



DETAILED SYLLABUS
for
M.A. in Economics Programme
Offered by the Patliputra School of Economics
[Degree awarded by Aryabhatta Knowledge University]



To be Implemented from Academic Session 2021-2022

Course Structure for M.A. in Economics Programme Under the CBCS Offered by the Patliputra School of Economics				
Semester	Course Type	Course Title	Course Code	Credit
FIRST SEMESTER	Core	Microeconomics I	ECPG1CC01	5
		Macroeconomics I	ECPG1CC02	5
		Mathematical Methods in Economics	ECPG1CC03	5
		Statistics and Introductory Econometrics	ECPG1CC04	5
		Development Economics	ECPG1CC05	5
	Skill-Based (Optional)	One from SWAYAM / MOOCS		0 (Non-credit)
SECOND SEMESTER	Core	Microeconomics II	ECPG2CC06	5
		Macroeconomics II	ECPG2CC07	5
		Econometric Methods	ECPG2CC08	5
	Elective	Elective 1		5
		Elective 2		5
	Skill-Based (Optional)	One from SWAYAM / MOOCS		0 (Non-credit)
THIRD SEMESTER	Core	International Trade Theories and Policy	ECPG3CC09	5
		Indian Economic Development	ECPG3CC10	5
		Software Applications of Econometrics	ECPG3CC11	5
	Elective	Elective 3		5
		Elective 4		5
FOURTH SEMESTER	Core	Environmental Economics	ECPG4CC12	5
		Public Economics	ECPG4CC13	5
		Field Survey and Report Writing	ECPG4CC14	5
	Elective	Elective 5		5
		Elective 6		5
Notes: (i) Elective courses would be offered depending upon the availability of specialized faculties; (ii) Courses to be offered as elective papers in a particular semester would be announced before its commencement; and (iii) An Elective course shall be offered if there are at least 10 students registered for it.				

Basket of Elective Courses for M.A. in Economics Programme Offered by the Patliputra School of Economics			
<i>Semester</i>	<i>Course Title</i>	<i>Course Code</i>	<i>Credit</i>
SECOND SEMESTER	Financial Economics	ECPG2EC01	5
	Industrial Organisation	ECPG2EC02	5
	Monetary Economics	ECPG2EC03	5
	Health Economics	ECPG2EC04	5
	Labour Economics	ECPG2EC05	5
	History of Economic Ideas	ECPG2EC06	5
THIRD SEMESTER	Corporate Finance and Financial Institutions	ECPG3EC07	5
	Advanced Econometrics	ECPG3EC08	5
	Behavioural Economics	ECPG3EC09	5
	Urban Economics	ECPG3EC10	5
	Agricultural Economics I	ECPG3EC11	5
	Law and Economics	ECPG3EC12	5
FOURTH SEMESTER	International Finance	ECPG4EC13	5
	Advanced International Trade	ECPG4EC14	5
	Resource Economics	ECPG4EC15	5
	Human Development	ECPG4EC16	5
	Agricultural Economics II	ECPG4EC17	5
	Bihar Economy	ECPG4EC18	5

Basket of Open Elective Courses Offered by the Patliputra School of Economics			
<i>Semester</i>	<i>Course Title</i>	<i>Course Code</i>	<i>Credit</i>
SECOND	Health Economics	ECPG2OE01	5
	History of Economic Ideas	ECPG3OE02	5
THIRD	Indian Economic Development	ECPG2OE03	5
FOURTH	Human Development	ECPG4OE04	5
	Bihar Economy	ECPG4OE05	5
Note: The course contents for above courses are same as those for the M.A. in Economics courses.			

