Minor Courses offered by the Department of Economics

"Student can choose any one course from each stream for a Semester"

Year	Type of Course	Course Code	Title of the Course	Credits	Teaching Hours
Level 100 1st Year (Semester-I & II)	MID -1 & MID -2	ECONM101	Agricultural Finance and Project Management	4+4	5+5
		ECONM102	Economics of Social Sector		
		ECONM103	Indian Financial Institutions and Markets		
		ECONM104	Regional Economics		
		ECONM105	Society and Economy		
Level 200 2nd Year (Semester-III & IV)	MID -3 & MID -4	ECONM201	Agricultural Development and Policy Analysis	4+4	5+5
		ECONM202	Economics of Banking and Regulations		
		ECONM203	Economics of Finance and Insurance		
		ECONM204	Economics of Financial Markets		
		ECONM205	Economics of Marketing		
		ECONM206	Economics of Microfinance		
		ECONM207	Globalisation and Development		
		ECONM208	Population Studies		
		ECONM209	Rural Economics		
Level 300 3rd Year (Semester-V & VI)	MID -5 & MID -6	ECONM301	Agricultural Marketing and Price Analysis	4+4	5+5
		ECONM302	Banking Operations and Management in India		
		ECONM303	Behavioural Economics		
		ECONM304	Financial Derivatives and Corporate Finance		
		ECONM305	Health Economics		
		ECONM306	Introduction to Data Analysis using R		
		ECONM307	Migration and Development		
		ECONM308	Multivariate Statistics		

		ECONM309	**Qualitative Research Methodology**		
Level 400 4th Year (Semester-VII)	MID -7 & MID -8	ECONM401	**Advanced Econometrics**	4+4	5+5
		ECONM402	**Advanced Mathematical Methods for Economics**		
		ECONM403	**Advanced Microeconomics**		
		ECONM404	**Advanced Macroeconomics**		
		ECONM405	**Advanced Statistical Methods**		
		ECONM406	**Agricultural Production Economics**		
		ECONM407	**Behavioural Finance**		
		ECONM408	**Economics of Aging**		
		ECONM409	**Economics of Indian Social Institutions –I**		
		ECONM410	**Economics of Indian Social Institutions –II**		
		ECONM411	**Game Theory and Application**		
		ECONM412	**Gender Studies**		
		ECONM413	**International Finance**		
		ECONM414	**Issues in Indian Public Finance**		
		ECONM415	**Optimization Techniques**		
		ECONM416	**Public Economics**		
		ECONM417	**Risk Management -Theories and Practice**		
		ECONM418	**Time Series Econometrics**		
		ECONM419	**Urban Economics**		

*Note: Students with CGPA less than 7.5 at the end of 6th semester cannot opt for research and instead they will pursue three minor electives of level 300 & above equivalent of 12 credits from department. These students will be awarded B.A. Honours in Economics at the end of 4th year.

ELECTIVES

Minor (Level 100)

ECONM101: AGRICULTURAL FINANCE AND PROJECT MANAGEMENT

Credit 4

Module 1: Basics of Agricultural Finance

Role and importance of agricultural finance; Financial institutions and credit flow to rural sector; Agricultural lending – direct and indirect financing; Financing through cooperatives, NABARD, commercial banks, and RRBs; District credit plan; Capital formation in agriculture; Non-banking financial institutions; Recent banking reforms and its impact on agriculture; Digitization of banking sector; Microfinancing and role of MFI's; Credit linked rural development programmes; Supervisory credit system; Overdue problem – causes, consequences, and mitigating measures; Credit rationing; Credit widening; Credit deepening; Macro-finance assessment.

Module 2: Analysis of Agricultural Credit and Financial Statements

3 C's, 7 P's and 3 R's of credit; Estimation of technical feasibility, economic viability, and repaying capacity of borrowers and appraisal of credit proposals; Information asymmetry in farm financing – adverse selection and moral hazard issues; Financial decisions – investment, financing, liquidity, and solvency; Preparation of financial statements – balance sheet, cash flow statement, and, profit and loss account; Ratio analysis; Assessing the performance of the farm.

Module 3: Project Overview and Impact Analysis

Project approach in financing agriculture; Project cycle – identification, preparation, appraisal, financing, and implementation; Project appraisal – financial, economic, and environmental aspects; Project appraisal techniques – Undiscounted measures and discounted measures; Network techniques – PERT and CPM; Project impact evaluation – meaning, types, methods and ethical considerations; Impact evaluation for policy decision; Selecting outcome and performance indicators; Risks in financing agricultural project – management and coping mechanism.

Readings

1. Barry JP and Elunger PN (2010). Financial Management in Agriculture. Pearson Prentice Hall (7th Edition).
2. Baum EL, Diesslin HG and Heady EO (1961). Capital and Credit Needs in Changing Agriculture. Iowa State University Digital Press. https://www.iastatedigitalpress.com/plugins/books/54/
3. Chanana C (1969). Agricultural Finance in India: Role of commercial Banks. Marketing and Economic Research Bureau, New Delhi.
4. Gittinger JP (1972). Economic Analysis of Agricultural Projects, John Hopkins University Press, Baltimore.
5. Harberger AC (1972). Project Evaluation. Collected Papers, Macmillan Press.
6. Little IMD and Mirrless JA (1974). Project Appraisal and Planning for Developing Countries. Oxford and IBH Publishing Company, New Delhi.
7. Muniraj R (1987). Farm Finance for Development. Oxford & IBH Publications.
8. Murray WG and Nelson AG (1960). Agricultural Finance. Iowa State University Press.
9. Paul GJ, Sebastian M, Patrick P, Laura RB and Christel VMJ (2016). Vermeersch, Impact Evaluation in Practice (2nd Edition), The World Bank, Washington, DC.
10. Reddy SS and Ram R (2018). Agricultural Finance and Management. Oxford & IBH Publishing Company Private Limited.

ECONM102: ECONOMICS OF SOCIAL SECTOR

Credit 4

Module 1: Conceptual Issues

Concept of Social Sector – Significance of Social Sector – Economic Development And Social Sector Development – Equity and Social Sector – Environment of Economics – Economy – Environment Interaction- The Material Balance Principle - Entropy Law - Market Failure , Property Rights , Open Access Resources- Collective Action.

Module 2: Educational and Health Economics

Human Capital – Human Capital Vs. Physical Capital, Components of Human Capital: Determination of Demand for Education: Costs and Benefits of Education: Educational Planning and Economic Growth: Educational Financing: Education and Labor Market,: Economics of Education Planning In Developing Countries with special emphasis on India. Determination of Health - Economics of Health Care: Appraisal of Health Care Financing: The concept of Human Life Value: Benefit Cost and Cost Effectiveness Approaches: Inequalities in Health and Class and Gender Perspectives: Institutional Issues in Health Care Delivery.

Module 3: Policy issues in India

Programmes and Policies of Educational Development – health development- Strategies, Programmes and Policies- Evolution of Environmental Policy in India – Air and Water Acts-Fiscal Incentives - Enforcement and Implementation Issues- Policies and Programmes Relating to Water Supply and Sanitation.

Readings

1. Council for Social Development (2006), India, Social Development Report, Oxford University Press, Delhi.
2. Dreze, Jean and Amartya Sen (1995), Indian Economic Development and Social Opportunity, Oxford University Press, Delhi.
3. Field, B.C. (1994), Environmental Economics: An Introduction, McGraw Hill, New York.
4. Freeman III, A.M. (1998), The Economic Approach to Environmental Policy, Chelter Law, Edward Elgar, U.K.
5. Krueger, A. and M. Lindhal (2001), "Education for Growth: Why and for Whom", *Journal of Economic Literature*, 39(4), pp. 1101 -1136.
6. Latchanna, G. and Hussein, J.O. (2007), Economics of education, Discovery publishing House, New Delhi.
7. Planning Commission Eleventh Five Year Plan, Social Services Sector (2007- 12) Vol. II, Govt. of India, New Delhi.

ECONM103: INDIAN FINANCIAL INSTITUTIONS AND MARKETS

Credit 4

Module 1: Financial and Banking System in India
Overview of the Indian financial system – structure, role, and growth; Financial intermediaries and markets; Regulation of financial institutions and markets in India; RBI – role, and functions; Banking regulation and supervision; Conduct of monetary policy; Commercial banks in India – structure, role, and growth; Generation of savings and investments; Banks and monetary policy transmission; Regulation and supervision of commercial banks in India.

Module 2: Money and Capital Markets
Indian money market – instrument, institutions, functions; Changes in the regulatory framework; Growth of money market; Stocks and bonds; Primary and secondary markets; Process of initial public offer; Offer of Government bonds; Stock market functioning; Stock indices; Evaluation of stocks and bonds; Understanding stock market information.

Module 3: Foreign Exchange Market and Financial Derivatives
Exchange rate – types, determinants; Nature of forex market; Nature of forex inflow and outflow; Examples of External Commercial Borrowings (ECBs) and NRE (Non-Resident External) account; RBI and exchange rate management; Need for derivatives; Types of derivatives; Example of how stock index derivatives could be used to hedge risks in stock market investment; Evaluation of financial derivatives.

Readings
1. Bhole LM and Mahakud J (2017). Financial Institutions and Markets: Structure, Growth and Innovations, McGraw Hill Education Private Limited, Chennai.
2. Khan MY (2018). Indian Financial System. McGraw Hill Education Private Limited, Chennai.
3. Pathak BV (2018). Indian Financial System: Markets, Institutions and Services. Pearson India Education Services Private Limited.
4. Reserve Bank of India. Report on Currency and Finance, Various issues.
   https://www.rbi.org.in
5. Sarkhel J and Salim S (2017). Indian Financial System and Financial Market Operations. McGraw Hill Education Private Limited, Chennai.

ECONM104: REGIONAL ECONOMICS

Credit 4

Module 1: Concepts

Why Regional Economics? What is a region? Different types of regions; Regional Income; Problems of estimation; Indicators of regional development.

Module 2: Location of Firms and Spatial Price Theory

One market one input case; More generalized versions; Locational interdependence; Hotelling phenomena; General equilibrium; Uncertainty; Maximizing vs. satisfying. Price equilibrium in geographically separated and interlinked markets; Market area boundaries; Reilly's law; Models of pricing under free entry; Spatial monopoly and Price discrimination; Spatial monopolistic competition.

Module 3: Techniques of Regional Analysis and Policy

Regional and interregional input-output analysis; Attraction model; Gravity model; Shiftshare analysis; Impact studies. People prosperity versus Place prosperity; Formulation of interregional objectives; Consistency between national and regional objectives; Alternate regional policy measures; Historical evidence; Agriculture, Industry, Physical infrastructure, Social Sector.

