic environmental cost benefit analysis.
- Analyze the issues involved in meeting the challenges of climate change.

References

- Baumol, W.J. and W.E. Oates (1988): The Theory of Environmental Policy (2e), CUP, Cambridge.
- Fisher, A.C. (1981): Resource and Environmental Economics, CUP, Cambridge
- Hanley, Shogren and White (1997): Environmental Economics in Theory and Practice, Macmillan.
- Kolstad, C.D. (1999): Environmental Economics, OUP, ND.
- Pearce, D.W. and R. Turner (1991): Economics of Natural Resource Use and Environment, John Hopkins Press, Baltimore.
- Tietenberg, T. (1994): Environmental Economics and Policy, Harper Collins, NY.
- Arrow, K.J., P. Dasgupta, I.H. Goulder, K.J. Mumford and K. Oleson (2012): "Sustainability and Measurement of Wealth", Environment and Development Economics, 17(3):317-53.
- Dorfman and Dorfman (1977): Economics of the Environment (2e), W.W. Norton, NY.
- A. J. and A.D. Zeeuw (Ed.) (2002): Recent Advances in Environmental Economics, Edward Elgar, Cheltenham, U.K. 10.
- Muthukrishnan, S. (2010): Economics of Environment, PHI Learning Private Ltd, New Delhi 5. Sengupta, R. (2013): Ecological Limits and Economic Development: Creating Space, Oxford University Press, New Delhi.

6. DEMOGRAPHY

OBJECTIVES:

- To enable the learners to gain a clear understanding of demographic concepts, theories, and processes to aware of the importance of population in economic development.
- To acquaint the learners to gain a sound command over the basic tenets of demography as well as key demographic issues and illustrations in India's context.
- To enable the learners to understand the population dynamics that leads to the evolution of economic and population policies.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Population and Development Meaning, Scope and relevance of Demography, Structure, distribution and sources of Population data in India. Population growth and economic development, Theories of population- Malthus optimum theory of population, Theory of demographic transition, India's experience Views of Medows, Simon and Enke.	1	15	25
2	Structure of Population Population Size and Trends in the World population- Trends in population in India, states in India Components of population growth and their interdependence Structure of population – Age structure, Age pyramids- determinants of age structure, Population Ageing and its socio-economic consequences Sex structure- sex ratio- sex ratio of child population - factors determining sex ratio, Sex ratio imbalance in India and future scenario- Factors responsible for declining sex ratio in India Characteristics of population- Religion, marital status, education, economic status- employments and occupation Distribution of rural-urban population	1	15	25
3	Fertility, Nuptiality and Mortality Basic Measures of Fertility – Period and Cohort Measures – Child Woman Ratio, Crude Birth Rate, General Fertility Rate, Age Specific Fertility Rate, Total Fertility Rate, Gross Reproduction Rate, Net Reproduction Rates, Trends in Fertility in India, fertility-socio economic determinants of fertility Nuptiality Analysis –Mean Age at Marriage, Singulate Mean Age at Marriage – Indian Experience Basic Measures of Mortality - Crude Death Rate, Age Specific Death Rate, Standardization of Death Rates, Life Table- Life Expectancy, Special measures- Infant Mortality Rates, Maternal Mortality Rates, Trends in Mortality and Infant mortality and Maternal Mortality Rates in India- factors influencing Mortality	1	15	25
4	Sustainable Development and population Policy	1	15	25

Contemporary debates on population, environment and development-population and sustainable development Population, Economy and Environment linkages Evolution of Population Policies in India – The shift in population control to family welfare, to women empowerment: Role of ICPD Evolution of population programmes-Family planning programmes, Reproductive Health Programme, National Rural Health Programme Family Planning Strategies and their outcomes : Reproductive Health, maternal nutrition and child health policies, population and strategies for human development of different social groups: Social impact of new reproductive technologies and their regulation –The New Population Policy, Tasks before the National Population Commission.			
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Course Outcome

- This paper enlightens the student on the quantitative and qualitative aspects and characteristics of the population through various demographic techniques.
- The issues pertaining to sex ratio, increasing urbanization and components of urbanization like migration and natural increase, changing age structure which are of contemporary importance are also the focus of this paper.