CORE COURSES

Course Title:	Microeconomics I	Course Code:	ECPG1CC01
Semester:	1 st	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Consumer Theory: Axiomatic foundation of utility analysis; Comparative static results; Duality approach; Indirect utility function; expenditure function; Consumer surplus; Equivalent and compensating variations; Revealed preference (weak and strong axioms); Consumer choice under uncertainty; Neumann-Morgenstern utility functions; Risk aversion and measures of risk aversion.	1-16	
2	Producer Theory: Technology; Profit maximisation of a competitive firm; Cost minimisation; Envelope theorem for constrained optimization; Duality in production.	17-24	
3	Competitive Markets and Monopoly: Partial equilibrium competitive analysis; Stability and comparative statics; Free entry and long-run competitive equilibria; Natural monopoly; Single product monopoly; The discriminating monopolist; Durable goods monopoly and Coase conjecture; Monopolistic competition.	25-34	
4	General Equilibrium: Walrasian equilibrium; Existence, uniqueness and stability of competitive equilibrium; Core of an exchange economy.	35-44	
5	Welfare Economics: Conditions of Pareto optimality under exchange with production; The two welfare theorems; Compensation criteria; Social welfare function and Arrow impossibility theorem.	45-60	

References:

- (1) Mass-Colell, A., M. Whinston and J. Green, *Microeconomic Theory*, Oxford University Press, New Delhi, 1995.
- (2) Gravelle H. and R. Reese, *Microeconomics*, Pearson Education, 3rd Edition, 2004.
- (3) Jehle G A and Reny P J, *Advanced Microeconomic Theory*, 3rd Edition, Prentice Hall, 2011.
- (4) Varian, H R, *Microeconomic Analysis*, W.W. Norton and Company, USA, 1992.
- (5) Feldman, Allan and Roberto Serrano, *Welfare Economics and Social Choice Theory*, Springer, 2006.
- (6) Wulf, Gaertner, *A Primer in Social Choice Theory*, Oxford University Press, 2009.
- (7) Mukherjee, A, *Walrasian and Non-Walrasian Equilibria: An Introduction to General Equilibrium Analysis*, Oxford University Press, 1990.
- (8) Moore, James C, *General Equilibrium and Welfare Economics: An Introduction*, Springer, 2007

Course Title:	Macroeconomics I	Course Code:	ECPG1CC02
Semester:	1 st	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Macroeconomic Accounting: Stocks and Flows; Output and Income; Income and Expenditure; Saving and Investment; Real and Nominal Income; The open economy.	1-8	
2	Background: (a) The Point of Departure: Circular relation between aggregate income and aggregate expenditure and two alternative approaches to macroeconomics (supply side approach and demand-based approach). (b) Introduction to Supply Based Models: Wage-price flexibility and voluntary unemployment; Comparative-static exercises; Labour in efficiency units and the role of economic policy. (c) Introduction to Demand Based Models: Relative wage hypothesis and constant money wage; A model of effective demand with money; Wage rigidity and the concept of involuntary unemployment; Volatile expectation and monetary versus fiscal policy in recession.	9-30	
3	Consumption and Investment: Consumption theory and Hall's random walk; Neo-classical investment theories and Tobin's 'q' theory.	31-38	
4	Open Economy Macroeconomics: Mundell-Fleming model; Role of monetary and fiscal policies under alternative exchange regimes; Process of adjustment and exchange rate overshooting; An alternative formulation of the process of adjustment and divergent paths; Treatment of financial crisis in Mundell-Fleming model.	39-60	

References:

- (1) Romer, D, *Advanced Macroeconomics*, McGraw Hill, 2011. (**Text**)
- (2) Davidson, P, *Post Keynesian Macroeconomic Theory*, Edgar Elgar, 2011.
- (3) D'Souza, E, *Macroeconomics*, Pearson Education, 2012.
- (4) Uribe, Martin & Stephanie Schmitt-Grohe, *Open Economy Macroeconomics*, Princeton University Press, 2011.
- (5) Vegh, C A, *Open Economy Macroeconomics in Developing Countries*, MIT Press, 2013.
- (6) Gandolfo, Giancarlo, *International Finance and Open-Economy Macroeconomics*, 2nd edition, Springer, 2016