Readings

2. Chand, M. and V.K. Puri (1983), Regional Planning in India, Allied Publishers, New Delhi.
3. Richardson, H.W. (1969), Regional Economics, Weidenfield, M. and Nicolson, London.
4. Hoover, E.M. (1974), An Introduction to Regional Economics, Alfred A. Knopf, New York.
5. Isard, W. (1960), Methods of Regional Analysis, MIT Press, Cambridge, Mass.
6. Nair, K.R.G. (1982), Regional Experience in a Developing Economy, Wiley-Eastern, New Delhi.
7. Brahmananda, P.R. and V.R.Panchmukhi (Eds.) (2001), Development Experience in the Indian Economy: Inter-State Perspectives, Bookwell, Delhi.

ECONM105: SOCIETY AND ECONOMY

Credit 4

Module 1: Nature, People and Allocation of Resources

Human society and geography – Scarcity / abundance of land and water, contestations over resources, evolution of culture, culture as the foundation for socio-economic structures, People and their Systems of allocation and use - Land, Water, agriculture and production and ideas of demand and supply of resources and the resultant production of goods.

Module 2: Need, Availability Module 3: Social Institutions and Resource Allocation

Functions of village, caste, family, kinship, and their role in determining individual's access to resources, occupation, and remuneration, and ability to participate in market for land and produce.

Module 3: State, Market, and Resource allocation

Resources, People and their survival as Land, Labour, production organization. Emergence of State, Market, and Access to Productive resources, education and employment and the resultant livelihood patterns of people.

Readings

1. Knowles, R and Wareing, J (1996) *Economic and Social Geography*, Rupa & Co, Delhi.
2. Guha, Ramachandra (2011) edited *Social Ecology,* Oxford University Press, New Delhi.
3. Ludden, David E (1993), *Peasant history in South India*, Oxford University Press, Delhi,
4. Lakshmi Narasu, P (2003) *A Study of Caste*, Asian Educational Services, New Delhi.
5. Moon, Vasant edited *Writings and Speeches of Dr. B.R. Ambedkar Volumes 1, 2, 5 and 7,* Education Department, Government of Maharashtra.
6. Deshpande, Satish. 2004. Contemporary India: Sociological Perspectives, New Delhi: Sage Publications
7. Harriss, John. 1982. Capitalism and Peasant Farming: Agrarian Structure and Ideologies in Northern Tamil Nadu. New Delhi: OUP.
8. Barbara Harriss White (2003) *India Working: Essays on Economy and Society,* Cambridge University Press.
9. Mosse, David, *The Rule of Water: Statecraft, Ecology and Collective Action in South India*, Oxford University Press, New Delhi, 2003
10. Ludden, David E (1978a), "Ecological Zones and the Cultural Economy of Irrigation in Southern Tamilnadu", *Journal of South Asian Studies*, New Series Vol. I, No. 1,

ECONM201: AGRICULTURAL DEVELOPMENT AND POLICY ANALYSIS

Credit 4

Module 1: Introduction to Agricultural Growth and Development

Agricultural development – scope and importance; Agricultural development and agricultural growth – divergence in concept and approach; Indicators and measurement of agricultural growth and development – traditional and modern approaches; Sustainable agricultural growth and development; Criteria for under development; Obstacles to agricultural development; Economic and non-economic factors of agricultural growth.

Module 2: Theories and Models of Agricultural Development

Role of agriculture in economic/rural development; Theories of agricultural development; Population and food supply; Vision 2050 – targets and pathways; Need for effective agricultural policies; Models of agricultural development – diffusion model, conservation model, urban-industrial impact model, Leontief input-output model, induced innovation model; Agriculture-Industry development models.

Module 3: Globalization and Agricultural Policy Analysis

Global vis-à-vis Indian agriculture; Globalization and its relevance to agricultural development; World Trade Organisation (WTO) – Agreement on Agriculture (AoA) and implications for developing countries; The dilemma of free trade – Free trade vis-à-vis Protectionism; Agricultural policies – resource policy, credit policy, input and product marketing policy, price policy; National Agricultural Policy (NAP) – salient features, thrust areas and critical analysis; Policy Analysis Matrix (PAM).

Reading

1. Chakaravathi RM (1986). Under Development and Choices in Agriculture. Heritage Publishers, New Delhi.
2. Diwett KK (2002). Modern Economic Theory. S. Chand & Company.
3. Eicher KC and Staatz JM (1998). International Agricultural Development. Johns Hopkins University Press.
4. Frank E (1992). Agricultural Policies in Developing Countries. Cambridge University Press.
5. Ghatak S and Ingersent K (1984). Agriculture and Economic Development. Select Book Service Syndicate, New Delhi.
6. Jhingan ML (1998). The Economics of Development and Planning. Vrinda Publications.
7. Jules PN (1995). Regenerating Agriculture – Policies and Practice for Sustainability and Self Reliance. Vikas Publication House.
8. Naqvi SNH (2002). Development Economics – Nature and Significance. Sage Publications.
9. Norton RD (2004). Agricultural Development Policy: Concepts and Experiences. Wiley Publications.
10. Todaro MP and Smith SC (2012). Economic Development. Pearson Publications.
11. Tweeten L (2020). Agricultural Policy Analysis Tools for Economic Development. Routledge.
12. Weerahewa J and Jacque A (2022). Agricultural Policy Analysis: Concepts and Tools for Emerging Economies. Springer.

ECONM202: ECONOMICS OF BANKING AND REGULATIONS

Credit 4

Module 1: Introduction to Banks and Banking

Ordinary banking and the legal provisions - Narration of banking using bank balance sheet - Major items of income and expenditure of a bank - Functions of a commercial bank – Usual banking operations at branch level – Banking sector reforms in India - Brief overview of the Indian banking system.

Module 2: Role of Banks in A Modern Economy

Banks as financial intermediaries and saving-investment Process - Banks resolving size and maturity mismatches - Banks, asset diversification and risk mitigation - Banks as the backbone of the payment and settlement system – role of banks and bank lending in the monetary transmission mechanism.

Module 3: Banking Regulations

Rational for regulation and supervision of banks - Major types of risks in banking - Measurement of risks in banking - Evolution of public policy related to banking regulation and supervision - Current banking regulatory framework under Basel prudential norms – CAMELS – On-site inspection and Off-site surveillance - Roadmap for the Future.

Readings

1. Casu, Barbara, Claudia Girardone and Philip Molyneux (2021): *Introduction to Banking,* Pearson.
2. Mishkin, Frederic (2021): *Economics of Money, Banking and Financial Markets*, Pearson.
3. Samantaraya, Amaresh (2023): *Economics of Banking and Bank Management*, Cambridge University Press, *Forthcoming*

ECONM203: ECONOMICS OF FINANCE AND INSURANCE

Credit 4

Module 1: Introduction to Financial Markets

Capital markets, consumption and investments with and without capital markets, market places and transaction costs and the breakdown of separation; Fisher separation theorem; the agency problem; maximization of shareholder's wealth, capital budgeting techniques, Portfolio Theory, Asset Pricing Model.

Module 2: Various methods in Insurance Business

Basic methodologies applied to practical problems relating to: rating, reserving, reinsurance programme performance, financial planning, monitoring the asset / liability position. Future life time random variable, its distribution function and density function, concept of force of mortality, curtate future life time random variable its probability mass function, deferred probabilities, all these functions in terms of international actuarial notation, analytical laws of mortality such as Gompertz and Makeham, single decrement life table, select and ultimate life table.

Module 3: Insurance Pricing policies

Insurance cost and fair premium, basic definition rate making, rate making in property and liability insurance, investment income and the timing of claim payment; assurance and annuity contracts with level and varying benefits, Net premiums for insurance products and annuity schemes; automobile insurance, homeowners insurance, life insurance and annuities, employee benefits and group medical coverage, retirement plans.

Readings

1. Harrington and G. Niehaus, *Risk Management and Risk,* Tata McGraw-Hill, second edition, 2004.
2. Rajeda, G. *Principles of Risk Management and Insurance,* eighth edition, Pearson Education, 2004
3. Harriett, E.J. and L.L. Dani, *Principles of Insurance: Life, Health, and Annuities,* second edition, Life Office Management Association, 1999
4. Black, K. and H. Skipper, *Life and Health Insurance,* Pearson Education, thirteenth edition, 2004

ECONM204: ECONOMICS OF FINANCIAL MARKETS

Credit 4

Module 1: Fundamentals of Financial Markets

Financial markets and instruments – Basic concepts of Accounting: Balance sheets – Cash flow statements – Income statement – Financial markets and the Economy: Real Assets and the Financial Claims – Framework for macroeconomic analysis of Flows – Supply and Demand for Securities - Ethics of Finance and the Economic Function of Financial Markets – Purpose of Regulation of Financial markets

Module 2: Efficiency of Securities Markets and Asset Prices

Central Trading Places – Financial markets with central trading places – Operational efficiency and Efficient Market Hypothesis: Weak form of EMH – Semi-strong firm of EMH – Strong form of EMH. Determination of Equity Prices: Shares as claim to future dividends and Corporate Net worth–CAPM: Simplest form – extending CAPM – estimating betas – implications for portfoliomanagement – Arbitrage Pricing Theory

Module 3: Financial Derivatives

Introduction to Financial Derivatives: Forward, Future, Options – Exchange traded Stock options Payoffs from Buying and Selling Options – Combinations of Options – Put-Call Parity theorem Valuation of Stock Options: Application of CAPM to Options – Black-Scholes Formula – Options and Portfolio Management. Forward Contracts – Basic Elements of Future Contacts – Organization of Future markets – Future Prices: Profits and Losses on Various Transactions – Spot and Future Prices – Hedgers, Speculators and Market Equilibrium – Futures and Portfolio Management

Readings

1. Houthakker, Hendrik S. and Peter J. Williamson (1996): *The Economics of Financial Markets,* Oxford University Press
2. E. J. Elton and M.J. Gruber: *Modern Portfolio Theory and Investment Analysis*,Wiley, London.
3. J. C. Hull (2004): *Futures and Option Markets*, Prentice- Hall, New Jersey
4. R. A. Haugen (2001): *Modern Investment Theory*, Fifth Edition, Prentice Hall, New Jersey.
5. Bhole L M "Financial Institutions and Markets", Tata Mc Graw Hill, New Delhi

ECONM205: ECONOMICS OF MARKETING

Credit 4

Module 1: Introduction
Nature, Scope and Importance of Marketing - Evolution of Marketing Concept – Marketing Environment – Functions of Marketing – Market Segmentation: Concept, Benefits, Methods – Consumer Behaviour – Buying Motives, Theories.

Module 2: Product Planning and Physical Distribution
Concept of Product – Product Planning – New Product Development, Meaning and Steps – Product Life Style – Pricing: Significance and Factors Affecting Pricing – Pricing Objectives – Pricing Policies – Kinds of Pricing – Pricing of New Product.- Importance of Distribution Channel – Kinds of Channel Members – Factors Influencing Distribution Channel - Types of Middlemen – Function of Middlemen – Inventory Control.

