UNIVERSITY OF DELHI

# N O T I F I C A T I O N

Sub:  Amendment to Ordinance V

[E.C Resolution No. 60/ (60-1-3) dated 03.02.2023]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

**Add the following:**

**Syllabi of Semester-III of the following departments under Faculty of Social Sciences based on Under Graduate Curriculum Framework -2022 implemented from the Academic Year 2022-23.**

**FACULTY OF SOCIAL SCIENCES**

**DEPARTMENT OF ECONOMICS**

**BA. (HONS.) ECONOMICS**

## DISCIPLINE SPECIFIC CORE COURSE -7 (DSC-7):  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.**

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> ### DISCIPLINE SPECIFIC CORE COURSE -8 (DSC-8): Intermediate Macroeconomics I: Foundations of Aggregate Income Determination

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| Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | **Lecture** | **Tutorial** | **Practical/ Practice** | | |
| **Intermediate Macroeconomics I: Foundations of Aggregate Income Determination – ECON008** | 4 | 3 | 1 | 0 | Class 12th Pass | NIL |

## Learning Objectives

The Learning Objectives of this course are as follows:
- This course builds upon the basic concepts of macroeconomics. It introduces labour markets and the aggregate supply (AS) curve.
- Aggregate Demand (AD) and Aggregate Supply (AS) are brought together to determine equilibrium prices and output examine the policy impacts.
- The course discusses Phillips curve and the alleged trade-off between inflation and unemployment. Both adaptive and rational expectations are introduced.
- A flavour of micro-foundations is introduced with respect to consumption and investment.

## Learning outcomes

The Learning outcomes of this course are as follows:

- This course enables students to analyse the interaction of aggregate demand and supply and the effects of fiscal and monetary policy, trade-off between inflation and unemployment, and consumption and investment behaviour of the households.

## Syllabus

**UNIT I**: Short-run and medium-run equilibrium (15 hours)
The labour market, Wage determination; wages, prices, and unemployment; natural rate of unemployment; from employment to output, Derivation of aggregate supply curve, Interaction of aggregate demand and supply to determine equilibrium output, price level and employment.

**UNIT II**: Philips Curve and Theory of Expectations (15 hours)
Inflation, unemployment and expectations, Phillips Curve; adaptive and rational expectations; policy ineffectiveness debate.

**UNIT III**: Microeconomic foundations of macroeconomic behaviours (15 hours)
Consumption: Keynesian consumption function; Fisher's theory of optimal intertemporal choice; life-cycle and permanent income hypotheses; other theories of consumption expenditure.
Investment: determinants of business fixed investment; residential investment and inventory investment.

**Recommended readings**
- Blanchard, O. (2006). *Macroeconomics*, 4th ed. Pearson Education.
- C.L.F. Attfield, D. Demery and N.W. Duck (1991). *Rational Expectations in Macroeconomics: an introduction to theory and evidence* 2nd Ed.
- Sheffrin, Steve (1996). *Rational Expectations*. 2nd ed., Cambridge University Press.
- Dornbusch, R., Fischer, S. (1994). *Macroeconomics*, 6th ed., McGraw-Hill.
- Branson, W. (2013). *Macroeconomics: Theory and policy*, 3rd ed, East West Press.
- Carlin, W and D Soskice (2007), *Macroeconomics: Imperfections, Institutions and Policies*, Indian Edition, OUP.

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

## DISCIPLINE SPECIFIC CORE COURSE -9 (DSC-9): Advanced Mathematical Methods for Economics

| Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | **Lecture** | **Tutorial** | **Practical/ Practice** | | |
| Advanced Mathematical Methods for Economics – ECON009 | 4 | 3 | 1 | 0 | Passed Class 12th with Mathematics | NIL |

## Learning Objectives

This is the last of a compulsory three-course sequence. The Learning Objectives of this course are as follows:
- To transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus.

- In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general.

## Learning outcomes

The Learning outcomes of this course are as follows:
- The course builds the skills for mathematical foundations necessary required further study of a variety of disciplines including postgraduate economics, statistics, computer science, finance and data analytics.
- The analytical tools introduced in this course have applications wherever optimization techniques especially constrained optimization are used in business decision-making for managers and entrepreneurs alike.
- These tools are necessary for anyone seeking employment as an analyst in the corporate world.