References:

- Bhende Asha, kanitkar Tara (2001). *Principles of Population Studies*. Himalaya Publishing House.
- Shrinivasan K.(1998). *Basic Demographic techniques and Applications*. Sage Publications.
- Sivaramkrishnan K.C. kundu Amitabh and Sing N. *A handbook on Urbanisation in India*. Oxford University Press
- Shyrock S, Siegel JS, Stockwell EG.(1976). *The Methods and Materials of Demography*. Academic Press. 1976.
- UNFPA. (2007). *Urbanization: The Challenge and the Promise. State of World*
- United Nations (2001). *World Population Monitoring: Population Environment and Development*.
- www.censusindia.net

Articles/ Papers

- Birdsall N 1988 Economic Approaches to Population Growth and Development. In: Chenery H B and Srinivasan T N (eds.) *Handbook of Development Economics*. Elsevier Science Publications, Amsterdam
- Guilmoto Christophe Z “Characteristics of Sex Imbalance in India and Future Scenario”
www.unfpa.org/gender/case_studies.htm

- Kulkarni P.M. Shaping India's Population Policy and Programme: Internal Factors and External Influences, Artha Vijnana, LI (1) 2009: pp.12-38.
- Kulkarni P.M. "Towards an Explanation of India's Fertility Transition"-George Simmons Memorial Lecture November 2011
www.iasp.ac.in/pdf/simmons%20memorial%20Lecture.pdf
- Kulkarni P.M. "Issues of Data Requirements in the context of the Demographic Transition in India" Country Study paper for India
www.cwsc2011.gov.in/papers/demographic_transition/paper_4/pdf

7. Mathematical Economics

Objectives

- To equip students with economic concepts and theories interpreted with the help of mathematical tools and techniques to refine verbal logic.
- To introduce various mathematical techniques/methods/models related to economic theory like consumer theory, theory of production, product pricing in the decision making by firms in different market structures.
- To make use of calculus and integration in economic analysis relating consumers and producer's surplus, optimization behavior of firms and consumers and so on.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Derivative and applications in economics: Functions and its types, Rules of differentiation with one variable case, maxima and minima, interpretation of revenue, cost, profit maximization, elasticity of demand and supply, Partial derivatives: its rules and total differential. Budget constraint and equilibrium of consumers, producer's constrained cost minimization and output maximization rules using Lagrange multiplier method, Cobb-Douglas Production function.	1	15	25
2	Integral calculus: Techniques of definite and indefinite integration, consumer's surplus and producer's surplus with illustrations using definite integrals, Lorenz curve inequalities and Gini coefficients with illustrations, consumption functions, investment functions, cost functions obtained using integration.	1	15	25
3	Matrix Algebra and input-output model: Rules for addition, subtraction and multiplication of matrices, types of matrices, Transpose of a matrix and its properties. Determinants: properties, inverse of matrix and solution of linear equations with examples, Cramer's rule	1	15	25

	and its uses to solve equations. Solution of input-output analysis in Leontief open input-output model with two sectors and Hawkin-Simion conditions.			
4	Market equilibrium: Shut down point with illustrations, Monopoly equilibrium with and without taxation and subsidy, Equilibrium under price discrimination and multi-plant monopolist, Duopoly Solutions under Cournot model and Cartels (Market sharing and joint profit maximizing cartels).	1	15	25

Course Outcomes:

- Determine the optimal quantity combination of goods by consumers and constrained output maximization and cost minimization behavior of firms while producing goods. .
- Learners can compute equilibrium prices, outputs and profits under different market structures.
- Evaluate effect of taxation and subsidies on firm's equilibrium price, output and profits.
- Use mathematical tools in economic analysis.

References:

- Chiang, Alpha C., Fundamental Methods of Mathematical Economics, McGraw Hill
- Rosser, Mike, Basic Mathematics for Economists, Routledge, Taylor & Francis Group
- Monga, G. S. 91972), Mathematics and Statistics for Economists, Vikas Publishing House, New Delhi.
- R G D Allen, Mathematical Economics
- A C Chiang, Mathematical Economics
- Henderson & Quadant, A Mathematical Treatment to Microeconomics
- A Koutsoyiannis, Modern Microeconomics
- MeheS C Patra, Mathematical Techniques for Economic Analysis
- ta & Mednani, Mathematics for Economists
- Apostol, T. (1991): Calculus, Volumes 1 and 2, Wiley.
- Simmons, G. and Krantz, S. (2006): Differential Equations, McGraw Hill.
- Baumol, W. J. (1984), Economic Theory and Operations Analysis, Prentice Hall, Englewood Cliffs, New Jersey.