Module 3: Promotion and Marketing
Product Promotion – Meaning, Objectives and Methods of Product Promotion. Advertising: Meaning, Objectives and Kinds of Advertising – Scientific Advertising – Advertising Management – Personal Selling: Meaning and Importance of Personal Selling – Kinds of Salesmen – Selling Process- Need for Consumer Protection – Measures for Consumer Protection – Consumerism – Evolution and Approaches to Consumerism – Laws to Protect Consumers.

Readings
1. P. Kotler and Armstrong: Principles of Marketing, Prentice Hall India
2. Gupta C.B. &Rajan Nair. N: Marketing Management, Sultan Chang & Sons,New Delhi.
3. Ramasamy V.S. and Namakumari. S: Marketing Management, Macmillan India, New Delhi.
4. . Dr.Amit Kumar and Dr.B.Jagdish Rao: Marketing Management, SahityaBhawan Publications, Agra. Dr.PriyankaGite: Marketing Management, Taxmann Publication (P) Ltd., New Delhi. Book(s) for Reference 1 Philip Kotler: Marketing Management Practice – Prentice – Hall of India, New Delhi

ECONM206: ECONOMICS OF MICROFINANCE

Credit 4

Module 1: Microfinance Revolution

Rethinking Banking- Microfinance Revolution Rethinking Banking - Why Doesn't Capital Naturally Flow to the Poor -The Grameen Bank and the Beginnings of Microfinance -A Microfinance Revolution - Growth of Microfinance in India - Rotating savings and credit associations (ROSCAs) - Limits to ROSCAs - Impact of Microfinance on Poverty eradication- Microfinance crisis in India in late 2000s.

Module 2: Development of Microfinance Products

Concept of Micro Finance – Financial Collateral - The Grameen Bank - Targeting Women - Neoclassical Approaches to Household Decision Making - How Microfinance Affects Households - Growth of Micro Finance in India – Micro Finance for poverty reduction in India – Micro Finance and the Millennium Development Goals – Pros and cons of Micro Credit Programme – Micro Finance Models in India.

Module 3: An Assessment of Innovative Initiatives of NGOs in Entrepreneurship

Role and strategy of NGO – Functions of NGOs – NGOs and their role in poverty alleviation – NGOs in Entrepreneurship Development - Strengths and weakness of NGOs – Women and Micro Finance – Gender issue in micro finance – Rationale behind SHG and need to institutionalization – Genesis of rural credit system – Genesis of SHG. Self Help Group and Rural Development Approach - The Concept, Why Self Help Groups? – Objectives – Functions of SHGs Promotion– Formation of SHG - Constraints of Women SHGs - What are the Important Steps for Sustainable Development of SHGs? What are the Skills needed for Managing Successful SHGs - SHG Federation.

Readings

1. Beatriz Armendariz & Jonathan Morduch (June 28, 2002), Economics of Microfinance, PHI Learning Publications, New Delhi.
2. Rais Ahmad (2009) Micro Finance and Women Empowerment, Mittal Publication New Delhi.
3. Cernea, Michael M.(1988), NGOs and Local Development, The World Bank, Washington, Discussion Paper.
4. Desai Vasant. (2005) Rural Development in India , Himalaya Publishing House.
5. Vijayakumar . A, (2009) Banking , Micro Finance and Self Help Group in India, New Century Publications, New Delhi.
6. Farrington, John, Leiws, D.J.,(1993), NGOs and the State in Asia, Routledge, London.

ECONM207: GLOBALIZATION AND DEVELOPMENT

Credit 4

Module 1: Globalization: An Overview and Issues

Historical perspectives of Globalization, First Age, Second Age and Third Age of Globalization, Convergence club under Globalization, Globalization and Developing Countries, Risks and Benefits Associated with Globalization, Uneven Process of Globalization, Regionalization under Globalization: Economic Consequences of Regional Integration, Regionalism and the WTO: A Stepping Stone or Stumbling Block?

Module 2: Globalization and its consequences

The Logics of Economic Globalization, Embedded Globalization' and the Rescaling of Economic Activity, Globalization of Politics and the Politics of Globalization, Globalization and the Crisis of the Nation State Policies, Globalization and State Retrenchment: The Evidence Assessed. Globalization of Production: The Rise of Global Production, Global Value Chains: Governance and Location, China as the World's Factory.

Module 3: Globalization, Economic Development and Environment

Ways of Thinking about Development, Development Theory in Practice, The Crisis of the Washington Consensus, Responses to the Crisis of the Washington Consensus, Interpreting the Relationship between Globalization and Development: Globalization, Growth, Poverty, Inequality, Resentment, and Imperialism. Globalization and the Environment: History of Global Environmentalism, Globalization and Environmental Change, Corporations and Sustainable Development.

Readings

1. John Ravenhill, Global Political Economy, Oxford University Press, 3rd Edition, 2011.
2. Saul Bernard Cohen, Geopolitics: The Geography of International Relations, Rowman & Littlefield, 2009.
3. Krugman and Obsfeld, International Economics: Theory and Policy, 10th Edition, 2015.
4. Pilbean, Keith, International Finance, Palgrave Macmillan, 3rd Edition, 2006.
5. Feenstra and Taylor, International Economics, Worth Publishers, 3rd edition, 2010.

ECONM208: POPULATION STUDIES

Credit 4

Module 1: Introduction

Population study and demography; its relation with other disciplines; Theories of Population - Malthus, Optimum theory of population, and Theory of Demographic Transition; Historical evidence of population growth in developed and developing countries.

Module 2: Sources of Demographic Data and Analysis

Sources of Demographic data in India: Census - Civil registration system and Demographic surveys; National Family Health Survey 1 and 2 - their relative merits and demerits. Crude birth and death rates, age specific birth and death rates, standardized birth and death rates. Study of Fertility; total fertility rate, gross reproduction rate, and net reproduction rate — study of marital status - Life table; meaning of its columns and its uses – Reproductive and child health in India - Temporal and spatial variation in sex ratios.

Module 3: Population Projection and Policy

Techniques of population projection - Concept of stationary, stable and quasi-stationary population - Aging of population in India - Changes in family structure and old age security. Salient features of Population Censuses of 1971,1981,1991 and 2001; Evolution of population policy in India, shift in policy focus from population control to family welfare and to women empowerment; Demographic status and household behavior – Education women's autonomy and fertility- Population, health, poverty and environment linkage in India; Migration - Urbanisation - The New population Policy.

Readings

1. Agarwal, S.N. (1985), India's Population Problem, Tata McGraw-Hill, Bombay.
2. Bhende, A. and T.R. Kanitkar (1982), Principles of Population Studies, Himalaya Publishing House, Bombay.
3. Agarwala, U.D. (1999), Population Projections and their Accuracy, B.R. Publishing Corporation, New Delhi.
4. Bogue, D. J. (1971), Principles of Demography, John Wiley, New York.
5. Bose, A. (1996), India's Basic Demographic Statistics, B.R. Publishing Corporation, New Delhi.
6. Census of India, Government of India, Various Reports, New Delhi.
7. Choubey, P.K. (2000), Population Policy in India, Kanishka Publications, New Delhi.
8. Misra, B.D. (1980), An Introduction to the Study of Population, South Asian Publishers, New Delhi.
9. Srinivasan, K. (Ed.) (1999), Population Policy and Reproductive Health, Hindustan Publishing Corporation, New Delhi.

ECONM209: RURAL ECONOMICS

Credit 4

Module 1: Basic Concepts

Rural Economics; Concept, Scope, Objectives and Importance of Rural Economics. Characteristics of Rural Economy; Rural-Urban Linkages and Disparity. Rural Economy of India; Size and Structure of Rural Economy. Approaches to Rural Development; Gandhian Approach, V.M Dandekar's Approach, PURA and PRIs.

Module 2: New techniques towards Rural Studies

The concept of Rural Space – Diversification of Rural Economy - Contemporary approaches to the study of change in Rural Societies – Rural economies: Definition, Characteristics of rural versus urban economies, Rent – Seeking economy and Dependent economy – Rural research: The agencies of Non – Humans, Actor Network theory, Path to rural sustainable development, Rural studies and the Regulation Approach – Disaster Management in Rural areas: Disaster response, planning, recovery and rebuilding.

Module 3: Rural Development; Growth oriented strategy

Strategies of Rural Development; Growth oriented strategy, Welfare strategy, Responsive strategy, Holistic strategy, Right-based strategy. Rural Development Programmes; Objectives and Appraisal (SJGSY and MGNREGS). Rural Financing, Rural Economy; Vulnerability, Sustainability and Disaster Management.

Readings

1. Dhingara IC (1986), *Rural Economics*, S Chand & sons, New Delhi.
2. Katar Singh (2009), *Rural Development Principles, Policies and Management* 3rd Edition, SAGE Publications India Pvt Ltd
3. Paul Cloke,Terry Marsden and Patrick Mooney (2006), *"Handbook of Rural Studies"*, SAGE Publications.
4. Kathleen p. Bell, Kevin J. Boyle, Jonathan Rubin (2016), *"Economics of Rural Land-Use Change",* Routledge.
5. Dr. Eveline S. van Leeuwen (2010), *"Urban-Rural Interactions"*, Springer Heidelberg.
6. Thomas Nixon Carver (2016), *"Principles of Rural Economics"*, Ginn and Company
7. Frank Ellis and H.Ade Freeman (2005), *"Rural Livelihoods and Poverty Reduction Policies"*, Routledge.

ECONM301: AGRICULTURAL MARKETING AND PRICE ANALYSIS

Credit 4

Module 1: Introduction to Agricultural Marketing

Concepts in agricultural marketing; Characteristics of agricultural commodities; Problems in agricultural marketing from demand, supply, and institutions side; Market intermediaries and their role; Market regulation and performance; e-NAM; Producer surplus – marketable and marketed surplus; Marketing mix – 7Ps; Marketing efficiency – concept and estimation; Marketing advantages and disadvantages; Institutions in agricultural marketing – role and functions; Marketing cooperatives; Public-private partnership - successful case studies.

Module 2: Analysis of Agricultural Market System

Importance of market analysis in the agricultural system; Software used in market analysis; Agricultural commodity markets – spot and futures; Market information; Market structure and performance; Agri-commodity exchanges – price discovery and risk management in commodity markets; Regulatory mechanism of agri-futures trading; Stakeholder analysis; Multimarket estimation; Market integration – vertical and horizontal; Price integration and transmission between markets; supply / value chain analysis; GAP analysis; Current trends in the market system.

Module 3: Analysis of Agricultural Commodity Prices

Characteristics of agricultural commodity prices; Data sources for agricultural commodity prices; Quantitative estimation – growth, risk, price spread, and seasonal variation; Univariate and multivariate analysis of price series; Lag operators and difference equations; Demand and supply estimation; Supply response models; Agri-commodity price forecast – methods, validation, and reporting; Commodity price indices – types and econometric estimation; Markov-chain analysis.