## Syllabus

**UNIT I**: Multivariate Optimization with constraints (15 hours)
Constrained optimisation with equality and inequality constraints: geometric characterisation, Lagrange characterisation using calculus and applications; properties of value function: envelope theorem, applications.

**UNIT II**: Linear programming (15 hours)
Introduction, graphical solution, matrix formulation, duality, economic interpretation.

**UNIT III**: Integration, differential equations, and difference equations (15 hours)
Definite integrals, indefinite integrals and economic applications; first order and second order difference equations, equilibrium and its stability; first order differential equations, phase diagrams and stability; second order differential equations.

**Recommended readings**
- 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 II

## B.A. Programmes with Economics as Major discipline

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

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| 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 12th | 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

## 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 Eco- nomic 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".

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

## 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

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

## 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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**GENERIC ELECTIVES (GE-1): PRINCIPLES OF MICROECONOMICS I**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Semester | Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| I/III/V/VII | Principles of Microeconomics I ECON025 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

## Learning Objectives

The Learning Objectives of this course are as follows:
- This course discusses the basic principles in Microeconomics and their applications. It includes consumer's problem, demand estimation, production function, cost functions and market analysis. It illustrates how the concepts of microeconomics can be applied to analyze real-life economic situations.

## Learning outcomes

The Learning Outcomes of this course are as follows:
- The students learn some basic principles of microeconomics of consumer and producers, and interactions of supply and demand, characteristics of perfect competition, efficiency and welfare outcomes.

## SYLLABUS OF GE-1

**UNIT – I:** Introduction (12 hours)
Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems. Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand,

law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, market equilibrium. Applications of demand and supply: price rationing, price floors, consumer sur- plus, producer surplus. Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other elasticities

**UNIT – II:** Consumer Theory (12 hours)
Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint

**UNIT – III:** Production and Costs (12 hours)
Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibrium condition
Costs: costs in the short run, costs in the long run, revenue and profit maximization, minimizing losses, short run industry supply curve, economies and dis- economies of scale, long run adjustments

**UNIT – IV:** Perfect Competition (09 hours)
Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the firm in the short run and long run; Long run industry supply curve: increasing, decreasing and constant cost industries.
Welfare: allocative efficiency under perfect competition.

**Practical component (if any) - NIL**

**Essential/recommended readings**

– Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
– Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
– Bernheim, B., Whinston, M. (2009). *Microeconomics*. Tata McGraw-Hill.

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

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Semester | Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| I/III/V/VII | **Basic Development Economics ECON029** | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

### Learning Objectives

The Learning Objectives of this course are as follows:
- This course exposes students to some of the key ideas and concepts in the areas of economic growth, human development and globalisation building on the concept of growth and further links it up with alternative conceptions of development.

### Learning outcomes

The Learning Outcomes of this course are as follows:
- Students will develop a critical understanding of the contemporary issues in economic growth and development and their paths. Students will thus be better prepared to face the professional world and can use this knowledge base in a variety of jobs, including in the corporate, civil service and NGO sectors.

### SYLLABUS OF GE-2

**UNIT – I:** Development and underdevelopment (12 hours)
Growth vs Development; Classic Approaches of Development; Contemporary theories of Development and Underdevelopment

**UNIT – II:** Development goals and indicators, measures of underdevelopment
Various concepts and measures of poverty and inequality, poverty lines using various national and international criteria. (12 hours)

**UNIT – III:** Capabilities, human development and sustainable development (12 hours)

**UNIT – IV:** Globalisation and development (09 hours)

**Practical component (if any) - NIL**

**Essential/recommended readings**

- Debraj Ray, *Development Economics*, (DE), Princeton University Press, 1998.

- Robinson, J. A., & Acemoglu, D. (2012). *Why nations fail: The origins of power, prosperity and poverty* (pp. 45-47). London: Profile.

- Abhijit Banerjee, Roland Benabou and Dilip Mookerjee (eds), *Understanding Poverty* (UP), Oxford University Press, 2006.

- Angus Deaton, *The Great Escape: Health, Wealth and the Origins of Inequality*, Princeton University Press, 2013.