Semester 2

1. Microeconomics: II

Objectives

- To enhance theoretical ability of the students
- To build a deeper understanding of real world microeconomics.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Market for product Pricing: Product pricing under Monopoly and Perfect competition: A comparative analysis, Welfare aspect under monopoly and monopoly equilibrium under Dumping, Fixation of price and output in different markets by a discriminating monopolist, Short run and long run equilibrium under monopolistic competition and Excess Capacity, Comparing long-run equilibrium between perfect competition and monopolistic competition. Oligopoly: features and reason for price indeterminateness, why price rigidity? Models of price and output determination under oligopoly: Cournot model, Kinked demand curve model, Bertrand and Chamberlin's model, cartels and Price leadership model Game theoretic approach to oligopoly: Two-person zero sum game with example and Nash equilibrium.	1	15	25
2	Behavioral Theories of Firm: A critical analysis of traditional theory of firm: Marginal analysis and profit maximization. Baumol's Sales Revenue Maximization Model, Full cost pricing rule, Bain's Theory of limit pricing, Sylos-Labini Model	1	15	25
3	Market for factor pricing: Marginal productivity theory of factor pricing, Factor pricing when there is perfect competition prevailing in both product and factor markets, Factor pricing under imperfect competition in both product and factor markets, Determination of factor price when there is perfect competition in product market but imperfect competition in factor market, Determination of factor price when there is perfect competition in factor market but imperfect competition in product market, Product exhaustion theorem (Euler's Theorem) with examples.	1	15	25
4	Asymmetric information and choice under uncertainty:	1	15	25

	Market for lemons and adverse selection, Asymmetric information and market failure, Moral hazard, Market signaling and principal-agent problem. Attitude towards risk, risk lover and risk aversion, Measuring risk: expected value and risk return trade-off, Mean and variance model of asset choice, Neumann-Morgenstern method of constructing utility index.			
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Course Outcomes:

- The course is designed to provide advance skills in Microeconomics.
- This paper analyses the product pricing of firms and markets under monopoly and monopolistic competition.
- It is mainly concerned with the various aspects of behavioural economics, factor pricing, choice and theories of uncertainty and information.

References:

- Arrow, K.J. and M.D. Intrilligator (Eds) (1981), Handbook of Mathematical Economics, Vol, I North Holland, Amsterdam.
- Braodway, R.W. and N. Bruce (1984), Welfare Economics, Basil Blackwell , London.
- Da Costa, G.C. (1980) , Production, Prices and Distribution, Tata McGraw Hill, New Delhi.
- Hall of India, New Delhi.
- Hansen, B. (1970), A Survey of General Equilibrium Systems, McGraw Hill New York.
- Henderson, J.M.and R.E. Quandt (1980), Microeconomic Theory:A Mathematical Approach, McGraw Hill, New Delhi.
- Hirshleifer, J. and A. Glazer (1997), Price Theory and Applications, Prentice
- Koutsoyiannis, A. (1979), Modern Microeconomics, (2nd Edition), Macmillan Press, London.
- Kreps, David M. (1990), A Course in Microeconomic Theory, Princeton University Press, Princeton.
- Layard, P.R.G. and A.W. Walters (1978), Microeconomic Theory , McGraw Hill, New York.
- Pindyck Robert S. and Rubinfeld () , Microeconomics
- Salvatore D., Microeconomics
- Sen , A. (1999) , Microeconomics : Theory and Applications, Oxford University Press, New Delhi.
- Stigler, G. (1996), Theory of Price, (4th Edition), Prentice Hall of India, New Delhi.
- Varian , H. (2000), Microeconomic Analysis, W.W. Norton , New York.

2. ECONOMICS OF GROWTH AND DEVELOPMENT-II

OBJECTIVES:

- To study the role of physical and social infrastructure plays in a country's development need not be reiterated.
- To enable the learners to know the sectoral aspects and their role and present status in the development.
- To enable the learners to understand the role of macro policies and economic planning in development of Indian economy.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Social , Institutional and Infrastructure Aspects: Role of Infrastructure in economic development and its importance Population as limits of growth and as ultimate resource- Population, Poverty and Environment, Human Resource Development (HRD) - Development and Quality of Life- Education, Health, Nutrition, their status in India	1	15	25
2	Sectoral Aspects of Development: Agriculture- Role of agriculture in economic development, Productivity in Agriculture, New technology and sustainable agriculture. Industry- Rationale and pattern of industrialization in developing countries, The choice of techniques and appropriate technology. Labour- Labour markets and their functioning in developing countries.	1	15	25
3	Trade and Economic Development: International trade as engine of growth- Prebisch, Singer and Myrdal thesis-Free vs. Protective trade- Export-led growth, Dual Gap analysis- Balance of Payments – Protective policies- WTO and developing countries.	1	15	25
4	Macro Policies, Planning and Development: Monetary and fiscal policy- Foreign Direct Investment (FDI) – Multi-National Corporations (MNCs)- IMF and World Bank and Developing Countries. Role of planning – Types of planning – Review of Indian Plans since 1991.	1	15	25

Course Outcomes:

- Besides hardcore economic prescriptions to development, students will be made familiar with concern such as education, health and infrastructural development, which have found a place of pride in explaining the preferences of various economies.
- Modules incorporated in this course are devoted to the economic growth and development, social and institutional aspects with special reference to developing countries.