Readings

1. Acharya SS and Agarwal NL (1994) Agricultural Prices - Analysis and Policy. Oxford & IBH Publishers, New Delhi.
2. Acharya SS and Agarwal NL (2021). Agricultural Marketing in India. Science Technology.
3. Ferris JN (1998). Agricultural Prices and Commodity Market Analysis. McGraw-Hill.
4. Goodwin JW (1994). Agricultural Price Analysis and Forecasting. Wiley.
5. Hallam D (1990). Econometric Modeling of Agricultural Commodity Markets. New Routledge.
6. Martimort D (1996). Agricultural Markets: Mechanisms, Failures, and Regulations. Elsevier.
7. Norwood FB, Lusk JL, Peel DS and Riley JM (2022). Agricultural Marketing and Price Analysis. Waveland Press, Inc.
8. Schrimper RA (2001). Economics of Agricultural Markets. Pearson.
9. Timmer CP (1986). Getting Prices Right. Cornell University Press.
10. Tomek WG and Robinson KL (2003). Agricultural Product Prices. Cornell University Press.

ECONM302: BANKING OPERATIONS AND MANAGEMENT IN INDIA

Credit 4

Module 1: Banking Management: Loans and Advances

Brief overview of banking operations and Indian banking system – Loan portfolio of commercial banks in India – Policy, procedures, operations related to credit appraisal and pricing of retail loans, corporate loans – priority sector lending – Investment and treasury operations – Risk management.

Module 2: Banking Management: Deposits and ALM

Composition of liabilities of Indian banks – Banking strategies on composition of bank deposits of different types and their pricing – Asset-liabilities management (ALM) – Management of off-balance sheet items of the banks.

Module 3: Regulatory Compliance and Performance Evaluation

RBI's regulatory and supervisory mechanism - Procedures for submission of various returns by the banks to the RBI – CRR, SLR, Statements on capital adequacy, asset quality, investments, liquidity position, etc. – Analysis of bank's profitability – Transfer Price and related mechanism - Marketing strategies in banks.

Readings

1. Casu, Barbara, Claudia Girardone and Philip Molyneux (2021): *Introduction to Banking,* Pearson.
2. Mishkin, Frederic (2021): *Economics of Money, Banking and Financial Markets*, Pearson.
3. Samantaraya, Amaresh (2023): *Economics of Banking and Bank Management*, Cambridge University Press, *Forthcoming*
4. Singh, Kanhaiya and Vinay Dutta (2013): *Commercial Bank Management*, McGraw Hill Education (India), Chennai

ECONM303: BEHAVIORAL ECONOMICS

Credit 4

Module 1: Introduction to Behavioral Economics

Nature and Scope of behavioural economics – Behavioural economics and the standard model - The Historical Context and birth of Behavioural Economics – 7 basic principles and components of behavioural Economics - The resurgence of behaviourism in economics - Economic rationality and irrationality - Motivations and Incentives: Intrinsic *versus* extrinsic.

Module 2: Decision making models

The decision-making and transitivity in Standard Model – Rational Decision marking models- rational decision process – Problems with rational decisions Model - Bounded Rationality Model- Institution model- Bias in Decision making Model – Non rational Decision Making Model (NDM Model) - different types of irrational bias – Incremental Model- Difference between rational and irrational model- Reason Based Choice Model – Biases in judgments – Heuristics Model . How the human mind works-the two systems; Familiarity and related heuristics; Representativeness and related biases; Anchoring; Irrationality and adaptation; Hyperbolic discounting.

Module 3: Decision-making under Risk and Uncertainty

Bounded Rationality Mosel- Dual system Model- Risky Choices - Expected utility theory - Prospect theory - Prospect theory *versus* expected utility theory - Behavioural paradoxes: Allais Paradox and the Ellsberg Paradox - Reflection effect games of Kahneman and Tversky – Regret theory - Discount Utility Model - Alternatives to Discount Utility Model.

Readings

1. Camere, Clin F. and George Lowenstein & Mathew Rabin (2004): Advances in Behavioural Economics, Princeton University Press.
2. Wilkinson, Nick and Mathias Klaes (2012): An Introduction to Behavioural Economics, Palgrave Macmillan.
3. John Malcolm Dowling (2007): Modern Developments in Behavioral Economics, *University of Hawaii, USA* and Yap Chin Fang.

ECONM304: FINANCIAL DERIVATIVES AND CORPORATE FINANCE

Credit 4

Module 1: Introduction to Derivative Market

Derivative markets and trading; Types of Derivatives; Arbitrage, Hedging and Speculation; Forward and future contracts; Options; Swaps; Real options. Pricing futures, bounds and option payoffs, the put-call parity; Valuing options and models, Volatility estimation and implied volatility.

Module 2: Capital Structure

Value of firm, Modigliani-Miller irrelevance hypothesis, choices in financing-debt and equity, the financing mix: trade-offs and theory; signalling hypothesis; effect of agency cost on capital structure, cost of capital, empirical determinants of capital structure choice

Module 3: Dividend Policy and Indian Capital Market

Irrelevance of dividend policy without tax; valuation, growth and dividend policy, dividend policy with taxes; theory of optimal dividend policy; other issues-stock dividends and share repurchase, empirical determinants of optimal dividend policy, Indian capital market and financial sector reforms

Readings

1. Hull, J. Options, Futures and other Derivatives, tenth edition, Prentice Hall
2. Brealey, R. and S. Myers, Principles of Corporate Finance, eighth edition, New York, McGraw Hill
3. Panjer, H.H. Financial Economics: with applications to Investments, Insurance and Pensions, Actuarial Foundation
4. Houthakker, H.S. and P.J. Williamson, Economics of Financial Markets, Oxford University Press, 1996

ECONM305: HEALTH ECONOMICS

Credit 4

Module 1: Health Economics and its Applications

Introduction to Health Economics: Definition of economics, Opportunity cost, Causes of Market Failures and Need for Health Economics. Definition of Health Economics, Scope and Importance of Health Economics.
Market failure, public policy, equity and efficiency, Health economics and population dynamics – demographic aging, obesity, disability and malnutrition.

Module 2: Demand and Supply of Health

Demand for Health Care, Grossman Model, and Disparities in Health Care, Measuring Health Outcomes, Quality Adjusted Life Years (QALYS), Disability Adjusted Life Years (DALYS), Economic burden of disease, Health infrastructure: Private and Public.

Module 3: Economic Evaluation of Health Care and Overview of Health Sector in India

Types of analysis: Cost-effectiveness, Cost-utility and Cost-minimization, Cost Benefit Analysis. Willingness to pay thresholds.
Health outcomes, Health systems, Health financing, Health policy in India.

Readings

1. Battacharya, Jay, Timothy Hyde, and Peter Tu (2014):,Health Economics, 1st Edition, Palgrave Macmillan.
2. Morris, S., Devlin N., Parkin. D., Spencer, A. (2012): Economic Analysis in Health Care, 2nd Edition**.** London, Wiley
3. Dreze, Jean and Amartya Sen (1996): *India : Economic Development and Social Opportunity*, Clarendon Paperbacks.

ECONM306: INTRODUCTION TO DATA ANALYSIS USING R

Credit 4

Module 1: Introduction to R and Object-Oriented Programming
Installing R and RStudio, interface of RStudio, CRAN, R packages, accessing help topics, basic arithmetic operations: using R as a calculator, performing mathematical operations; creating and accessing objects: numeric, character, logical, vectors, matrix, data frames, factors, lists, accessing subsets of data using conditional statements and logical conditions.

Module 2: Data Handling and Basics of Data Analysis
Reading data from packages, accessing external data from text, CSV and Excel files, file attributes, reading cross-sectional, time series and panel data, preparing data for analysis: attaching data files, time series data of regular and irregular frequency, summarizing data, probability functions: finding p-values, critical table values, probability density plots of distributions, generating random numbers using distributions hypothesis tests: z-test, t-test – two sample tests, paired sample test, chi-square test for variance, F-test for equality of variances, regression using Ordinary Least Squares: Bivariate and Multivariate Regression Models, Functional Forms, Violation of assumptions of CLRM.

Module 3: Plots and Documentation
Generating two dimensional plots: scatter plot, line plot, bar plots, box plots, fixing attributes to plots, plots of time series data: multi-panel plots, multi-axis plots, three dimensional plots, basics of ggplot2, creating user defined functions, Creating LaTex documents and presentations in RStudio, Exporting R Markdown document: source codes with and without echo.

Readings
1. Kleiber, C. & Zeileis, A. (2008). *Applied Econometrics with R*, Springer.
2. Adler, J. (2012). *R in a Nutshell,* 2nd edition, O'Reilly.
3. Wickham, H. & Grolemund, G. (2016). *R for Data Science*, O'Reilly.

ECONM307: MIGRATION AND DEVELOPMENT

Credit 4

Module 1: Introduction

Migration definition; What constitutes a migratory move; measures of migration; Questions addressed in the study of migration; importance of migration: migration and urbanization; possible advantages of living in cities; migration and development.

Module 2: The Determinants and consequences of Migration

What factors cause migration; approaches to modeling migration: Gravity models, Human capital models, Job search models; Family migration; gender and migration – consequences of migration: for the migrants, for destination regions/countries, for origin regions/countries.

Rural-to-urban migration: The Todaro model, the "new economics of migration."; Migrants and the labour force; labour migration and the changing nature of work and employment; 'the Precariat': Globalisation and Migrant Employment; human rights of migrant workers.

Module 3: Emigration and Migration Policy

Nature of the migration: Permanent, temporary, circular, return; brain-drain, brain-gain and brain-circulation; transnationalism: Lifestyle, Families and Identities; remittances and other development initiatives: adaptation and integration; economic effects of remittances.

International Legal and Cooperation Framework; Labor Migration Policies: Origin and Destination – IOM, ILO convention and recommendations; Migration and GATS; Bonded Labour Act 1976, Interstate Workmen Act 1978.

Readings

1. Caroline B. Brettel, James F. Hollifield (2022) "Migration Theory: talking across disciplines" Routledge (Fourth Edition).
2. S Irudaya Rajan and RB Bhagat (2022) "Researching Internal Migration" Routledge (First Edition).
3. Nicholas Van Hear and Ninna Nyberg Sørensen (2003) "The Migration-Development Nexus" IOM.
4. Guy Standing (2011) "The Precariat: The New Dangerous Class" Bloomsbury.
5. Gijsbert Oonk (2007) "Global Indian Diasporas Exploring Trajectories of Migration and Theory" Amsterdam University Press.
6. KNOMAD (2020) "Migration and Development Brief 33" World Bank.