Course Title:	Mathematical Methods in Economics	Course Code:	ECPG1CC03
Semester:	1 st	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Mathematical Logic and Real Analysis: Brief introduction to mathematical logic; Introduction to set theory; The real number system – concepts of least upper bound and greatest lower bound; Introduction to functions – one-to-one correspondence and cardinality of sets; Basic real analysis – metric sets, neighbourhoods, closed and open sets, sequences, limits, etc.	1-8	
2	Linear Algebra: Vectors; Matrices; Types of matrices; Matrix operations; Solution of simultaneous equations using matrix algebra; Partitioned matrix; Rank of a matrix; Inverse and trace of a matrix; Evaluation and properties of determinants; Input-output models; Quadratic equation; Characteristic (eigen) roots and vectors.	09-18	
3	Classical Optimization: Unconstrained optimization; Global and local extrema of real-valued functions; Unconstrained maxima and minima with more than one explanatory variable; Optimization subject to equality constraints: The Lagrange Multiplier method; Necessary and sufficient conditions for solution to the optimization problem with equality constraints; Properties of convex and concave functions; Interpretation of the Lagrangian Multiplier.	19-28	
4	Linear Programming: (a) Formulation of the linear programming problem; Definitions of feasible solutions, and basic feasible solutions; The simplex method of solving linear programming problems. (b) The dual of a linear programming problem; Duality theorems; Interpretation of the dual variables. (c) Simplex algorithm; Big M method and 2-phase method; Duality simplex method; Complimentary slackness theorem; Post optimality analysis.	29-38	
5	Non-linear Programming: Kuhn-Tucker conditions and interpretation of the Lagrangian multiplier; Multi-variable optimization with equality and inequality constraint; Comparative-static problems.	39-46	
6	Optimal Control Theory: The maximum principle; Dealing with different types of transversality condition; Economic interpretation of optimal control theory; Sufficient condition; Optimal control with different types of constraints: Applications	47-60	

References:

- (1) Simon, Carl P & Lawrence Blume, *Mathematics for Economists*, W. W. Norton & Co., 1994.
- (2) Mukherjee, Anjan and Subrata Guha, *Mathematical Methods and Economic Theory*, Oxford University Press, 2010.
- (3) Intriligator, M.D., *Mathematical Optimization and Economic Theory*, Prentice Hall, 1971.
- (4) Dixit, A, *Optimisation in Economic Theory*, OUP, 1990.
- (5) Hadley, G, *Linear Programming*, Addison-Wesley Pub. Co., Massachusetts, 1962.
- (6) Sundaram, R K, *A First Course in Optimization*, OUP, 1996
- (7) Beavis, Brian & Ian Dobbs, *Optimization and Stability Theory for Economics Analysis*, Cambridge University Press, 1990.
- (8) Kamien, M I & N L Schwartz, *Dynamic Optimization*, Elsevier Science, Second edition, 1991.
- (9) Sydsaeter, Knut, Peter Hammond & Arne Strom, *Essential Mathematics for Economic Analysis*, 4th edition, Pearson Education, 2012.
- (10) Chiang, A. C. and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, Mc Graw Hill, 4th edition, 2005.
- (11) Chiang A. C., *Dynamic Optimization*, McGraw Hill Inc, 1992.
- (12) Taha, H.A., *Operations Research: An Introduction*. Macmillan Pub Co, 1976.