References:

- Barrow, R. and X. Sela – I, Martin, Economic Growth, McGraw Hill, New York..
- Bhagwati, J. and P. Desai (1970), India : Planning for Industrialization, Oxford University Press, London.
- Brahmananda, P.R. and C.N. Vakil (1956), Planning for an Expanding Economy, Vcra and Co., Bombay..
- Chakravarati, S. (1987), Development Planning : The Indian Experience, Clarendon Press, Oxford.
- Chenery, H. and T.N. Srinivasan (Eds.) (1989), Handbook of Development Economics, Vols. 1& 2, Elsevier, Amsterdam.
- Gimmell, N. (1987), Surveys in Development Economics, Blackwell, Oxford.
- Killick, T. (1995), IMF Programmes in M Developing Countries : Design and Impact, Routledge, London.
- Kuznets, Simon (1971), Economic Growth of Nations, Total Output and Production Structure, Harvard University Press, Cambridge, Mass..
- Meadows, D.H. et. al. (1972), The Limits to Growth, Universe Books, New York.
- Mehrotra, S. and J. Richard (1998), Development with a Human Face, Oxford University Press, New Delhi.
- Meier, G.M. (1995), Leading Issues in Economic Development, (6th Edition), Oxford University Press, New Delhi.
- Mishan, E.J. (1975), Cost-Benefit Analysis, (2nd Edition), Allen and Unwin, London.
- Myint, H. (1971), Economic Theory and Underdevelopment Countries, Oxford University Press, New York.
- Myint, Hla (1965), The Economics Of Underdevelopment Countries, Preager , New York.
- Nayyar, D. (Ed) (1994), Industrial Growth and Stagnation, The Debate in India, Oxford University Press, New Delhi.
- Ranis, G. and A. Mahmood (1992), Political Economy for Development, Blackwell, Cambridge Mass.
- Sclow, R.M. (2000), Growth Theory : An Exposition, Oxford University Press, Oxford.
- Sen, A : (1992), Inequality Reexamined, Oxford University Press , Oxford.
- Sen, A.K. (Ed.)(1990), Growth Economics , Penguin, Harmondsworth.
- Taylor, L. (1979), Macro Models for Developing Countries, McGraw Hill, New York.
- Therberge, J.D. (Ed.) (1968), Economics of Trade and Development, John Wiley , New York.
- Thirlwal, A.P. (1974), Inflation, Saving and growth in Developing Economies, Macmillan, London.
- Todaro, M.P. (1971), Development Planning : Models and Methods, Oxford University Press, Oxford.
- Todaro, M.P. (1996), (6th Edition), Economic Development, Longman, London.

- Todaro, M.P.(1971), Development Planning : Models and Methods, Oxford University Press, Oxford.
- United Nations (1994), Human Development Report, United Nations, New York.
- Weiss, J. (1988), Industry in Developing Countries, Croom Helm, London.
- World Bank (1993), East Asian Miracle, World Bank Report, Washington D.C.
- World Bank (1994), Infrastructure and Development, World Bank, Washington D.C.

3. RESEARCH METHODOLOGY

Objectives:

- The objective of this paper is to orient the students in basic research methodology.
- The students will also be equipped in the elementary Quantitative Techniques required in the processing and analysis of the data used in the research.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Introduction and Research Design: Meaning – Objectives – Types – Significance - Research Process – Formulation of Research Problem Meaning of Research Design – Types – Exploratory or formulative – Descriptive – Diagnostic – Experimental.	1	15	25
2	Hypothesis and Sample Design: Meaning of Hypothesis- Types – Sources – Characteristics Basic Concepts – Testing of Hypothesis (in regression analysis) Basic Concepts – Theory – Sampling methods – Probability and non-probability – Sample size	1	15	25
3	Sources and Methods of data Collection and Processing of Data: Sources of data – Primary and secondary – Important secondary sources of data for Indian Economy Primary sources of data – methods of collection of primary data – Observation, Interview, Questionnaire, Schedule, Case study. Processing operations – problems – Statistical tools – Proportion and Percentage – Measures of Central Tendency – Dispersion – Asymmetry – Relationship – Correlation – Regression – Chi Square Test	1	15	25
4	Interpretation of data and Report Writing: Meaning and technique of interpretation – Precaution	1	15	25

	in interpretation – Significance of Report – Steps in Report Writing – Layout of the report - Presentation			
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Course Outcomes:

- This paper is a background for the core research component introduced in the syllabus.
- This will enable the students to prepare proposals for the research and conduct research projects.