ECONM308: MULTIVARIATE STATISTICS

Credit 4

Module 1: Multivariate Probability Distribution
Joint Probability Distribution (JPD) function and Joint Cumulative Distribution (JCD) function for discrete and continuous random variables, 3D visualization of bivariate JPD function, Marginal distribution and marginal density functions, Conditional distribution and conditional density functions, Moments of JPD functions – mean, variance and covariance, Conditional expectation, Bivariate normal distribution.

Module 2: Statistical Inference
Theoretical distributions - Chi-square, student's T and F-distribution, Test of Inference– Goodness of Fit for multinomial population and Test of Independence of two variables, Analysis of Variance (ANOVA) – One factor and Two factor ANOVA, General Linear Model to estimate high order ANOVA, MANOVA and MANCOVA, Higher order ANOVA models.

Module 3: Regression Analysis
Correlation vs Regression, Bivariate and Multivariate regression models – Ordinary Least Squares and Maximum Likelihood method to estimate parameters, Tests of Significance, Assessing Overall Fit of model, Multicollinearity, Regression diagnostics. Practical applications in software packages.

Readings
1. Miller, I. & Miller, M. (2021). John E. Freund's Mathematical Statistics with Applications, 8th edition, Pearson.
2. Hogg, R. V, Tanis, E. A., Zimmerman, D. L. (2021). Probability and Statistical Inference, 10th edition, Pearson.
3. Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., Cochran J. J. (2018). *Statistics for Business & Economics*, 13th edition, Cengage.
4. Doane, D. & Seward, L. (2022). *Applied Statistics in Business and Economics*, 7th edition, McGraw Hill.
5. Gujarati, D. N. (2003). *Basic Econometrics*, 4th edition, McGraw-Hill.

ECONM309: Qualitative Research Methodology

Credit 4

Module 1: Introduction to Qualitative Research

Overview and Introduction, Difference between qualitative and quantitative research – Epistemological and Ontological underpinnings. Qualitative Research Methods in the Field, Need, scope and advantages, Ethnographic Fieldwork in Social Sciences. Introduction to Grounded Theory, Phenomenology, Saturation, Triangulation, and Negative Cases..

Module 2: Planning and Designing Qualitative Research

Picking a Site or Context, stereotypical or typical – prejudices, social stigma and taboo, Ethics and Dilemmas of Fieldwork, Negotiating Access and Entry and locating within the field, Developing Field Notes - Keeping Field Notes. The Art of Note – Taking. Conducting Observations, oral narratives, case studies, Interviews and Group Discussions, active listening and probing as key research tools, Subjective and Reflective Elements. Documents, Texts, Audio, and Visual Materials..

Module 3: Analysis and Interpretation

Coding and Analysis – Texts Vs Thematic, Discourse, Narrative, Content, Schematic, Hermeneutics, Ethics of interpretation, Writing and presenting qualitative Data. Software for qualitative analysis..

Readings

1. Russell Bernard. Research Methods in Anthropology: Qualitative and Quantitative Approaches, Fifth Edition, AltaMira Press, UK.
2. Denzin, N, and Lincoln, Y. 2011. The SAGE handbook of qualitative research (4th ed.). Thousand Oaks, CA: Sage
3. Silverman, D. 2013. Doing Qualitative Research, London: Sage
4. Lindlof, T. R., & Taylor, B. C. (2011). Qualitative communication research methods (3rd ed.). Thousand Oaks, CA: Sage.
5. Handbook of Qualitative Organizational Research: Innovative Pathways and Methods..

Level 400

ECONM401- ADVANCED ECONOMETRICS

Credit 4

Module 1: Multi-Equation Models
Seemingly unrelated regression and its application. Structural equation models-specification, endogenous, exogenous and predetermined variables, structural versus reduced form, simultaneity bias, identification: rank versus order condition, exact and over identifications, methods of estimation: indirect least squares, instrumental variable estimation, two-stage least squares and three-stage least squares.

Module 2: Discrete Response Models
Introduction to binary variables, Linear probability models and their limitations, Normal and Logistic curve, Probit and Logit models, estimation and inference, hypothesis testing, odds ratios, marginal effects and goodness of fit measures, Multinomial models, Ordinal models.

Module 3: Panel Data Models
Introduction to panel data, pooled repeated cross-section model, within and between estimators, one-way fixed effects model, fixed effects model using least squares dummy variable approach, first difference estimator, random effects model, time fixed effects, Tests of hypothesis for pooled or fixed effects model, pooled and or random effects models (Breusch-Pagan Lagrange Multiplier Test) and fixed or random effects (Hausman test), Hausman-Taylor estimator.

Readings
1. Greene, William H. *Econometric Analysis*. 6th Edition, Prentice Hall. 2008..
2. Greene, William H., and David A. Hensher. *Modeling ordered choices: A primer*. Cambridge University Press, 2010.
3. Angrist, J. D., & Pischke, J. S. (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.
4. Baltagi, *Econometric Analysis of Panel Data, 5th Edition*, Wiley, 2013
5. Cameron, C.A. and Trivedi, P.K. Microeconometrics: Methods and Applications. Cambridge U.P., 2005.
6. Wooldridge, J. M. *Econometric Analysis of Cross Section and Panel Data*. The MIT Press,2nd edition, 2010.

ECONM402: Advanced Mathematical Methods for Economics

Credit 4

Module 1: Multivariate Calculus and Unconstrained Optimization

Rules of differentiation and partial derivatives, derivatives of implicit functions, Elasticity of Substitution, Homogeneous and Homothetic functions – economic applications Differentials and Total Differentials – Rules of Differentials, Total derivatives, differentiating system of equations – Jacobian matrix, Problems of maxima and minima in single and multivariable functions, Unconstrained optimization: Optimum values and extreme values – First and second derivative tests.

Module 2: Constrained Optimization

General Structure with two independent variables, derivation of first order and second order conditions, Pareto optimality conditions without and with public goods. Constrained optimization with inequality constraints – linear programming problem and non-linear optimization – constraint qualification and sufficiency theorems, duality and envelope theorem – Duality, Roy's Identity, Shephard's Lemma.

Module 3: Dynamic Analysis

Review of Integral Calculus – Domar growth model, Continuous Time: First order Differential equations – homogenous and non-homogenous case, Dynamics of market price, exact differential equation, Solow growth model, Discrete Time: First order Difference equations – Iterative method, homogenous and non-homogenous case, Dynamic stability of equilibrium, Cobb-web model.

Suggested Readings

1. Chiang, A.C. & Wainwright, K. (2005). *Fundamental Methods of Mathematical Economics*, 4th edition, McGraw Hill.
2. Bradley, T. (2013). *Essential Mathematics for Economics and Business*, 4th edition, Wiley.
3. Sydsæter, K. & Hammond, P. (2012). *Essential Mathematics for Economic Analysis*, 4th edition, Pearson.
4. Hoy, M., Livernois, J., McKenna, C., Rees, R & Stengos, T. (2011). *Mathematics for Economics,* 3rd edition, MIT Press.
5. Henderson, J. M. & Quandt, R. E. (1980). *Microeconomic Theory: A Mathematical Approach,* 3rd edition, McGraw-Hill.
6. Renshaw, G. (2021). *Maths for Economics*, 5th edition, Oxford University Press.

ECONM403: ADVANCED MICROECONOMICS

Credit 4

Module 1: Advances in Demand Theory

Recent developments in demand theory – Pragmatic Approach – Constant Elasticity of Demand function, Dynamic Demand function, Lagged Adjustment in interrelated markets – Cobweb model, Linear Expenditure systems, Indirect utility function, Modern utility analysis of Choices involving risk or uncertainty – Neumann-Morgenstern, Friedman-Savage and Markowitz Hypotheses,

Module 2:   Pricing Methods and   Theory of firm

Alternate Pricing strategy, Theory of Full cost pricing and average cost pricing-   - controlled or administered pricing – minimum support price, Limit pricing theory- Bains version, Sylos-Labini model of limit pricing, Public Utility Pricing.- elements of social cost benefit analysis Baumol's sales revenue maximization model - Williamson's model of managerial discretion - Marris model of managerial enterprise - Behavioural model of Cyert and March.

Module 3: Economics of Uncertainty

Individual behaviour towards risk, expected utility and certainty equivalence approaches, risk and risk aversion, Economics of insurance – risk pooling and risk spreading, Mean-variance analysis, Economics of search – adaptive search, efficient market hypothesis, stochastic models of inventory demand - search and transaction cost, Economics of information – Principles of information asymmetry, Adverse selection, signalling and screening,   Principal   agent problems, and moral hazard.

Readings

1. Varian, H.R.(2019). Microeconomics Analysis, W.W. Norton.
2. Mas-Colell, A., Whinston, M. D. & Greene, J. R. (1995). Microeconomic Theory, OUP.
3. Pindyck, R. S. & D. Rubinfield (2018). Microeconomics, 9th edition, Pearson.
4. Koutsoyiannis, A. (1979). Modern Microeconomics, Palgrave Macmillan.
5. Henderson, J.M. & Quandt, R.E. (1980). Microeconomic Theory: A Mathematical Approach, 3rd Edition, McGraw-Hill.
6. Layard, P.R.G. & Walters, A.A. (1978). Microeconomic Theory, McGraw Hill.
7. Sen A. (2006). Microeconomics: Theory and Application, Oxford University Press.
8. Baumol, W.J (1979). Economic Theory and Operations Analysis, Prentice Hall.
9. Nicholson Walter (2007). Microeconomic Theory: Basic Principles and Extensions, South-Western.

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ECONM404: ADVANCED MACROECONOMICS

Credit 4

Module 1: Review of Macroeconomic Debates and Question of Rational Behaviour

Roots of historical debates in macroeconomics – Classical vs Keynesian, Keynesian vs Monetarists, New-Classical vs New-Keynesian, Rational Expectation and Lucas Supply function, neutrality of money, Policy Ineffective Theorem – Lucas Critique, Rational Expectation and Implications of Monetary Policy..

Module 2: Dynamic Macroeconomic Models

The Solow Model and the Central Questions of Growth Theory, infinite-horizon and Overlapping-generations Models - Ramsey–Cass–Koopmans Model - Dynamics of the Economy, Balanced Growth Path, Effects of Fall in the Discount Rate and Government Purchases Diamond Model - Household Behavior and Dynamics of the Economy, Possibility of Dynamic Inefficiency, Role of Government, Real Business Cycle Theory - Baseline Real-Business-Cycle Model, Household Behavior, Solving the Model in the General Case and Implications.