Course Title:	Statistics and Introductory Econometrics	Course Code:	ECPG1CC04
Semester:	1 st	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Probability Theory and Distributions: Basic probability concepts and rules; Conditional probability; Random variables and probability distributions; Discrete and continuous probability distributions; Probability mass and density functions; Expectation of a random variable and rules of expectation; Measures of location, dispersion, skewness and kurtosis for a probability distribution; Properties of binomial, normal, Poisson, and multinomial distributions; Laws of large numbers and central limit theorem.	1-10	
2	Sampling Methods and Sampling distributions: Simple random sampling with and without replacement; Stratified random sampling; Probability and non-probability sampling; Sampling distributions: t, Chi-square and F-distribution; Determination of sample size.	11-18	
3	Statistical Inference: Population and sample; Parameter and statistic; Point estimation and interval estimation; Maximum likelihood and moment methods of estimation; Small sample properties of estimators; Asymptotic properties of estimators; Hypothesis testing; Null and alternative hypotheses; Simple and composite hypotheses; Procedure for testing of hypotheses; Type I and Type II errors; Power of a test; Level of significance; Confidence interval and confidence limits; Degrees of freedom; Test for equality of two means and variances (large and small samples); Large sample tests for proportions; Significance test for correlation coefficient.	19-28	
4	Simple and Multiple Linear Regression Models: Definition, specification, and assumptions; OLS estimation; BLUE properties; Various problems of inference; Goodness of fit measures; Testing overall significance of regression; Regression without intercept term; Reverse regression.	29-42	
5	Some Econometric Problems: Heteroskedasticity, Autocorrelation, and Multicollinearity (definition, causes, consequences, detection, and remedial measures).	43-54	
6	Simultaneous Equations System: Definition, structural and reduced-form equations; identification problem; estimation methods.	55-60	

References:

- (1) Mood, A M, R A Graybill & R C Boes, *Introduction to the Theory of Statistics*, McGraw-Hill, 1974.
- (2) Degroot, M H & Schrivish, M J, *Probability and Statistics*, 4th edition, Addison-Wesley, 2012.
- (3) Bhaumik, Sankar Kumar, *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press, 2015.
- (4) Chatterjee, Samprit & Ali S Hadi, *Regression Analysis by Example*, 5th edition, John Wiley and Sons, New York, 2012.
- (5) Wooldridge, J M, *Introductory Econometrics: A Modern Approach*, 6th edition, South-Western Cengage Learning, 2016.
- (6) Baltagi, B H, *Econometrics*, 5th edition, Springer, 2011.
- (7) Gujarati, D N & D C Porter, *Basic Econometrics*, 5th edition, McGraw Hill, 2009.
- (8) Murthy, M N, *Sampling Theory and Methods*, Statistical Publishing Society, Kolkata, 1967.
- (9) Spiegel, Murray R & Stephens, Larry J, *Schaum's Outline of Statistics*, 6th edition, McGraw-Hill, 2018.

Course Title:	Development Economics	Course Code:	ECPG1CC05
Semester:	1 st	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Concepts and Measures of Growth and Development: Development concerns in economic thought; History, expectations and development; Economic growth and structural change; Capabilities, entitlements and deprivation; Inequality and growth; Measurement of inequality and poverty; Measurement of development - HDI, GDI, etc.; Role of market and state.	1-12	
2	Microeconomics of Development: Segmentation of rural land, labour, and credit markets; Interlinkages of rural markets; Formal-informal dualism; Theories of rural credit markets; Microfinance; The household model of fertility decisions; Urban informal sector.	13-24	
3	Macroeconomics of Development: Environment and development; Development and the constraint of natural resources; Environmental problems in economic development; Environment and sustainable development; Trade and development; Role of international financial and trade institutions; Structural adjustment and stabilization.	25-34	
4	Institutions and Development: Role of institutions in economic development: North, Acemoglu; Issue of governance: Oliver Williamson's theory of transaction cost; Corporate governance; Issue of property rights: Coase, De Soto; Corruption in governance; Entrepreneurship and development: Schumpeter, Knight and Baumol.	35-48	
5	Equality and Justice: Literature on theories of justice; Rawls' theory of justice; Rawlsian justice versus the capability approach; Gender justice; Women empowerment; Justice for marginalized groups.	49-60	

References:

- (1) Mukherjee, Aparajita and Saumya Chakrabarti, *Development Economics: A Critical Perspective*, Prentice Hall India, 2016.
- (2) Ray, Debraj, *Development Economics*, Oxford University Press, 1998.
- (3) Basu, Kaushik, *Analytical Development Economics: The Less Developed Economy Revisited*, Oxford University Press, 1995.
- (4) Deneulin, Severine and Lila Shahani (eds.), *An Introduction to the Human Development and Capability Approach: Freedom and Agency*, Earthscan, London, 2009.
- (5) Fukuda-Parr, S. and A. K. Shiva Kumar, *Handbook of Human Development*, Oxford University Press, 2009.
- (6) Acemoglu, Daron Simon Johnson and James A. Robinson, "Institutions as a fundamental cause of long-run growth," in Philippe Aghion and Steven N. Durlauf (eds.), *Handbook of Economic Growth*, Elsevier 2005.
- (7) Agénor, P & and P J Montiel, *Development Macroeconomics*, Princeton University Press, 1999.
- (8) Agenor, Pierre-Richard, *Economics of Adjustment and Growth*, Harvard University Press, 2004.
- (9) Bardhan, Pranab and Christopher Udry, *Development Microeconomics*, Oxford University Press, 1999.
- (10) Hayami, Y, *Development Economics: From the Poverty to the Wealth of Nations*, Oxford University Press, 2001
- (11) Sen, A, *Commodities and Capabilities*, Oxford University Press, 1999

Course Title:	Microeconomics II	Course Code:	ECPG2CC06
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Game Theory: (a) <i>Static Games of Complete Information:</i> Dominated strategies; Iterated elimination of strictly dominated strategies; Mixed strategies; Nash equilibrium with mixed strategies and applications. (b) <i>Dynamic Games of Complete Information:</i> Backwards induction; Sequential bargaining; Imperfect information: subgame perfection; Repeated games: two-stage repeated games, infinitely repeated games; Dynamic games of complete but imperfect information; Subgame perfect Nash equilibrium and applications. (c) <i>Static Games of Incomplete Information:</i> Static Bayesian games; Solution concept of Bayesian Nash equilibria and applications. (d) <i>Dynamic Games of Incomplete Information:</i> Perfect Bayesian equilibrium; Applications in signalling games.	1-36	
2	Market Failures: Imperfect markets; Oligopoly models; Game-theoretic interpretations of Cournot, Bertrand and Stackelberg model; Externalities and inefficiency – Pigouvian taxes; Incomplete markets, property rights and Coase theorem.	37-48	
3	Information Economics: The Market for Lemons; Choosing the quality; Incomplete information – moral hazard and adverse selection problems; Hidden information modelling; Market signalling; Principal-agent models.	49-60	

References:

- (1) Kreps, David M, *A Course in Microeconomic Theory*, Princeton University Press, Illustrated edition, 2020.
- (2) Mass-Colell, A., M. Whinston and J. Green, *Microeconomic Theory*, Oxford University Press, New Delhi, 1995.
- (3) Jehle G A and Reny P J, *Advanced Microeconomic Theory*, 3rd Edition, Prentice Hall, 2011.
- (4) Varian, Hal R, *Microeconomic Analysis*, VIVA Books, 2010.
- (5) Gibbons, R, *Game Theory for Applied Economists*, Pearson Higher Education, 2010.
- (6) Osborne, M J & A Rubinstein, *A Course in Game Theory*, MIT Press. 1994.
- (7) Tirole, J, *The Theory of Industrial Organisation*, MIT Press, 1988.
- (8) Macho-Stadler, I and J D Perez-Castrillo, *An Introduction to the Economics of Information: Incentives and Contracts*, Oxford University Press, 2nd edition, 2001.
- (9) Martimort, David, *The Theory of Incentives*, New Age International Private Limited, 2006.
- (10) Salanie, B, *The Economics of Contracts: A Primer*, MIT Press, 2005.
- (11) Xavier, V, *Oligopoly Pricing: Old Ideas and New Tools*, MIT Press, 2001.
- (12) Binmore, K., *Game Theory: A Very Short Introduction*, Oxford University Press, 2010