References:

- Aglawe Pradeep (2009) *Samajik Sanshodhan Paddhati*, Nagpur: Prakashan (Marathi)
- Allen, R.G.D. (1974) *Mathematical Analysis for Economists*, Macmillan Press and ELBS, London.
- Bhandarkar, P.L. (2009) *Sanshodhan Paddhati*, Pune: Dastane Ramchandra & Co. (Marathi)
- Casley D.J. and Lury D.A. (1977) *A Statistical Workbook for Social Science Students*, Philip Allan, U.K.
- Chiang, A.C. (1986) *Fundamental Methods of Mathematical Economics*, McGraw Hill, New York.
- Clough Peter, Nutbrown Cathy (2007) *A Student's Guide to Methodology: Justifying Enquiry*, 2nd Ed. Canada: Sage
- Galtung Johann (1969) *Theory and Methods of Social Research*, USA: Columbia University Press.
- Good William J. and Hatt Paul .K.(1981) *Methods in Social Research*, New York: McGraw hill Book Comp.
- Gujarati, Damodar, N. (2010) *Basic Econometrics*, McGraw Hill, New York
- Gupta, S.C. (1993) *Fundamental of Applied Statistics*, S. Chand & Sons, New Delhi.
- Kumar, Ranjit (2008) *Research Methodology- A Step by Step Guide For Beginners*, Australia: Pearson education.
- Shah, Arvind G. (2007) *Samajik Sanshodhan Paddhati*, Anada Prakashan, Ahmedabad. (Gujarati)
- Speigal, M.R, (1992) *Theory and Problems of Statistics*, McGraw Hill Book Co., London.
- Wilkinson and Bhandarkar (1983) *Methodology and Techniques of Social Research*, India: Himalaya publishing House.
- Yates Frank (1981): *Sampling Methods for Censuses and Surveys*, New York: Macmillan, 1981.

4. AGRICULTURAL ECONOMICS

OBJECTIVES:

- To enable the learners to know about preparation of plan and management of agricultural development
- To acquaint the learners with the different strategies adopted by the Government of India for enabling financial resources for agricultural development
- To familiarize students with policy issues that are relevant to Indian agricultural economics and enable them to analyse the issues, using basic micro-economic concepts.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Agriculture and Economic Development: Nature and Scope of agriculture economics, Necessity to study agricultural economics separately, Role of agriculture in economic development, Interdependences between agriculture and Industry, Models of interaction between agriculture and rest of the economy.	1	15	25
2	Agriculture Production and productivity: Economics of agriculture production, Production function analysis in agriculture, Size of farms and productivity, Size of the farm and profitability, Farm budgeting and cost concepts, ; Land reform measure and performance; Women and land reforms, Problems of marginal and small farmers.	1	15	25
3	Agriculture Finance and agriculture prices Characteristics and sources of agricultural credit- Institutional and non institutional, Reorganization of agriculture credit- Co-operative, Regional rural banks, and NABARD. Behavior of agricultural prices- Cobweb Model, Term of trade between agriculture and non agriculture. Agricultural price policy-\ and evaluation.	1	15	25
4	Agricultural Growth and External sector Agricultural development in India under the plans, Recent trends in agricultural growth in India, Inter regional variations in growth of output and productivity; Cropping pattern shifts, Role of public investment and capital formation in Indian agriculture; Strategy of agricultural development. New economic policy and Indian agriculture. Role of MNCs, Globalization of Indian economy and problems and prospects of Indian agriculture. WTO and Indian agriculture	1	15	25

Course Outcomes:

- The place and role of agriculture sector is unique in the context of the Indian economy.
- The paper is intended to highlight the working and significance of the agricultural economy along with the institutional involvement in implementing the government programmes.

References:

- Bhalla, G.S. (1994), Economic Liberalisation and Indian Agriculture, Institute for Studies in Industrial Development, New Delhi..
- Bilgrami, S.A.R. (1996), Agricultural Economics, Himalya Publishing House, Delhi.

