

Category II

B.A. Programmes with Economics as Major discipline

DISCIPLINE SPECIFIC CORE COURSE -5 (DSC-5): Intermediate Microeconomics I: Behavioural foundations of Market Interactions

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Intermediate Microeconomics I: Behavioural foundations of Market Interactions – ECON007	4	3	1	0	Passed Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is designed to formally analyze the behaviour of individual agents like consumers and producers under certain conditions.
- Mathematical tools are used to facilitate understanding of the basic concepts.
- This course looks at the behaviour of the consumer and the choices of a competitive firm.

Learning outcomes

The Learning outcomes of this course are as follows:

- Students will learn the basic elements of consumption and production theories using various technical frameworks.
- This course provides them the behavioural foundations of market supply and demand.

Syllabus

UNIT I: Consumer behaviour (15 hours)

Preference and utility, Budget and choice, Income and substitution effect, Demand derivation, Labour supply, One-person welfare

UNIT II: Decision-making under uncertainty (15 hours)

Expected utility, Risk aversion, Insurance, Risk spreading

UNIT III: Producer behaviour and markets (15 hours)

Technology, Profit maximization, Cost minimization, Supply, Short and long run

Recommended readings

- Serrano, Roberto and Feldman, Alan (2012), *A short course in intermediate Microeconomics with Calculus*, Cambridge University Press
- Espinola-Arredondo, Ana and Muñoz-Garcia, Felix (2020), *Intermediate Microeconomic Theory*, MIT Press
- Osborne, M J and Rubinstein, A (2020), *Models in Microeconomic Theory*, Open Book Publishers
- Muñoz-Garcia, Felix (2017) *Practice Exercises for Advanced Microeconomic Theory*, MIT Press
- Dunaway, Eric; Strandholm, John C., Espinola-Arredondo, Ana and Munoz-Garcia, Felix (2020) *Practice Exercises for Intermediate Microeconomic Theory*, MIT press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -6 (DSC-6): Optimization Methods for Economic Analysis

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Optimization Methods for Economic Analysis – ECON023	4	3	1	0	Passed Class 12 th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- This course covers mathematical techniques used for comparative-static analysis and optimisation problems under various circumstances.
- The objective of this course is to transmit the body of basic mathematics that enables the study of economic theory.
- This course, in particular, includes rules of differentiation and its application in comparative-statistic analysis, unconstrained and constrained optimisation problems.

Learning outcomes

The Learning outcomes of this course are as follows:

- The students will be able to solve optimal solution and policy impacts using comparative- static analysis and statistic optimisation techniques.
- This offers the mathematical foundations necessary for further study of a variety of disciplines including postgraduate economics, statistics, computer science, finance and data analytic.
- The analytical tools introduced in this course will help them to apply optimization techniques used in business decision-making for managers, entrepreneurs and policy makers alike.

Syllabus

UNIT I: Comparative-Static Analysis (15 hours)

Derivatives, Slopes, Limit Theorem

UNIT II: Differentials and its role in Comparative static analysis (15 hours)

UNIT III: Optimisation Problems (15 hours)

Unconstrained and constrained optimisation with single and multiple variables, Lagrangian functions, quasi-concavity and convexity, envelope theorem

Recommended readings

- Chiang, A and Wainwright, K. (2005). Fundamental methods of mathematical economics. Boston, Mass. McGraw-Hill/Irwin.
- Sydsaeter, K., Hammond, P. (2002). *Mathematics for economic analysis*, Pearson Educational.
- Hoy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*, Prentice-Hall India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programmes with Economics as non-Major or Minor discipline

DISCIPLINE SPECIFIC CORE COURSE -3 (DSC-3): Intermediate Microeconomics I: Behavioural foundations of Market Interactions

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Intermediate Microeconomics I: Behavioural foundations of Market Interactions – ECON007	4	3	1	0	Passed Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is designed to formally analyze the behaviour of individual agents like consumers and producers under certain conditions.
- Mathematical tools are used to facilitate understanding of the basic concepts.
- This course looks at the behaviour of the consumer and the choices of a competitive firm.

Learning outcomes

The Learning outcomes of this course are as follows:

- Students will learn the basic elements of consumption and production theories using various technical frameworks.
- This course provides them the behavioural foundations of market supply and demand.