Course Title:	Macroeconomics II	Course Code:	ECPG2CC07
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Rational Expectations: Adaptive expectation, rational expectation and the Lucas critique; A market clearing model with rational expectation and the policy irrelevance result; Limitation of rational expectation theory and the passage to real business cycle.	1-10	
2	Real Business Cycle: Overlapping generation model and the Ricardian equivalence; Exposition of real business cycle in an Overlapping generation model; Integration between trend and cycle; Intertemporal labour-leisure substitution and its critique.	11-20	
3	Economic Growth: Neoclassical growth theory; The convergence problem; Optimal growth theory: Ramsey-Cass-Koopmans model; Endogenous growth models; Endogenous growth and R&D.	21-34	
4	New-Keynesian Macroeconomics: (a) Keynes & New-Keynesianism; Staggered wage, rational expectation and the breakdown of the policy irrelevance result; Menu cost and the fluctuation of output; Model of disciplinary unemployment. (b) Disequilibrium, multiple equilibria, hysteresis; Reconstructing the Keynesian multiplier; The New-Keynesian model of inflation.	35-48	
5	Disequilibrium Macroeconomics: Clower, Barro-Grossman, Malinvaud and Benassy models.	49-60	

References:

- (1) Romer, D, *Advanced Macroeconomics*, McGraw Hill, 2011
- (2) D'Souza, E, *Macroeconomics*, Pearson Education, 2012.
- (3) Heijdra, B.J, *Foundations of Modern Macroeconomics*, Oxford University Press, Paperback, 2015.
- (4) Carlin W & Soskice, D, *Macroeconomics – Imperfections, Institutions & Policies*, Oxford University Press, Indian edition, 2006.
- (5) Benassy, Jean-Pascal, *Macroeconomic Theory*, Oxford University Press, 2011.
- (6) Benassy, Jean-Pascal, *Macroeconomics: An Introduction to the Non-Walrasian Approach*, Academic Press, New York, 1986
- (7) Lucas, R E and T, J. Sargent (eds.), *Rational Expectations and Econometric Practice*, Volume 1. University of Minnesota, 2011.
- (8) Hartley J, K Hoover and K. D. Salyer (eds.), *Real Business Cycles: A Reader*, Routledge, 1998.
- (9) Lucas, R E, *Studies in Business Cycle Theory*, MIT Press, 1983.
- (10) Miller, P J, *The Rational Expectations Revolution: Readings from the Front Line*, MIT Press, 1994.
- (11) Mankiw, N G & D Romer (eds.), *New Keynesian Economics* (2 volumes), MIT Press, 1991.
- (12) Bewley, Truman F, *General Equilibrium, Overlapping Generations Models and Optimal Growth Theory*, Harvard University Press, 2007.
- (13) Jones, C I and D Vollrath, *Introduction to Economic Growth*, WW Norton and Company, 2013.
- (14) Barro, R J and Xavier I Sala-i-Martin, *Economic Growth*, Prentice Hall of India, 2nd edition, 2007.
- (15) Aghion, Philippe and Peter Howitt, *The Economics of Growth*, MIT Press, 2008
- (16) Barro, R J and Grossman, H I, 'A General Disequilibrium Model of Income and Employment', *American Economic Review*, Vol. 61, 1971, pp. 82-93.

Course Title:	Econometric Methods	Course Code:	ECPG2CC08
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	The General Linear Model: Specification, assumptions, and estimation; Properties of estimators; Inference; Goodness of fit measures; Overall significance of regression.	1-8	
2	Regression Diagnostics: Multicollinearity, heteroskedasticity, autocorrelation, normality test, and model specification errors.	9-18	
3	Dummy Variables: Definition; Regression models with dummy variables; Interaction dummy; Comparing two regression models using dummy variables.	19-22	
3	Binary Choice Models: LPM, logit, probit – estimation, inference and goodness of fit measures.	23-30	
4	Distributed Lag Models: Definition and specification; Koyck's Geometric lag model; Adaptive expectations model; Partial adjustment model; Polynomial lag models.	31-38	
5	Panel Data Regression: Constant coefficients model; Fixed-effects model; Random effects model; Tests for choosing an appropriate panel regression model.	39-46	
6	Time Series Econometrics: Stationary and non-stationary time series; Trend-stationary and difference-stationary series; Tests for stationarity; Cointegration and error-correction mechanism; ARIMA forecasting; Vector autoregressive (VAR) model; Forecasting using VAR; Causality tests; ARCH/GARCH for modelling volatility.	47-60	