- Brahmanada,P.R., B.K. Narayan and A. Kalappa (Ed.) (1987), Dimensions of Rural Development in India, Himalaya Publishing House, New Delhi.
- Chadha , G.K. and A.N. Sharma (1997), Growth, Employment and Poverty : Change and Continuity in Rural India, Vikas Publishing House, New Delhi.
- Chaudhary, P. (1972), Readings in Indian Agricultural Development, George Allen & Unwin, London.
- Dantwala, M.L. (1996), Dilemmas of Growth : The Indian Experience, Sage Publications, New Delhi.
- Dantwala, M.L. et. al (1991), Indian Agricultural Development Since Independence , Oxford & IBH, New Delhi.
- Desai, G. and A. Vaidyanathan (Eds.) (1995), Strategic Issues in Future Growth of Fertilizer Use in India, Macmillan, New Delhi.
- Dhawan, B.D. (1988), Irrigation in India's Agricultural Development, Sage Publications , New Delhi.
- Ghatak, S. and K. Ingerscent (1984), Agriculture and Economic Development, Select books, New Delhi.
- Government of India, Economic Survey (Annual), New Delhi.
- Government of India, Five Year Plans, New Delhi.
- Gulati, A. and T. Kelly (1999), Trade Liberalisation and Indian Agriculture, Oxford University Press, New Delhi.
- Haque, T. and A.S. Sirohi (1986), Agrarian Reforms and Institutional Changes in India, Concept Publishing Company, Delhi.
- Joshi, P.C. (1975), Land Reforms in India: Trends and Prospects, Allied Publishers, Bombay.
- Kahlon, A.S.and Tyagi D.S. (1983), Agriculture Price Policy in India, Allied Publishers, New Delhi.
- Kaur, R. (1975), Agricultural Price Policy in Economic Development, Kalyani Publishers, Delhi.
- Kausro, A.M. (!973), The Economics of Land Reforms and Farm Size in India, Macmillan, New Delhi.
- Raghvan and L. Sarkar (Eds.) (1996), Poverty and Employment, New Age, New Delhi.
- Raj, K. N. et. al. (1988), Essays in the Commercialisation of Indian Agriculture, Oxford University Press, New Delhi.
- Raj, K.N. et. al (1988), Essays in the Commercialization of India Agriculture, Oxford University Press, New Delhi.
- Rao C.H. Hanumantha (1975), Technological Change and Distribution of Gains from Agriculture, Macmillan, New Delhi.
- Rao,C.H. Hanumantha (1994), Agricultural Growth, Rural Poverty and Environmental Degradation in India, Oxford University Press, New Delhi.
- Rudra, A. (1982), Indian Agricultural Economics: Myths and Reality, Allied Publishers, New Delhi.
- Saini, G.R. (1979), Farm Size, Resource Use Efficiency and income Distribution, Allied Publishers, New Delhi.
- Soni, R.N. (1995), Leading Issues in Agricultural Economics, Arihant Press, Jalandhar.
- Subbarao, K.and De Janvry (1986), Agricultural Price Policy and Income Distribution in India, Oxford University Press, New Delhi.
- Visaria, P. and R. Basant (1994), Non-Agricultural Employment in India : Trends and Prospects, Sage Publications, New Delhi.

5. Statistics for Economics

Objectives:

- The objective of this paper is to train students to use statistical methods which can be applied to understand and analyze economic problems. They can understand economics with the help of quantitative techniques.
- To familiarize students with statistical theory and its application as the foundations for data analysis.
- To develop a reasonable understanding of economics relationships and relevant statistical methods.
- To strengthen the skill of students to make a statistical analysis of numerical facts and data.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Descriptive Statistics: Measures of central tendency: Computation of Mean, Median, Mode, Harmonic Mean and Geometric Mean in discrete and continuous series, Measures of dispersion: Absolute and relative measures of dispersion, Properties of a good measure of dispersion, Quartile Deviation, Mean Deviation, Standard Deviation and coefficient of quartile and mean deviations, coefficient of variation, combined mean and standard deviation.	1	15	25
2	Correlation and Regression Analysis: Correlation: concept of simple, partial and multiple Correlation, Scatter diagram, Karl Pearson's coefficient of correlation and Spearman's rank coefficient of correlation and Concurrent Deviation Method, Probable Error of the Coefficient of Correlation and coefficient of determination, Regression: Least square method of estimating regression, two regression lines, regression coefficients and standard error of estimate.	1	15	25
3	Index Number and Time Series Analysis: Meaning, weighted and unweighted index numbers, methods of constructing index numbers, Paasche and Laspeyres method, Fisher's ideal index, Marshall-Edgeworth and D-B formula of index number, Base shifting, splicing and deflating index numbers. Time series analysis: meaning, components of time series, three and four yearly moving averages, fitting the linear trend by least square method, uses of second degree trend in time series, forecasting based on time series data.	1	15	25