Syllabus

UNIT I: Consumer behaviour (15 hours)

Preference and utility, Budget and choice, Income and substitution effect, Demand derivation, Labour supply, One-person welfare

UNIT II: Decision-making under uncertainty (15 hours)

Expected utility, Risk aversion, Insurance, Risk spreading

UNIT III: Producer behaviour and markets (15 hours)

Technology, Profit maximization, Cost minimization, Supply, Short and long run

Recommended readings

- Serrano, Roberto and Feldman, Alan (2012), *A short course in intermediate Microeconomics with Calculus*, Cambridge University Press
- Espinola-Arredondo, Ana and Muñoz-Garcia, Felix (2020), *Intermediate Microeconomic Theory*, MIT Press
- Osborne, M J and Rubinstein, A (2020), *Models in Microeconomic Theory*, Open Book Publishers
- Muñoz-Garcia, Felix (2017) *Practice Exercises for Advanced Microeconomic Theory*, MIT Press
- Dunaway, Eric; Strandholm, John C., Espinola-Arredondo, Ana and Munoz-Garcia, Felix (2020) *Practice Exercises for Intermediate Microeconomic Theory*, MIT press

COMMON POOL OF DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSES for 3rd, 5th and 7th Semester

Discipline Specific Elective 1 (DSE-1): Economic History of India

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
III/V/VII	Economic History of India – ECON031	4	3	1	0	Passed Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- This course analyses the key aspects of Indian economic development from pre-colonial period to Independence of the country. This will cover the nature and characteristics of economy before colonial rule and its transition to the colonial regime.
- In doing so, it investigates the place of the Indian economy in the wider context of the regime changes, and the mechanisms that linked economic development in India to the compulsions of colonial rule.
- Key themes including the commercialization of agriculture, deindustrialisation hypothesis, mortality and famines and debates around the retreat of the Raj is discussed.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students develop and enhance critical analytical skills of Indian growth and development trajectories.
- It further exposes the students to understand the intricacies of India's economic, political and social developments in the past that may have relevance in the present times.
- It increases employability of students by enhancing their ability to deal with a variety of textual and statistical sources, appreciate their contexts, strengths and weaknesses, and draw upon them to construct a coherent argument.
- Besides strengthening the ability to pursue post-graduate studies these skills would be useful in a variety of careers in academics and business research, journalism as well as the government.

Syllabus

UNIT I: Economic changes from pre-colonial to colonial regimes - nature and characteristics; Colonialism and the Indian Economy (12 hours)

UNIT II: Population, Mortality and Famines (12 hours)

UNIT III: Agriculture, Industry and Railways (12 hours)

UNIT IV: The Economy and State in the Imperial Context: The Retreat of the Raj (09 hours)

Recommended readings

- Balachandran, Gopalan (2016), Colonial India and the World Economy. c. 1850- 1940, in L. Chaudhary, B. Gupta, T Roy and A. V. Swami (eds.), *A New Economic History of Colonial India*, Routledge, London and New York, Ch.6, pp. 84-99.
- Parthasarathy, P (2011), *Why Europe Grew Rich and Asia did not: Global Economic Divergence, 1600-1850*, CUP, Cambridge, Ch 2, 8.
- Bhattacharya, Sabyasachi (2005) 'Introduction' in the new edition of Kumar, Dharma (ed.) *Cambridge Economic History of India*. Vol 2. Orient Longman.
- Tirthankar Roy, 2011, *The Economic History of India 1857-1947*, 3rd edn, Oxford University Press, Delhi, Chapter 11 'Population and Labour'.
- Guha, Sumit (1991), Mortality decline in early 20th century India, *Indian Economic and Social History Review*, vol. 28, Issue 4, pp 371-87.
- Klein, Ira (1984), When Rains Fail: Famine relief and mortality in British India, *Indian Economic and Social History Review*, vol. 21, issue 2, pp. 185-214.
- Roy, Tirthankar 2011, *Agriculture, The Economic History of India 1857-1947*, 3rd Edn, Orient Longman, Delhi, Ch. 4, pp. 104-148.
- Gadgil, D R (1973) *The Industrial Evolution of India in Recent Times*. Chapters on Rural Credit.
- Behal, Rana P. (2010) 'Coolie Drivers or Benevolent Paternalists? British Tea Planters in Assam and Indenture Labour System in Assam', *Modern Asian Studies* 44, 1, 2010, pp. 29-51.
- Ray, Rajat K (ed.), 1994, *Introduction in Entrepreneurship and Industry in India*, OUP, Delhi, pp.1-69.
- Hurd, John (2005) Railways in Kumar, Dharma (ed)
- CEHI Vol II
- Morris, Morris, D (1965) *The Emergence of An Industrial Labour Force in India: A Study of the Bombay Cotton Mills 1854-1947*. OUP, Delhi, Concluding Chapter 11, pp.198-210.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Discipline Specific Elective 2 (DSE-2): Economics of Climate Change and Natural Resources