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Module 3: Recent Advancements in Macroeconomic Policies

Time Inconsistency and the Debate over Rules vs Discretion, Taylor's Rule and monetary policy, Theory of Inflation Targeting, issues relating to inflation targeting,

Readings

7. Mankiw, N. G. (2022). Macroeconomics, 11th edition, Macmillan Learning.
8. Froyen, R. T. (2013), Macroeconomics: Theory and policies, 10th edition, Pearson.
9. D'Souza, E. (2012), Macroeconomics, 2nd edition, Pearson.
10. Levačić, R. & Rebmann, A. (1982), Macroeconomics: An Introduction to Keynesian – Neoclassical Controversies, Macmillan.
11. David Romer (2018), Advanced Macroeconomics, 5th edition, McGraw-Hill.
12. David, G Pierce and Peter J Tysome (1985), Monetary Economics: theories, evidence and policy, Butter worths.

ECONM405: ADVANCED STATISTICAL METHODS

Credit 4

Module 1: Theoretical Distribution

Discrete theoretical distribution – Binomial distribution, Poisson distribution; Continuous theoretical distribution – Normal Distribution – Standard Normal Variate; Approximation – Normal approximation to Binomial and Poisson distribution; Other continuous distributions – Student's t-distribution, Chi-square distribution, F-distribution – degrees of freedom.

Module 2: Sampling and Estimation

Population vs sample, Population parameter vs Sample statistic, sampling distribution, standard error, Law of Inertia of Large Numbers, Central limit theorem, Estimation: Estimator and estimate, Point and Interval Estimation, Desirable properties of an Estimator, Standard error of Estimator, Confidence limits for a population parameter.

Module 3: Statistical Inference

Formulation of Statistical Hypothesis, Testing of Hypothesis – Null Hypothesis and Alternative Hypothesis, Stages in Hypothesis testing, Types of Error in Hypothesis testing – Type I error and Type II error, Power of test, Level of Significance and Level of confidence – Critical region, Two tailed test and one tailed test, Computation of test statistic, Small sample tests – t-test, chi-squared test, F-test, Large sample test - Z test for mean and proportion; Test of Significance concerning correlation coefficient.

Readings

1. Miller, I. & Miller, M. (2021). *John E. Freund's Mathematical Statistics with Applications*, 8th edition, Pearson.
2. Hogg, R. V, Tanis, E. A., Zimmerman, D. L. (2021). *Probability and Statistical Inference*, 10th edition, Pearson.
3. Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., Cochran J. J. (2018). *Statistics for Business & Economics*, 13th edition, Cengage.
4. Doane, D. & Seward, L. (2022). *Applied Statistics in Business and Economics*, 7th edition, McGraw Hill.

ECONM406: AGRICULTURAL PRODUCTION ECONOMICS

Credit 4

Module 1: Introduction to Agricultural Production Economics

Nature, scope, and significance of agricultural production economics; Agricultural production processes, character, and dimensions (spatial and temporal); Centrality of production functions; Assumptions of production functions; Commonly used production functions in agriculture – Properties, limitations, specification, estimation, and interpretation.

Module 2: Factors of Production and Optimization

Factors of production, classification, interdependence, and factor substitution; Determination of optimal levels of production and factor application; Optimal factor combination and least cost combination of production; Theory of product choice; Selection of optimal product combination. Nature and sources of production risk, modelling, and coping strategies.

Module 3: Cost and Efficiency Analysis

Cost functions and cost curves, components, and cost minimization; Duality theory; Cost and production functions and their applications; Profit function and its estimation; Derivation of firm's input demand and output supply functions; Economies and diseconomies of scale; Technology in agricultural production, nature and effects and measurement; Measuring efficiency in agricultural production – technical, allocative and economic efficiencies; Yield gap analysis – concepts, types, and measurement.

Readings

1. Baumol WG (1973). Economic Theory and Operations Analysis. Practice Hall of India Private Limited, New Delhi.
2. Debertin DL (2012). Agricultural Production Economics. Createspace Independent Pub.
3. Doll JP and Orazem F (1984). Production Economics: Theory with Applications. John Wiley & Sons.
4. Gardner BL and Rausser GC (2001). Handbook of Agricultural Economics Vol. I Agricultural Production. Elsevier.
5. Heady EO (1952). Economies of Agricultural Production and Resources Use. Prentice-Hall Inc., New York.
6. Heady EO and Dillon JL (2012). Agricultural Production Functions. Iowa State University Press, Ames.
7. John DP and Orazem F (1984). Production Economics - Theory and Applications. John Wiley and Sons, New York.
8. John LD (1990). The Analysis of Response in Crop and Livestock Production. Oxford Pergamon Press.
9. Palanisami K, Paramasivam P and Ranganathan C R (2021). Agricultural Production Economics: Analytical Methods and Applications. Astral Publications.
10. Sankhayan PL (1988). Introduction to the Economics of Agricultural Production. Prentice-Hall Pvt. Ltd.

ECONM407: BEHAVIORAL FINANCE

Credit 4

Module 1: Introduction to Behavioral finance

Nature, scope, objectives and application- Investment Decision Cycle: Judgment under Uncertainty - Cognitive information perception - Peculiarities (biases) of quantitative and numerical information perception - Representativeness – Anchoring – Exponential.

Module 2: Behavioral Factors and Financial Markets

The Efficient Markets Hypothesis – Fundamental Information and Financial Markets - Information available for Market Participants and Market Efficiency -Market Predictability –The Concept of limits of Arbitrage Model - Asset management and behavioral factors - Active Portfolio Management: return statistics and sources of systematic underperformance. - Fundamental information and technical analysis – the case for psychological influence.

Module 3: Behavioral Corporate Finance

Behavioral factors and Corporate Decisions on Capital Structure and Dividend Policy - Capital Structure dependence on Market Timing -. Systematic approach to using behavioral factors in corporate decision making - External Factors and Investor Behavior - Mechanisms of the External Factor influence on risk perception and attitudes - Connection to human psychophysiology and emotional regulation Active portfolio management – Source of the systematic underperformance.

Readings

1. Ackert and Deaves, Behavioral Finance: Psychology, Decision-Making, and Markets".
2. John R. Nofsinger, The Psychology of Investing, Pearson Prentice Hall, (4th Edition)
3. Behavioral Finance: Psychology, Decision-Making and Markets, South-Western Cengage Learning, Mason, Ohio.
4. Shleifer, Andrei (2000): Inefficient Markets: An Introduction to Behavioral Finance,Oxford University Press, Oxford.
5. Montier, James (2002): Behavioural Finance, John Wiley & Sons, New York.

ECONM408: ECONOMICS OF AGING

Credit 4

Module 1: Introduction
Meaning and Scope of Economics of aging; Population ageing; Dimensions of aging; Measurements of population aging – subjective and economic measures - old age dependency ratio, life expectancy, life table, economic dependency ratio, functional measures; Population aging: facts and determinants; forecasts on population aging.

Module 2: Theories of Aging and Economic Challenges
Biological, Psychological and Social theories - Disengagement theories, Subculture theory, Continuity theory, Activity theory, Age stratification theory, Person-Environment-Fit theory.
Retirement and Work; Labour force participation; trends in employment; ageism in employment; aging and employment policy; Pensions, savings and labour markets; Macroeconomic effects of population aging; Population, Savings, and Economic Growth; Aging in a life-cycle model; Aging and government spending.

Module 3: Well-being of the elderly and Aging in India
Housing and transportation; Health, morbidity and disability; leisure and recreation; family and social support; elderly care.
Demographics of aging; Public policies in India related to ageing; Welfare Schemes for elderly – Government schemes, Health insurance, Pension schemes, safety and security and Schemes.

Readings
1. Mark Novak (2018) "Issues in Aging" Routledge (Fourth Edition).
2. James H Schulz (2001) "The Economics of Aging" Auburn House (Seventh Edition).
3. David A Wise (Various years) "Economics of Aging" NBER.
4. Jill Quadagno (2017) "Aging and the life course: an introduction to social gerontology" McGraw-Hill Education (Seventh Edition).

ECONM409: ECONOMICS OF INDIAN SOCIAL INSTITUTIONS – I

Credit 4

Module 1: Village, Caste and Conceptual Foundations of Exclusion

Economic Geography, Productive Resources – land and water, nature of its availability, People, Spatial organisation of village, hierarchy of resources, Resources and allocation, production organization, structures and processes. People, caste as a System of Human and Natural Resource Administration, structure and functions of different social groups, Hereditary nature of Rights and Access to Productive Resources, System of privileges and denials and its socio-economic implications. Notions of purity, pollution, ritual merit and discard, notions relating to morality, family, legal heir, occupation as a religious / spiritual duty, the idea of work and its value, and remuneration.

Module 2: Family as a Fundamental Economic Unit

Caste and vitality of family, notions of rights, kinship network, joint and nuclear families, marriage, gender, sexuality, engendering labour, politics of hereditary occupation.

Module 3: The Indian Development Experiences and Social Outcomes

Development of transport, education and employment opportunities, urbanisation and its impact on traditional social structure, emergence of duality - rural and urban spaces and hierarchies of facilities, Productive resources and hierarchies of access and reconfiguration of caste into socio-economic inequalities.

Readings

1. Cohn, Bernard S (1969), "Structural Change in Indian Rural Society 1596-1885", in Frykenberg, Robert Eric edited *Land Control and Social Structure in Indian History,* The University of Wisconsin Press, Madison.
2. Cohn, Bernard S, "The Pasts of an Indian Village", *Comparative Studies in Society and History*, Vol. 3, No. 3 (Apr., 1961), pp. 241-249
3. Gupta, Dipankar, "Whither the Indian Village: Culture and Agriculture in 'Rural' India", *Economic and Political Weekly*, Vol. 40, No. 8 (Feb. 19-25, 2005), pp. 751-758
4. M. N. Srinivas (2003), "An Obituary on Caste as a System", *Economic and Political Weekly*, Vol. 38, No. 5 (Feb. 1-7, 2003), pp. 455-459
5. Ahuja, Ravi (1998), "Labour Unsettled: Mobility and Protest in Madras region, 1750-1800", *The Indian Economic and Social Histoy Review*, Vol. 35, No. 4.
6. Hjejle, Benedicte (1967), "Slavery and Agricultural Bondage in South India in the Nineteenth Century", *The Scandinavian Economic History Review*, Vol. XV, Nos. 1&2.
7. Ludden, David E (1978a), "Ecological Zones and the Cultural Economy of Irrigation in Southern Tamilnadu", Journal of South Asian Studies, New Series Vol. I, No. 1,
8. Mosse, David, "Ecological Zones and the Culture of Collective Action: The History and Social Organisation of A Tank Irrigation System in Tamil Nadu", South Indian Studies 3, Jan-June 1997.
9. Mosse, David, *The Rule of Water: Statecraft, Ecology and Collective Action in South India*, Oxford University Press, New Delhi, 2003
10. Max Weber (1904), The Protestant Ethic and the Spirit of Capitalism
11. Max Weber (1916), The Religion of India: The Sociology of Hinduism and Buddhism,
12. Ambedkar, B.R, "Castes in India", and "Annihilation of Caste", in V. Moon edited *Dr. Babasaheb Ambedkar Writings and Speeches, Vol. I*.
13. Ambedar, B.R., "Hindu Social order: Its Essential Principles", and "Hindu Social Order: Its Unique Features", in V. Moon edited *Dr. Babasaheb Ambedkar Writings and Speeches, Vol. 3*. 29

ECONM410: ECONOMICS OF INDIAN SOCIAL INSTITUTIONS – II

Credit 4

Module 1: Labour, Land, Asset Market and Social Institutions

Traditional society, division of labour or division of labourers, socio-cultural governance of people and their productive resources. Lands – Dry and Wet and its significance in Traditional agrarian organization, collective control of land, land as a private property, land market, people and their abilities to participate in the land market.