4	Theoretical probability distribution and hypothesis testing: Concept of probability distribution, the binomial distribution with properties and illustrative problems, normal distribution with properties and area under the normal curve, illustrative problems on normal distribution. Hypothesis Testing: Meaning and Procedure, Type 1 and Type 2 errors, the goodness of fit; Confidence intervals and level of significance, Tests of Significance for Large Samples and Small Samples- Student's 't'-test, Z test and Chi Square Test with illustrative examples.	1	15	25
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Course Outcomes:

By the end of the course students will be able to:

- Apply statistical tools in economic analysis.
- Appreciate statistical techniques used for understanding and analyzing economic problems and variables.
- Get a broad outlook on analyzing and interpreting vast amount of economic data for getting a practical exposure to the world through research initiatives.

References:

- Gupta, S. C. (1993), Fundamentals of Applied Statistics, S. Chand & Sons., New Delhi.
- Gupta, S.P. (2016) Statistical Methods, Sultan Chand & Sons, New Delhi
- Handry, A. T. (1999), Operations Research, Prentice Hall of India, New Delhi.
- Millar, J. (1996), Statistics for Advanced Level, Cambridge University Press, Cambridge.
- Monga, G. S. (1972), Mathematics and Statistics for Economists, Vikas Publishing House, New Delhi.
- Levin I Richard & Rubin S David, Statistics for Management, Pearson Prentice Hall, 2006
- Gupta & Kapoor, Applied Statistics, Sultan Chand & Sons, New Delhi
- Arora P N & Summet Arora, Comprehensive Statistical Methods, S. Chand & Company Ltd, New Delhi, 2007.
- Goon, A. M., M. K. Gupta and B. Dasgupta (1993), Fundamentals of Statistics, Vol. 1, The World Press Ltd., Calcutta.

6. Banking & Financial System

Objectives:

- To familiarize students with the financial system and its components viz. financial instruments, financial institutions, financial markets and financial regulations.
- To upgrade students with contemporary theories about the workings of different financial markets including money market, capital markets (bonds, stocks and hybrids) and derivative markets.
- To make students understand policy and regulatory framework within which financial institutions are required to function.
- To appreciate interconnections exist between the monetary forces and real forces, their developmental role and limitations in shaping and influencing the monetary and related policies at national and international levels.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Nature and Role of the Financial System: Money and near-money, Structure of the financial system, Role of the financial system in economic development, Indicators of financial development, Criteria to evaluate assets; Risk and financial assets, types of risk, Valuation of Securities, Financial development Ratios; (Finance ratio, Financial Inter-relation Ratio, Intermediation Ratio).	1	15	25
2	Financial institutions: Financial institutions: Central and Commercial banks, non-bank financial institutions, Development banks and their role, functions and structure. Regulatory role and function of Central Bank with reference to RBI, Aims, objectives and instruments of monetary policy of RBI, relationship between monetary policy and financial markets. Financial sector reforms in India, Role of financial institution in the development of urban and rural economy.	1	15	25
3	Money Market, Capital Market and Markets for Derivatives: Meaning, Functions and instruments of the money market, Meaning, functions and instruments of capital market, Structure of capital market, Defects and Suggestions to Improve Indian Money Market; Recent Developments in Indian Money Market. Recent changes of the Stock Market in India. Markets for derivatives: futures and options, and other derivatives: types, Economic benefits of derivatives, and pricing of derivatives, functions and role of SEBI in the regulation of capital markets.	1	15	25

4	International Financial Markets Foreign Exchange Market: Nature and role of foreign exchange market, players in the market. Recent trends in exchange rates and its impact on India. International financial flows: types, importance and problems. Euro-dollar and Euro-Currency markets: their developmental role and regulation at the International level. Global Financial Crisis 2008: Its causes and impact on developing and developed economies.	1	15	25
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Course Outcomes:

- Understand the structure and role of financial system.
- Know monetary policy of RBI and their effectiveness in the Indian economy.
- Appreciate role of development banks in economic development.
- Analyze workings of different financial markets including money market, capital markets (bonds, stocks and hybrids) and derivative markets.