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
III/V/VII	Economics of Climate Change and Natural Resources– ECON032	4	3	1	0	Passed Class 12th	Introductory Microeconomics (ECON001)

Learning Objectives

The Learning Objectives of this course are as follows:

- The objective of this course is to provide knowledge on the principles of governing and managing natural resources.
- This course introduces the conceptual and theoretical foundations of Resource Economics. In particular, the efficiency concepts for evaluating natural resource use and policies and potential sources of inefficiency in the context of forestry, fisheries, and exhaustible energy resources will be studied.
- Further, the basics of Economics of Climate change, its implications and policies.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students get familiarise with basic issues of sustainable resources allocation and economics of climate change.
- It will familiarize students with the Cost-Benefit Analysis, Challenges in estimating costs and benefits of greenhouse gas policies, the Environmental Kuznets curve, and Mitigation of climate change.
- The course will familiarize students with Sustainable development Goals SDGs, History of Convention UNFCCC, India's Intended Nationally Determined Contribution.

Syllabus

UNIT I: Mathematical Prerequisites (12 hours)

Difference equations; differential equations; phase plane analysis; dynamic optimization

Optimal extraction of a non-renewable resource, Optimal management of renewable resources -Fishery and Forestry

UNIT II: Energy Economics, Energy Transition, and Energy Security (12 hours)

Introduction to Basics of supply, demand, and prices, income elasticities, the eco- nomics of depletable resources, world oil markets, Pathways of energy transition from conventional to renewable energy sources, Policy instruments, Energy security, accessibility and A definition, and Energy poverty

UNIT III: The Economics of Climate change, Implications, and Policies (12 hours)

Cost-Benefit Analysis, Challenges in estimating costs and benefits of greenhouse gas policies, Environmental Kuznets curve, Mitigation of climate change, Sectoral impact of Climate change, climate change, and inequality, Policy responses, and instruments

UNIT IV: Sustainable Development (09 hours)

Concepts and Measurement, Weak and strong sustainability, Sustainable development Goals SDGs, History of Convention UNFCCC, India's Intended Nationally Determined Contribution

Recommended readings

- Harris, J. M., Roach, B., & Environmental, J. M. H. (2007). *The economics of global climate change. Global Development and Environment* Institute Tufts University.
- Pelling, M. (2010). *Adaptation to climate change: from resilience to transformation*. Routledge.
- Callan, Scott, and Janet Thomas. *Environmental Economics and Management: Theory, Policy and Applications*. 4th ed. Florence, KY: South-Western, 2006, chapter 3. ISBN: 9780324320671.
- Barrett, S. (1990) *The problem of global environmental protection*, Oxford Review of Economic Policy 6(1): 68–79
- Stern, N.(2007) *The Economics of Climate Change: The Stern Review*, Cambridge University Press.
- Stern, D. I. (2004). *The rise and fall of the environmental Kuznets curve*. World Development, 32(8), 1419-1439.
- Babiker, Mustafa, John Reilly, and Henry Jacoby. "The Kyoto Protocol and Developing Countries." *Energy Policy* 28, no. 8 (2000): 525-36.
- IPCC Climate Change 2014: Mitigation of Climate Change (in the press); <http://mitigation2014.or draft>
- Arnell, N. W., Brown, S., Gosling, S. N., Gottschalk, P., Hinkel, J., Huntingford, C., ... & Zelazowski, P. (2016). *The impacts of climate change across the globe: a multi-sectoral assessment*. Climatic Change, 134(3), 457-474.
- Roberts, J. T. (2001). *Global inequality and climate change*. Society & Natural Resources, 14(6), 501-509.
- Geoffrey Heal (2012). "Reflections—Defining and Measuring Sustainability" *Review of Environmental Economics and Policy* Vol. 6, No. 1 (winter 2012), p. 147–163.
- The environment write, 2009. "Defining sustainability: weak sustainability".