- Gustav Ranis et.al, Economic Growth and Human Development, *World Development* Vol. 28, No. 2, Elsevier Science Ltd., 2000

- Amartya Sen, *Development as Freedom*, OUP, 2000

- Thomas Piketty and Emmanuel Saez, 'Inequality in the Long Run', Science, 344 (838), 2014

- Piketty, Thomas, 2019, *Capital and Ideology*, Harvard University Press,

- Séverine Deneulin with Lila Shahani (ed.), *An Introduction to the Human Development and Capability Approach: Freedom and Agency*, Roultedge, 2009

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

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### GENERIC ELECTIVES (GE-3): ESSENTIALS OF ECONOMICS

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Semester | Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| I/III/V/VII | **Essentials of Economics ECON076** | 4 | 3 | 1 | 0 | Class XII pass | NIL |

**Learning Objectives**

The Learning Objectives of this course are as follows:

- This course will introduce the fundamental concepts of economics, the study of how people manage resources. It contains basic principles of microeconomics (the behaviour of consumers, firms and companies), macroeconomics (national production, employment, inflation and interest rates) and international economics (balance of payment, exchange rate and trade) with graphical illustration and contemporary examples.

## Learning outcomes

The Learning Outcomes of this course are as follows:
- By studying this course, the students will learn to think like an economist and understand how a modern market economy function. They will learn about the factors that determine long-run growth and short-term fluctuations and role of government and financial institutions, so they can better understand how economics applies to the everyday life.

## SYLLABUS OF GE-3

**UNIT – I:** Microeconomic Foundations (15 hours)
Foundations of economics, how market works, firms and market structures, markets for factor of production, role of government

**UNIT – II:** Macroeconomic Foundations (15 hours)
GDP (measuring total production, income and economic growth), unemployment and inflation; aggregate demand and aggregate supply analysis; monetary and fiscal policies

**UNIT – III:** Foundation of International Economics (15 hours)
Comparative advantage and the gains from trade, macroeconomics in an open economy

**Practical component (if any) - NIL**

**Essential/recommended readings**

– Hubbard, G., Garnett, A., & Lewis, P. (2019). Essentials of economics. 5th edition, Pearson Higher Education AU.

– Sloman, J., & Garratt, D. (2016). Essentials of Economics, 7th edition, Pearson

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| Semester | Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| III/V/VII | Theory of Public Finance – ECON061 | 4 | 3 | 1 | 0 | Passed Class 12th | ECON001/ECON025 |

## Learning Objectives

The Learning Objectives of this course are as follows:
- This course will look into the efficiency and equity aspect of market mechanism of allocating resources and also the design and implications of public sector policies including taxation and monetary policies.
- It will deal with efficiency, equity, public goods, externalities, taxation, subsidies, fiscal multiplier, money supply, interest rate and their interlinkages.

## Learning outcomes

The Learning Outcomes of this course are as follows:
- This course aims to develop the broad conceptual frameworks which will enable students to learn economic issues efficiency, equity, public goods, externalities, taxation, subsidies, fiscal multiplier, money supply, interest rate and their interlinkages.
- It will also  allow them to critically evaluate various micro and macro aspects of government policies and their effects on output, distribution, and welfare in the economy.
- The course will be useful for students aiming towards careers in the government sector, policy analysis, business and journalism.

## Syllabus

UNIT I: Theories of Public Sector and Market Mechanism (12 hours)
Overview of Fiscal Functions; Tools of Normative Analysis; Pareto Efficiency; General Equilibrium Framework; Equity and the Social Welfare

UNIT II: Market Failure (12 hours)
Sources of Market failures; Public Goods; and Externalities.

UNIT III: Theories of Taxation (09 hours)
Product and Factor tax; Tax Burden; Tax Distortions; Tax Design

UNIT IV: Working of Fiscal and Monetary Policies (12 hours)
Fiscal policy; Banking system and creation of Money; Monetary Instruments and Policies; Fiscal and Monetary Management in Indian Context.

## Recommended readings

- R.A. Musgrave and P.B. Musgrave , *Public Finance in Theory and Practice*, 5th Edition.
- Rosen, H. & Gayer, T. (2014). *Public finance* (10th ed.). New York: McGraw-Hill.
- Stiglitz,  J E & Rosengard J K (2015), *Economics of the Public Sector*, 4th  ed, W.W. Norton.
- Jonathan Gruber, (2011), Public Finance and Public Policy, 3rd edition, Worth Publishers. (Main

Textbook)
- Cullis, J., Jones, P. (1998). Public finance and public choice, 2nd ed. Oxford University Press.
- Hindriks, J., Myles, G. (2013). Intermediate public economics, 2nd ed. MIT Press.
- A. Bagchi (ed.): Readings in public finance. Oxford University Press.
- Stiglitz, J. (2009). Economics of the public sector, 3rd ed. W. W. Norton.