Module 2: Market for Marriages – Caste, religion, education, employment and regions as mediating forces

Traditional notion of family, agrarian society and joint families, emergence modern occupations and emergence of nuclear families, education, employment and urbanization mediating ideal marriage arrangements.

Module 3: Human capital for Social Justice and Political Economy of Market

Traditional caste based occupations, remuneration, and access to education, inequality in education system, factors determining ability of people to participate in the labour market, employment during the post-reform period. Society and the nature of market, people's ability to participate in market, changes in culture during the post-reform period, consumerism, and the politics of market mechanism.

Readings

1. Ambedkar, B.R., "Small Holdings in India", in V. Moon edited *Dr. Babasaheb Ambedkar Writings and Speeches, Vol. I*, p. 453
2. Baker, Christopher John (1984), *An Indian Rural Economy 1880-1955: The Tamilnad Countryside*, Oxford.
3. Harris, John (1982), *Capitalism and Peasant Farming: Agrarian Structure and Ideology in Northern Tamil Nadu*, Delhi.
4. Jan Breman, Footloose Labour: Working in India's Informal Economy, Cambridge University Press.
5. Kundu, Amitabh "Making Indian Cities Slum-Free Vision and Operationalisation", EPW, april 27, 2013 vol xlviII no 17
6. Kundu, Amitabh, "Exclusionary Urbanisation in Asia: A Macro Overview" EPW, November 28, 2009 vol xliv no 48.
7. Kundu, Amitabh , "Politics and Economics of Urban Growth, EPW, May 14, 2011 vol xlv I no 20
8. Chris Fuller and *Haripriya Narasimhan* (2011) "Caste, race, and hierarchy in the American South". Journal of the Royal Anthropological Institute (n.s.) 17, 604-21.
9. Chris Fuller and *Haripriya Narasimhan* (2008), "From landlords to software engineers: migration and urbanization among Tamil Brahmans", Comparative Studies in Society and History 50: 170-96.
10. Souza, V. S. (1975). Social Inequalities and Development in India. *Economic and Political Weekly*, May 10, pp. 770-773.
11. Maria Saleth, R. (1997). Occupational Diversification among Rural Groups. *Economic and Political weekly*, Vol. 32, No 30, (July 26), pp. 1908-1917.

ECONM411: GAME THEORY AND APPLICATION

Credit 4

Module 1: Static and Dynamic Games of Complete Information

Rational Choice Theory, Strategic form or normal form games; solution concept: Iterated deletion of strictly and weakly dominated strategies; Best Response Functions and Nash equilibrium, mixedand pure strategies; Applications in Industrial Organisation, Labor Market and Political Economy. Extensive forms, backward induction, Application: Stackelberg Model of Duopoly, Sequential Bargaining, Finitely and infinitely repeated games, Trigger Strategies, Collusion between Cournot Duopoly, Dynamic games of complete but imperfect information, Subgame Perfect Nash Equilibrium; Bargaining with complete information, ultimatum game, hold up game, bargaining as an extensive game: Rubinstein model, axiomatic bargaining: Nash bargaining solution, applications.

Module 2: Static and Dynamic Games of Incomplete Information

Incomplete Information, Notion of type and strategy, Static Bayesian Games and Bayesian-Nash equilibrium; Examples of Bayesian Nash equilibrium in Industrial organization under Asymmetric Information, Application: Mixed Strategy Revisited, Mechanism Design, 1st price and 2nd price sealed bid Auctions.

Module 3: Introduction to Cooperative Games

Elements of cooperative games, coalition, transferable utility, super additivity theorem, Solution Concept: core, Examples of Core, Shapley-Value**.**

Readings

1. Osborne, M. J., *An Introduction to Game Theory*, Oxford University Press, 2003
2. Gibbons, R., *A Primer in Game Theory*, Harvester-Wheatsheaf, 1992
3. Fudenberg, D and J. Tirole, *Game Theory*, MIT Press, 1991
4. Osborne, M. J. and A. Rubinstein, *A Course in Game Theory*, MIT Press, 1994
5. Andreu Mas-Colell, Michael Whinston and Jerry Green Microeconomic Theory, Oxford UniversityPress
6. Watson, J.(2013), Strategy, 3rd edition, W.W. Norton & Company

ECONM412: GENDER STUDIES

Credit 4

Module 1: Gender Studies and Demographic Aspects

Introduction to Gender Studies and Demographic Aspects, Importance and concepts of women studies - Decision making, Economic Activity and Women - Factors affecting decision making by women - Women and their access to nutrition- health, education- and social and community resources- economic status- and in work participation rate.

Module 2: Women and Labour Markets

Female work participation - Factors affecting female entry in labour market - Supply and demand for female labour in developed and developing countries- particularly India- Factors affecting female entry in labour market - Wage differentials in female activities- Determinants of wage differentials- gender- education- skill- productivity- efficiency opportunity- Issues of marginalisation and discrimination against women.

Module 3: Gender Planning- Development Policies and Governance

Social Security, Gender Planning, Development Policies and Governance - Social security for women- Review of legislations for women's empowerment, social security & property rights – Need for affirmative action on the part of the government - Mainstreaming gender into development policies, gender planning techniques, gender budgeting, gender sensitive governance- Democratic decentralization and women's empowerment. Gender and development indices- Gender Development Index (GDI) and Gender Empowerment Measure (GEM)- Mainstreaming gender into development policies- Gender-planning techniques- Gender sensitive governance- Paradigm shifts from women's wellbeing to women's empowerment Democratic decentralization (panchayats) and women's empowerment in India.

Readings

1. Agarwal, B., Humphries, J. & Robeyns, I. (eds.) (2010). Capabilities, Freedom and Equality – Amartya Sen's Work from a Gender Perspective. OUP., N. Delhi, India.
2. Agarwal, B. (2008). A Field of One's Own – Gender and Land Rights in South Asia. Cambridge University Press, New Delhi, India. Agarwal, B. (2011). Gender and Green Governance – The 36 Political Economy of Women's Presence Within and Beyond Community Forestry. OUP., New Delhi, India.
3. Boserup, E. (1970), Women's Role in Economic Development, George Allen and Unwin, London
4. Jacobson, J.P. (2007). The Economics of Gender. Blackwell Publishing, USA.
5. Kabeer, N. (1994), Reversed Realities: Gender Hierarchies in Development Thought, Kali for Women, New Delhi.
6. Momsen, J. (2010). Gender and Development. Routledge, USA.
7. Boserup, E. (1970). Women's Role in Economic Development. St. Martin's Press, USA.
8. Goodman, J. (Ed.) (2012). Global Perspectives on Gender and Work. Rowman & Littlefield Publishers, Inc., U.K

ECONM413: INTERNATIONAL FINANCE

Credit 4

Module 1: Global financial Environment

Unique dimensions of international finance, key issues in the international business finance, growing importance of international finance- features of international finance, international finance and economic development, the financial functions in the global context, the challenges of international finance; an introduction to the recent changes in the global financial markets.

Module 2: Balance of Payments and Exchange Rate Determination

Balance of payments: Collection, reporting and presentation of BoP, History of BoP accounts, An overview of sub-accounts in BoP, BoP of US, China and India, Elasticity and absorption approaches to the BoP; automatic BoP adjustment mechanism-automatic mechanism with flexibility in prices, interest rates and income levels.

Foreign exchange; Foreign exchange market; spot market; forwards and future markets; exchange rate, PPP theory of exchange rate determination and law of one price, Absolute and relative PPP, a generalized version of PPP, Balassa-Samuelson model; Uncovered interest rate parity, Monetary models of exchange rate determination, an introduction to Portfolio balance model.

Module 3: Post-war International Monetary System, Crises and Lessons drawn

Bretton Woods system, Breaking down of Bretton Woods system and the post-Bretton Woods era, Reforms of the international monetary system, Eurocurency and Eurobond markets, Currency derivatives: futures, options and swaps, International macroeconomic policy coordination; introduction to Economic and monetary union in Europe.

International debt crisis: Background and origin of debt crisis, the Mexican moratorium, overall evaluation of debt crisis management; Currency crisis and the East Asian Financial Crisis: First, Second and Third generation models of currency crisis, macroeconomic foundations, analysis of East Asian crisis, An evaluation of IMF programmes; Global financial crisis: Background, deregulation and innovations in the international financial markets, impact on the global economy, restoring financial regulation and oversight.

Readings

1. Pilbeam, Keith (2006): *International Finance*, Palgrave Macmillan, New York.
2. Salvatore.S(2016), International Economics, Wiley.
3. Grath. A (2008), International Trade and Finance, London.
4. Levi.D.M (2005), International Finance, Routledge, London.
5. Gandolfo(2002), International Finance and Open-Economy Macroeconomics, Springer, Tokyo.
6. Bishop.E(2004) Finance of International Trade, Elsevier, New York.
7. Connolly.M.B (2007) International Business Finance, Routledge, New York.
8. Hansanti. S and Islam. S. M. N(2008)International Finance in Emerging Markets: Issues, Welfare Economics Analyses and Policy Implications, Physica-Verlag Heidelberg

ECONM414: ISSUES IN INDIAN PUBLIC FINANCE

Credit 4

Module 1: Pattern, Trends and Reforms of Taxation

Pattern and trends of Central Government taxes, revenue performance of central taxes., Non tax revenues, Inter-state analysis of state taxes, Direct tax and indirect tax reforms in India, Tax reforms (Chelliah Committee), Advisory group on tax policy and tax administration for tenth plan, Kelkar committee on direct and indirect taxes, tax reforms suggested by twelfth Finance commission, State VAT, Goods and Services tax reforms, pattern, Performance and recent developments in GST

Module 2: Structure of Expenditure, Management and Issues

Composition and trends of combined expenditure, Central government expenditure, state government expenditure. Designing optimal government expenditure policy, Expenditure outcomes, social sector expenditure, subsidies, Revenue and capital expenditure, shifts towards productive capital expenditure, Expenditure management and reforms, pension reforms, subsidy reforms.

Fiscal Policy and Macroeconomic Management: Budget and procedures, Pattern of Deficits, deficit financing, Public Debt, Debt management and sustainability, Solvency of public sector, FRBM and Rule based fiscal policy.