References:

- Bhole L.M, 5th edition, Financial Institutions & Markets, Tata McGraw, New Delhi.
- Khan, M.Y., Indian Financial System, Tata McGraw Hill, New Delhi.
- Pathak Bharti, 2009, Indian Financial System, Pearson Education Publication, New Delhi
- Shrivastava P.K., Banking Theory and Practice, Himalaya Publishing House, New Delhi, 2009.
- RBI Bulletin and various RBI Report.

7. Econometrics

Objectives:

- To provide students with basic knowledge of OLS method and its limitations.
- To acquaint them with econometric techniques beyond the OLS method
- To critically study econometrics methods like 2 stage LS, identification rule, simultaneous equation models etc which are crucial in the real world situation.
- To introduce the students with econometric techniques that are widely used in empirical studies, covering problems relating estimation and inference in the context of single and multiple equations regression model.
- To operationalize empirically economic theory and test economic theory helping in the predication of economic variables of interest on the basis of econometric models.

Sr. No.	Topic and Details	Credits	Lectures	Marks
1	Classical linear regression model for two variables and estimation: Least square estimation of two variable linear regression, Mean, variance of OLS estimators, Assumptions of random term, Gauss Markov theorem of BLUE property of OLS estimators, Test of significance of parameters: 't' test and Z test.	1	15	25
2	Econometric problems with relaxation of assumptions of Classical Model: Multiple regression analysis extended to 3 variables with estimation of parameters and Application of ANOVA for 2 and 3 variable regression model, Homoscedasticity and heteroscedasticity, Multicollinearity, its plausibility and consequences, Autocorrelation, its sources, First order auto regressive model, consequences and tests of autocorrelation, the Durbin-Watson Test.	1	15	25
3	Linear Programming, Transportation Problems and Game theory: Linear Programming Problems of minimization and maximization, Formulation and graphical solutions to the LPP, Simplex method for solving of maximization problems, Duality in LPP, Transportation problem: solution of transportation problem by North-West corner rule, least cost method and VAM method. Two-person zero-sum game, pure and mixed strategy, game with and without saddle point, solution to games with mixed strategy through graphical solution.	1	15	25
4	Simultaneous equation models and Identification: Simultaneous Equation Bias and Inconsistency of Ordinary Least Squares estimators, The structural and reduced form of simultaneous equation models with examples from Demand-Supply and IS-LM Models, Methods of estimating simultaneous equation system, Recursive method and OLS, Indirect least squares (ILS), 2SLS methods, Identification problem, order and rank conditions of identification, identification from the reduced form.	1	15	25

Course Outcomes:

- Understand, evaluate and analyze economic data.
- Develop simple econometric models and interpret the econometric and statistical results reported in other studies.
- Operationalize the empirically economic theory and test it with the help of econometric methods. This helps them to predict future movement in the economic variable of interest to the empirical world.

References:

- Intrilligator, M. D. (1978), *Econometrics Methods, Techniques and Applications*, Prentice Hall, Englewood Cliffs, New Jersey.
- Johnston (1984) *Econometrics Methods*, MacGraw Hill, New York
- Kennedy, P. (1998), *A Guide to Econometrics*, MIT press, New York.
- Koutsoyiannis, A. (1977), *Theory of Econometrics* (2nd ed.), the Macmillan Press Ltd., London.
- Allen, R.G. D. (1976), *Mathematical Economics*, Macmillan, London.
- Croxton, Crowden and Klein (1971), *Applied General statistics*, prentice Hall of India, New Delhi.
- Gujarati, D. N, *Basic Econometrics*, Tata McGraw-Hill Publishing Company Ltd, New Delhi.
- Gupta and Kapoor, “*Mathematical statistics*”, Sultan Chand & Sons, New Delhi.
- Hadley, G. (1962) *Linear Programming*, Addison Wesley Publishing Co. Massachusetts.
- Johnston, J (1991) *Econometric Methods*, McGraw-Hill Book Co. London.
- Kothari, C. R. (1992). *An Introduction to Operation Research*, Vikas Publishing House, New Delhi.
- Koutsoyiannis, *Econometrics*, Macmillan press, London
- Patra, S.C. (2010), *Mathematical Techniques for Economic Analysis*, Himalaya Publishing House, Mumbai.
- Richard I. Levin and David S. Rubin, “*Statistics for Management*” Pearson Prentice Hall, New Delhi.
- Vygodsky, G.S. (1971), *Mathematical Handbook*, Mir Publishers, Moscow.