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# Generic Elective (GE-8):   Money and Banking

| Semester | Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| III/V/VII | **Money and Banking – ECON062** | **4** | **3** | **1** | **0** | **Class 12th Pass** | **NIL** |

## Learning Objectives

The Learning Objectives of this course are as follows:
- This course exposes students to the theory and functioning of the monetary and financial sectors of the economy.
- It highlights the organization, structure, and role of financial markets and institutions. It also discusses interest rates, monetary management, and instruments of monetary control.
- Financial and banking sector reforms and monetary policy with special reference to India are also covered.

## Learning outcomes

The Learning Outcomes of this course are as follows:
This allows students to understand current monetary policies and financial market out- comes. It also enables them to critically evaluate policies.

## Syllabus

**UNIT I**: Money (12 hours)
Understanding concept and functions of money, Measurement of money supply, Analytics and Methodology of computation of money supply, Theories of money supply determination

**UNIT II**: Financial markets: an Introduction (12 hours)
Role of financial markets and institutions; Problems of Asymmetric information, Financial Crises; Financial derivatives: Futures, Options and Swaps; Financial markets and Institutions in India: Organization, Structure and Reforms in India

**UNIT III**: Interest Rates (09 hours)
Determination of interest rates; Sources of interest rates differentials and risk; Theories of term structure of interest rates; Interest rates in India

**UNIT IV**: Central Banking and Monetary policy (12 hours)
Central Bank: Functions and Balance Sheet

Monetary Policy: Targets and instruments, Monetary management in an open economy
Monetary Policy Framework in India: Evolution and current scenario, critical evaluation
Digital currency: implications and emerging issues in Indian economy

**Recommended readings**
- F J Fabozzi et al: Foundations of Financial Markets and Institutions, Pearson
- F S Mishkin , S G Eakins, T Jayakumar, R K Pattnaik : Financial Markets and Institutions Pearson
- N Jadhav: Monetary Policy, Financial stability and Central Banking in India Macmilla
- M.R. Baye and D.W. Jansen Money, Banking and Financial Markets AITBS, 1996
- Report of the Working Group: Money Supply Analytics and Methodology of Compilation, 1998 Annual Report; Master Circular - Prudential Norms on Capital Adequacy - Basel I Framework - 2011; RBI Bulletin; Report of Currency and Finance (latest).
- Dua, P., "Monetary Policy Framework in India", Indian Economic Review, Vol. 55, Issue 1, June 2020
- Ghate, C., & Kletzer, K. M. (Eds.). (2016). Monetary policy in India: A modern macroeconomic perspective. Springer.
- Various publications of RBI and other agencies / institutions

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## Generic Elective (GE-9):  Digitalisation and Development

| Semester | Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| III/V/VII | **Digitalisation and Development – ECON063** | 4 | 3 | 1 | 0 | Class 12th Pass | NIL |

### 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. Technology is an enabling factor. Technological developments become relevant to the extent that they are economically and socially meaningful.
- This course aims to offers an overview of the understanding of economics of digitalisation and its impact on the life and livelihood with an interdisciplinary approach.

### Learning outcomes

The Learning Outcomes of this course are as follows:
The students would understand the functions information technology and its socio- economic impact, wellbeing and progress on the contemporary world.

### Syllabus

**UNIT I**: Digital development - India and the World (09 hours)

**UNIT II**: The transformation of management practices; work and employment; social net- works, trust and social capital in the digital economy; cultural and motivational aspects (12 hours)