Module 3: Issues in Fiscal Federalism and Transfers in India

Constitutional provision and Vertical assignment, Changing Dynamics of Horizontal and vertical fiscal imbalances, Design of Federal fiscal transfers in India, Political economic aspect of federal transfers, Pattern, trends and major issues in federal fiscal transfers India, equity and efficiency, Role of Finance commission and other resource mediating agencies, Assignment of weights and criteria for tax devolution. Issues of Implicit transfers. Issues in transfers to Local government

.**Reading**

1. Atkinson, A. and Stiglitz, J., Lectures in Public Economics, McGraw Hill, 1980
2. Oates, E. Wallace, Fiscal federalism, Harcourt brace Jovanovich, New York, 1972
3. Boadway, Public Sector Economics, Cambridge University Press, 1979
4. Aurebach, A. and Feldstein, M., Handbook of Public Economics, Vol. 3, North Holland, 2002
5. Rao, M Govinda. Studies in Indian Public Finance, Oxford University Press, 2022
6. Srivastva, D.K. Issues In Indian Public Finance, New Century Publication, 2005
7. Chelliah, R.J., Towards Sustainable Growth: Essays in Fiscal and
8. FinancialSectorReforms in India, Oxford University Press, 1996
9. Govinda Rao M. and T. K. Sen, Fiscal Federalism in India: Theory and Practice, 1996
10. Rao, M Govinda and Nirvikar Singh, 2005,The Political Economy of Federalism in India , Oxford University Press,
11. Srivastava, D. K. (Ed.) Fiscal Federalism in India: Contemporary Challenges and Issues before Eleventh Finance Commission, NIPFP and Har-Anand, 2001
12. Shome, P. (Ed.) Handbook of Indirect Taxes, IMF Publications, 1996
13. Srivastava, D.K., T.K. Sen et al. Government Subsidies in India, NIPFP, 1997

ECONM415: OPTIMIZATION TECHNIQUES

Credit 4

Module 1: Linear and Non-linear Programming

Linear programming: Concept and formulation, Graphical method – Finding of extreme points and Optimal Extreme, Simplex method – Big M and Two-phase method, Cases of unbounded region and infeasible solution in graphical and simplex method, Duality, Economic interpretation of a Dual and shadow price, Non-linear programming – its nature, Kuhn-Tucker conditions - Constrained qualification, Kuhn-Tucker sufficiency theorem –Arrow-Enthoven Sufficiency theorem. Economic applications.

Module 2: Unconstrained and Constrained Optimization

Relative maximum and minimum, First derivative test, Second and higher derivatives – Second derivative test, Nth derivative test for Relative Extremum of a Function of One Variable, Extreme values of a Function of Two or more variables – Second order condition – Hessian matrix and interpretation, Second-order Conditions in Relation to Concavity and Convexity, Effects of a Constraint in Optimization, Second order conditions, Quasi concavity and Quasi convexity – Utility maximization and Consumer demand, Least-cost combination of inputs.

Module 3: Game Theory

Introduction to Game Theory – concepts and types of games, zero sum games with saddle point and mixed strategies, Games with perfect information: Nash Equilibrium, Strategic games – Prisoner's dilemma, matching pennies, Best response functions, Dominated strategies, Cournot's model of Oligopoly – Bertrand's model of oligopoly – Mixed strategy equilibrium – Games with Imperfect Information.

Readings

1. Chiang, A.C. & Wainwright, K. (2005). *Fundamental Methods of Mathematical Economics*, 4th edition, McGraw Hill.
2. Sharma, J. K. (2017). *Operations Research Theory and Applications*, 6th edition, Trinity Press.
3. Osborne, M., (2004): *An Introduction to Game Theory*, Oxford University Press.
4. Sydsæter, K. & Hammond, P. (2012). *Essential Mathematics for Economic Analysis*, 4th edition, Pearson.

ECOM416: PUBLIC ECONOMICS

Credit 4

Module 1: Public Economics, Government and theory of Public Goods

Introduction to Public economics, Role of state, Market verses Government, Public goods and externalities, merit goods, Samuelson theory, free rider problem, median voter theorem, theory of rent seeking.

Module 2: Theory of Taxation and Expenditure

Theory of taxation, Efficiency and equity, dead weight loss, Optimal taxation, measuring progressivity and effect of taxation, Tax reforms.

Determining optimal size of government, Growth of expenditure, theories of expenditure, financing of public expenditure: debt versus tax financing, impact of public expenditure on the level and composition of output, designing optimal government expenditure policy: issues of size and composition, designing subsidy policy: health and education expenditure policy in India.

Module 3: Federal Fiscal relations and Fiscal Policy Issues

Theory of fiscal federalism, Vertical assignment, Horizontal and vertical fiscal imbalances, Federal fiscal transfers, issues of equity and efficiency, designing equalization transfers, conditional and unconditional grants, fiscal federalism in India: transfer mechanisms, role of Finance commission and other resource mediating agencies, Issues of Implicit transfers.

Budget deficit and public debt: Keynesian, neo-classical, and Ricardian equivalence, debt dynamics and sustainability, Fiscal policy and objectives, interdependence of fiscal and monetary policies, Rule based fiscal policy and budget management.

Readings

1. Atkinson, A. and Stiglitz, J., Lectures in Public Economics, McGraw Hill, 1980
2. Oates, E. Wallace, Fiscal federalism, Harcourt brace Jovanovich, New York, 1972
3. Hillman A. L., Public Finance and Public Policy, Cambridge University Press, 2003
4. Richard, A Musgrave and P.B. Musgrave, Public finance in Theory and Practice, McGraw Hill,
5. Boadway, Public Sector Economics, Cambridge University Press, 1979
6. Aurebach, A. and Feldstein, M., Handbook of Public Economics, Vol. 3, North Holland, 2002

7. Chelliah, R.J., Towards Sustainable Growth: Essays in Fiscal and Financial SectorReforms in India, Oxford University Press, 1996
8. Govinda Rao M. and T. K. Sen, Fiscal Federalism in India: Theory and Practice,1996
9. Srivastava, D. K. (Ed.) Fiscal Federalism in India: Contemporary Challenges andIssues before Eleventh Finance Commission, NIPFP and Har-Anand, 2001
10. Shome, P. (Ed.) Handbook of Indirect Taxes, IMF Publications, 1996
11. Srivastava, D.K., T.K. Sen et al. Government Subsidies in India, NIPFP, 1997

ECONM417: RISK MANAGEMENT-THEORIES AND PRACTICE

Credit 4

1. Introduction to Risk Management

Sources of risk, currency risk, fixed income risk, equity risk, commodity risk, market risk measurement, VaR as downside risk, definition, parameter, elements of VaR system, stress testing.

2. Hedging and Credit Risk Management

Hedging liner risk, optimal hedging, hedge ratio as regression coefficient, duration hedging, beta hedging, non-linear risk hedging, delta and dynamic hedging, Settlement risk, introduction to credit risk, measuring credit risk, credit exposure, types of credit derivatives, credit default swap, pricing and hedging credit derivatives, measuring credit VaR, credit risk models, Basel accord, the Basel market risk charges.

3. Operation & Integrated Risk Management

Introduction to operational risk, identifying operational risk, managing operational risk, risk capital, RAROC, risk capital, RAROC methodology, legal accounting, tax risk management.

Readings

1. Jorian, P. *Financial Risk Manager Handbook*, Wiley, 2002
2. Holton, G.A. *Value-at-Risk- Theory and Practice,* Academic Press, 2003
3. Alexander, C. *Market Models: A Guide to Financial Data Analysis*, Wiley 2004
4. Dubofsky, D.A. and Miller, T.W. *Derivatives: Valuation and Risk Management*, OxfordUniversity Press, 2003.

ECONM418: TIME SERIES ECONOMETRICS

Credit 4

Module 1: Basic Concepts and Univariate Time Series Models

Stochastic process, white noise process, stationary and non-stationary stochastic process – difference stationary and trend stationary process, concept of unit root, tests for detecting unit root– dickey-fuller test, augmented dickey-fuller test, testing for unit roots in panel data.

Autoregressive (AR) model, Moving Average (MA) model, ARMA, ARIMA and SARIMA models, Box Jenkins Methodology – model identification, diagnostics, forecasting – dynamic vs static forecasts.

Module 2: Multivariate Analysis

Concept of Spurious regression – problems associated with spurious regression, concept of cointegration and testing for cointegration – Engle Granger and Johansen-Juselius methodologies, multi-cointegration and multiple cointegration, error correction model, Panel cointegration and error correction models, ARDL approach – testing cointegration among mix of I(0) and I(1) variables using bounds test

Structural equations modelling – VAR models – primitive system, VAR in standard form, identification, lag length selection, factorization – Cholesky decomposition and structural factorization, Causality tests in VAR framework, Innovation accounting – impulse response functions, variance decomposition.

Module 3: Modelling high frequency data

Modelling high frequency data – problems associated with high frequency data – presence of autocorrelation and heteroskedasticity, testing for ARCH effect, estimating ARCH models – ARCH, GARCH, ARCH – M, TARCH, EGARCH, diagnostic checks

Readings

1. Walter Enders (2015), Applied Econometric Time Series, 4th Edition, Wiley.
2. Kerry Patterson (2000), An Introduction to Applied Econometrics, Palgrave Macmillan.
3. James D. Hamilton (1994), Time Series Analysis, Princeton University Press.
4. Chris Brooks (2002), Introductory Econometrics for Finance, Cambridge University Press

ECONM419: URBAN ECONOMICS

Credit 4

Module 1: Introduction to Urban Economics and Market Forces

What is urban economics? what is a city? 5 axioms of urban economics, opportunity cost, comparative advantage, development of a factory town, firm clustering, labor pooling, localization and urbanization economies, differences in city sizes, urban employment growth and the multiplier.

Module 2: Land Rent, Land-Use Patterns, and Urban Transportation

Monocentric city, labor and transportation costs, urban sprawl, diversity, income segregation, demand for public goods, neighborhood externalities, neighborhood choice model, education production function, causes and consequences of segregation, urban growth control.

Auto congestion, congestion tax, air pollution, vehicle collisions, mass transit, public policies to internalize the externalities from autos, individual modal choice decisions, effects of urban form on mode choice

Module 3: Economics of Housing

Heterogeneity of housing, hedonic determination of equilibrium prices, durability and optimal maintenance level, moving costs, social welfare from public housing, policy alternatives to public housing.

Readings

1. Arthur O'Sullivan (2012) "Urban Economics" McGraw-Hill Irwin (Eighth Edition).
2. Edward Glaeser (2011) "Triumph of the City" The Penguin Press.
3. Jan K Brueckner (2011) "Lectures on Urban Economics" MIT Press
4. Enrico Moretti (2013) "The new Geography of Jobs" Mariner Books.