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Discipline Specific Elective 4 (DSE-4): Fiscal Policy and Public Finance in India

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
III/V/VII	Fiscal Policy and Public Finance in India – ECON034	4	3	1	0	Class 12th	Intermediate Macroeconomics (ECON004)

Learning Objectives

The Learning Objectives of this course are as follows:

- Fiscal and Public Policy is the study of government policy and its role for achieving allocation and distribution objectives of the government.
- The course deals with the nature of public expenditures of the government on various social schemes; budgets, debt sustainability and fiscal management by governments; study of decentralization, theory of fiscal federalism, issues of equity and efficiency, designing equalization transfers, conditional and unconditional grants, fiscal federalism.
- The course analyses these concepts theoretically and also specifically looks at the Indian Final Examples.

Learning outcomes

The Learning Objectives of this course are as follows:

- The students would learn the needs and objectives of government expenditure on social schemes and critically evaluate them.
- The student will understand the new concepts of budgeting and analyze the fiscal and debt management policies of the government.
- They will also learn the vast mechanism of fiscal federalism in India and the role and contribution of Finance Commission in achieving equity and efficiency in resource allocation in multiple levels of government.

Syllabus

UNIT I: Income, Social Insurance and Redistribution (15 hours)

Redistribution and welfare policy, Universal Basic Income, Social Security, Health Insurance, Education, Pension Reforms

UNIT II: Public Expenditure and Fiscal Policy (15 hours)

Budget (Gender and Environment), Theories of Public Expenditure, Income and Employment Generation Policies, Public Debt; Sustainability and Debt Financing

UNIT III: Fiscal Federalism and Local Finance (15 hours)

Theory of Fiscal Federalism, Fiscal Federalism in India

Recommended readings

- Jonathan Gruber, (2011), Public Finance and Public Policy, 3rd edition, Worth Publishers. (Main Textbook)
- Hillman A. L., (2009), Public Finance and Public Policy: Responsibilities and Limitations of Government, 2nd edition, Cambridge University Press.
- Rosen, H. & Gayer, T. (2014). Public Finance (10th ed.). New York: McGraw-Hill.
- Rao, M. Govinda. “Central transfers to states in India: rewarding performance while ensuring equity.” Final report submitted to NITI Aayog (2017).
- Fifteenth Finance Commission Report 2021-26.
- Report Summary, 15th Finance Commission, PRS India.
- Latest Finance Commission Reports
- Latest Economic Survey and Budget Documents

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Discipline Specific Elective 5 (DSE-5): Digital Economics

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
III/V/VII	Digital Economics – ECON035	4	3	1	0	Passed Class 12th	Introductory Microeconomics (ECON001)

Learning Objectives

The Learning Objectives of this course are as follows:

- The analysis of the impact of information and communication technologies (ICTs) on economies and societies is a growing field.
- This course will cover the role of ICT on productivity, market structure, information and network effects, and its differential impact across groups and regions (digital divide).
- This theoretical and methodological stance has inspired a rather inter-disciplinary approach to the study of the digital economy.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students would be able to get an idea how the information technology is changing the life and livelihood of individuals and economy.

Syllabus

UNIT I: Functions of ICTs using productivity function approach and productivity (09 hours)

UNIT II: The transformation of management practices; work and employment; social networks, trust and social capital in the digital economy; cultural and motivational aspects (09 hours)

UNIT III: ICTs, competition, intellectual property right and market (09 hours)

UNIT IV: ICTs and the political economy of inequality etc. (09 hours)

UNIT V: Automation and Jobs (06 hours)

UNIT VI: Digital India (03 hours)

Recommended readings

- Goldfarb, A., & Tucker, C. (2019). Digital economics. *Journal of Economic Literature*, 57(1), 3-43.
- Goldfarb, A., Greenstein, S. M., & Tucker, C. E. (Eds.). (2015). *Economic analysis of the digital economy*. University of Chicago Press.
- Acemoglu, D., & Restrepo, P. (2018). Artificial intelligence, automation, and work. In *The economics of artificial intelligence: An agenda* (pp. 197-236). University of Chicago Press.
- Varian, H. R. (2001). *Economics of information technology*. University of California, Berkeley.
- Maiti, D., Castellacci, F., & Melchior, A. (2020). Digitalisation and development: issues for India and beyond. In *Digitalisation and Development* (pp. 3-29). Springer, Singapore.
- Greenstein, S (2020) The Economics of Internet Infrastructure, <https://www.aeaweb.org/articles?i>

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