**UNIT III**: Unit ICTs, Digital Divide and the political economy of inequality (12 hours)

**UNIT IV**: Access to ICT and poverty and wellbeing, work-life balance (12 hours)

**Recommended readings**
- Goldfarb, A., Gans, J.,& Agrawal, A. (2019). The Economics of Artificial Intelligence: An Agenda. University of Chicago Press.
- Agrawal, A., Gans, J., & Goldfarb, A. (2018). Prediction machines: the simple economics of artificial intelligence. Harvard Business Press.
- 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.
- Maiti, D., & Awasthi, A. (2020). ICT exposure and the level of wellbeing and progress: A cross country analysis. Social Indicators Research, 147(1), 311-343.
- 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.
- Acemoglu, D., & Restrepo, P. (2018). The race between man and machine: Im- plications of technology for growth, factor shares, and employment. American Economic Review, 108(6), 1488-1542.
- 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.
- Singh, N. (2016). Information technology and its role in India's economic development: A review. Development in India, 283-312.
- Castellacci, F., & Tveito, V. (2016). The Effects of ICTs on Well-being: A Survey and a Theoretical Framework (No. 20161004). Centre for Technology, Innovation and Culture, University of Oslo.
- Huyer, S., & Mitter, S. (2003). ICTs, globalisation and poverty reduction: Gender dimensions of the knowledge society. Kampala (Uganda): http://gab. wigsat. org/policy. htm.

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

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## Generic Elective (GE-10): Introduction to Comparative Economic Development

| Semester | Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| III/V/VII | **Introduction to Comparative Economic Development – ECON064** | **4** | **3** | **1** | **0** | **Class 12th Pass** | **NIL** |

### Learning Objectives

The Learning Objectives of this course are as follows:
- This course investigates selected issues in industrialization and development in comparative historical perspective.

- The course focuses on a set of countries which followed diverse trajectories and patterns of growth to achieve their industrial transition and compares the outcomes of these diverse trajectories on sectoral change, intersectoral relations, labour processes and industrial relations and compares the role of the state in facilitating the respective trajectories.

## Learning outcomes

The Learning Outcomes of this course are as follows:
- The students will be able to visualise economic development in a historical perspective and assimilate material from diverse narratives.
- It will help them to understand the diverse paths of economic development in the advanced economies.

## Syllabus

UNIT I: Introduction (09 hours)
Theoretical issues and comparative historical background.

UNIT II: Agricultural transformation and its role in industrialization (09 hours)
Agrarian and land relations, production and productivity, agrarian surplus in industrial development. Case studies: Britain, Japan and U.S.S.R.

UNIT III: The industrialization process of Britain, Japan and U.S.S.R. (09 hours)

UNIT IV: The factory system and making of the industrial working class. Case studies: Britain and Japan (09 hours)

UNIT V: The role of the state in industrial and developmental transitions. Case studies: Britain, Japan and U.S.S.R. (09 hours)

## Recommended readings
- Davies, R. (1998). Soviet economic development from Lenin to Khrushchev. Cam- bridge University Press.
- Dobb, M. (1966). Soviet economic development since 1917. Routledge.
- Hughes, J., Cain, L. (1994). American economic history, 4th ed. Harper Collins College Publishers.
- Hayami, Y. (1975). A century of agricultural growth in pre-war Japan: Its relevance to Asian development. University of Minnesota Press.
- Hobsbawm, E. (1968). Industry and empire: An economic history of Britain since 1750. Weidenfeld & Nicholson.
- Hobsbawm, E. (1984). Worlds of labour: Further studies in the history of labour. Weidenfeld & Nicolson.
- Johnson, C. (1982). MITI and the Japanese miracle: The growth of industrial policy 1925-1975. Stanford University Press.
- Macpherson, W. (1995). The economic development of Japan 1868-1941. Cam- bridge University Press.
- Norman, E. (2007). Japan's emergence as a modern state: Political and economic problems of the Meiji period. University of British Columbia Press.
- Okochi, K., Karsh, B., Levine, S. (1974). Workers and employees in Japan: The Japanese employment relations system. Princeton University Press.
- Paul, G., Robert, C. (1990). Soviet economic structure and performance, 3rd ed. Harper and Row.
- Tauger, M. (2004). Soviet peasants and collectivization 1930-39: resistance and adaptation. Journal of Peasant Studies, 31: 3-4. 427-456.
- Angus Maddison (2001). The World Economy, Vol. 1: A Millennial Perspective. OECD.

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

# Generic Elective (GE-11): Education and Development

| Semester | Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| III/V/VII | **Education and Development – ECON065** | **4** | **3** | **1** | **0** | **Class 12thPass** | **NIL** |

## Learning Objectives

The Learning Objectives of this course are as follows:
This course discusses the role of education in development and policy analysis and formulation in the context of development; the impact of the globalisation on, and the role of international agencies in, education for development; human capital theory and human resource development; education and aid; research and consultancy strategies and ethics. he emphasis in this course is laid on understanding the theoretical aspects of education and linking it with the issues of education in a developing country like India.

## Learning outcomes

The Learning Outcomes of this course are as follows:
This course will develop skills amongst the students to role of education and strategies to expand education in highly unequal societies. This will further help to conduct research and analysis the role of institutions for the outcome of education.

## Syllabus

UNIT I: Introduction (08 hours)
Defining the educational problem

UNIT II: Human capital theory (08 hours)
The basic economic perspective on education

UNIT III: Early childhood education: How important? When did earnings become so dependent on education? Do our regression estimates overestimate the impact of education on earnings? The case of ability bias. (08 hours)

UNIT IV: Education as a signal of skill (08 hours)
If the return to education is real, does it reflect skills learned or is it a signal? Why has the rate of return to education increased? What skills are now rewarded in the workplace?

UNIT V: Schooling and Achievement (08 hours)
Do smaller classes raise achievement? School vouchers and parental choice; School accountability, standards and testing; Teacher quality and teacher training; Can technology complement what teachers do?

UNIT VI: Higher Education (05 hours)
Basic issues and structure; Higher education policy

## Recommended readings
- Borjas, George. Labor Economics. Boston, MA: McGraw-Hill, 2005
- Lovenheim, M., & Turner, S. E. (2017). Economics of education. Macmillan Higher Education.
- Feinstein, Leon. "Inequality in the Early Cognitive Development of British Children in the 1970 Cohort." Economica 70, no. 277 (2003): 73-97.

- Duflo, Esther. "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment." American Economic Review 91, no. 4 (2001): 795-800.
- Levy, Frank, and Richard J. Murnane. "Computers, Offshoring, and Skills." Working Paper. September 18, 2005..
- Hanushek, E. A., Machin, S. J., & Woessmann, L. (Eds.). (2016). Handbook of the economics of education. Elsevier.
- Bradley, S., & Green, C. (Eds.). (2020). The Economics of Education: A Com- prehensive Overview.
- Hanushek, Eric A., 2005, Economic Outcomes and School Quality, International Academy of Education and International Institute for Educational Planning.
- Goldin, C., & Katz, L. F. (2010). The race between education and technology. harvard university press.
- Haveman, R., & Smeeding, T. (2006). The role of higher education in social mobility. The Future of children, 125-150.
- Singh, A., Park, A., & Dercon, S. (2014). School meals as a safety net: an evaluation of the midday meal scheme in India. Economic Development and Cultural Change, 62(2), 275-306.
- Krueger, Alan B. "Experimental Estimates of Education Production Functions." Quarterly Journal of Economics 114, no. 2 (1999): 497-532.
- Loeb, Susanna, and Marianne E. Page. "Final Examinationining the Link between Teacher Wages and Student Outcomes: The Importance of Alternative Labor Market Opportunities and Non-pecuniary Variation." Review of Economics and Statis- tics 82, no. 3 (2000): 393-408.
- Winston, Gordon. "Subsidies, Hierarchy and Peers: The Awkward Economics of Higher Education." Journal of Economic Perspectives 13, no. 1 (1999): 13-36.
- Azam, M., & Kingdon, G. G. (2015). Assessing teacher quality in India. Journal of Development Economics, 117, 74-83.

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# Generic Elective (GE-12): Basic Resource and Energy Economics

| Semester | Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| III/V/VII | **Basic Resource and Energy Economics – ECON066** | **4** | **3** | **2** | **0** | **Passed Class 12th with Mathematics** | **ECON001/E CON025** |

## Learning Objectives

The Learning Objectives of this course are as follows:
This course will introduce the basics of Resource and Energy economics. The objective of this course is to provide theoretical and empirical topics on Resource economics, energy economics, energy transition, and energy security. This course introduces the conceptual and theoretical foundations of Resource Economics. In particular, the policies and potential sources are both renewable and non-renewable. The objective of this course is to provide knowledge on the principles of governing and managing natural resources.

## Learning outcomes

The Learning outcomes of this course are as follows:
The students will learn some issues of resource economics relating to the basics of supply, demand, and prices, income elasticities, world oil markets, and depletable resources, pathways of energy transition from conventional to renewable energy sources.

## Syllabus

UNIT I: Resource Economics (Renewable and non-renewable sources) (15 hours)
Optimal extraction of a non-renewable resource, Optimal management of renewable resources -Fishery and Forestry, Tom Tietenberg and Lynne Lewis, Environment and Natural Resource Economics, 9th edition, Chapter 5,6,12 and 13

UNIT II: Energy Economics (15 hours)
Types of energy sources, Introduction to Basics of supply, demand, and prices, energy supply and economics of depletable resources, world oil markets

UNIT III: Energy transition and energy security Pathways of energy transition from conventional to renewable energy sources, Policy instruments, Energy security, accessibility and 4 A definition, and Energy poverty (15 hours)

## Recommended readings

- Tom Tietenberg and Lynne Lewis, Environment and Natural Resource Economics, 9th edition
- Review of the Basics of Supply, Demand and Price Formation in Competitive Markets Pindyck and Rubinfeld. 2005
- Fouquet, R. Historical energy transitions: speed, prices and system transformation. Energy Res. Soc. Sci. 22, 7–12 (2016).
- McGowan, J., and S. Conners. "Windpower: A Turn of the Century Review." Annual Review of Energy and the Environment 25 (2000): 147-197.
- Chen, B., Xiong, R., Li, H., Sun, Q., & Yang, J. (2019). Pathways for sustainable energy transition. Journal of Cleaner Production, 228, 1564-1571.

- Palmer, K., and D. Bullaw. "Cost-Effectiveness of Renewable Electricity Policies." Energy Economics 27 (2005): 873-894
- Deffeyes, K. Hubbert's Peak: The Impending World of Oil Shortage. Princeton, NJ: Princeton University Press, 2001, chapter 1. ISBN: 0691116253.
- Lynch M. "The Pessimism About Petroleum Resources: Debunking the Hubbert Model (and Hubbert Modelers)." Minerals and Energy - Raw Materials Report 18, no. 1 (2003): 1-18.
- Watkins, G. "Oil Scarcity: What Have the Past Three Decades Revealed?" Energy Policy 34 (2006): 508-514.
- Cherp, A., & Jewell, J. (2014). The concept of energy security: Beyond the four As. Energy policy, 75, 415-421.
- Carley, S., & Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. Nature Energy, 5(8), 569-577.

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

## Generic Elective (GE-13): Principles of Microeconomics II

| Semester | Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|---|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| III/V/VII | Principles of Microeconomics II – ECON027 | 4 | 3 | 1 | 0 | Passed Class 12th with Mathematics | Introductory Microeconomics (ECON001) Principles of Microeconomics I (ECON025) |

### Learning Objectives

The Learning Objectives of this course are as follows:
- This course covers imperfect markets and equilibrium analysis, consumer and producer theories under various markets and its failure, and international trade.

### Learning outcomes

The Learning outcomes of this course are as follows:
- This course helps the students to understand different forms of market imperfections and market failures observed in real life situations.
- The students learn about the environment where the standard market mechanism fails to generate the desirable outcomes.
- They develop a sense of how the production is distributed among the different factors of production and the demand for inputs.
- Some preliminary concepts of international trade are also covered in this course.

### Syllabus

UNIT I: Market Structures (12 hours)
*Theory of a Monopoly Firm*: Concept of imperfect competition; short run and long run price and output decisions of a monopoly firm; concept of a supply curve under monopoly; comparison of perfect competition and monopoly, social cost of monopoly, price discrimination; remedies for monopoly: Antitrust laws, natural monopoly
*Imperfect Competition*: Monopolistic competition: Assumptions, SR and LR price and output

determinations under monopolistic competition, economic efficiency and resource allocation; oligopoly: assumptions, oligopoly models, game theory, contestable markets, role of government

**UNIT II**: Consumer and Producer Theory (12 hours)
*Consumer and Producer Theory in Action*: Externalities, marginal cost pricing, internalising externalities, public goods; imperfect information: adverse selection, moral hazard, social choice, government inefficiency.
*Markets and Market Failure*: Market adjustment to changes in demand, efficiency of perfect competition; sources of market failure: imperfect markets, public goods, externalities, imperfect information; evaluating the market mechanism.

**UNIT III**: Income Distribution and Factor pricing (12 hours)
Input markets: demand for inputs; labour markets, land markets, profit maximisation condition in input markets, input demand curves, distribution of Income.

**UNIT IV**: International Trade (09 hours)
Absolute advantage, comparative advantage, terms of trade, sources of comparative advantage, trade barriers, free trade/ protectionism.

**Recommended readings**
- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Bernheim, B., Whinston, M. (2009). *Microeconomics*. Tata McGraw-Hill.

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