References:

- (1) Wooldridge, J M, *Introductory Econometrics: A Modern Approach*, 6th edition, South-Western Cengage Learning, 2016.
- (2) Bhaumik, Sankar Kumar, *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press, 2015.
- (3) Koop, Gary, *Analysis of Economic Data*, John Wiley & Sons, 2013.
- (4) Badi H Baltagi, *Econometric Analysis of Panel Data*, John Wiley & Sons, 2008.
- (5) Enders, Walter, *Applied Econometric Time Series*, 4th edition, John Wiley & Sons, 2015.
- (6) Brooks, Chris, *Introductory Econometrics for Finance*, 3rd edition, Cambridge University Press, 2014.
- (7) Fabozzi, F J et al., *The Basics of Financial Econometrics*, Wiley, 2014.
- (8) Das, Panchanan, *Econometrics in Theory and Practice: Analysis of Cross Section, Time Series and Panel Data with Stata 15.1*, Springer, 2019.
- (9) Gujarati, D, *Econometrics by Example*, 2nd edition, Palgrave Macmillan, 2016.

Course Title:	International Trade Theories and Policy	Course Code:	ECPG3CC09
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Introducing Trade and the Concept of Comparative Advantage	1-2	
2	The Exchange Model: The offer curve and the exchange equilibrium; The terms of trade and real income; Import substitution and export-led growth and immiserization.	3-6	
3	The Ricardian Model of Trade: Absolute and comparative advantage, pattern of trade and specialization; Specialization and country size; Specialization with a continuum of stages of production; Labour mobility and trade; Some selected papers on Ricardian model.	7-14	
4	Specific-factor Model of Trade: Factors and income distribution; The pattern of trade; Dutch diseases; Factor growth and factor prices; Some selected papers on specific factor model.	15-26	
5	Factor Endowment Model of Trade: Pattern of trade and gains from trade; The Rybczynski theorem; The Stolper-Samuelson theorem; Higher dimensions of Heckscher-Ohlin-Samuelson-Vanek (HOSV) model of trade.	27-38	
6	Trade Policy in a Competitive Set Up: Basic tariff analysis; Import tariff for both small and large countries (both partial and general equilibrium); Costs and benefits of protection; Other instruments of trade policy; Effective rate of protection and contents protection scheme.	39-48	
7	The Political Economy of Protection and Welfare: Free trade vs. protected trade; Income distribution and rent seeking; Growth, protection and welfare; International negotiation and trade policy.	49-56	
8	Trade Policy in Developing Countries: Import substitution vs. export promotion; Preferential & non-preferential trade; Custom union & free trade areas.	57-60	

References:

- (1) Caves, R, J Frankel and R Jones, *World Trade and Payments*, Pearson Education, 10th edition, 2007.
- (2) Jones, R W, *International Trade: Essays in Theory*, North Holland, 1979.
- (3) Jones, R W, *International Trade Theory and Competitive Models*, World Scientific, 2018.
- (4) Krugman, P, M Obstfeld and M Melitz, *International Economics: Theory and Policy*, Addison-Wesley, 2018.
- (5) Feenstra, Robert C, *Advanced International Trade: Theory and Evidence*, Princeton University Press, 2005.
- (6) Findlay, R, *International Trade and Development Theory*, Columbia University Press, 1973.
- (7) Nakanishi, N, *The Essence of International Trade Theory*, World Scientific, 2019.
- (8) Acharyya, R, *International Economics*, Oxford University Press, 2014.

Course Title:	Indian Economic Development	Course Code:	ECPG3CC10
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Growth and Sectoral Performance in India: Aggregate GDP growth, structural change and productivity; Agricultural growth and distribution; Manufacturing growth and issues relating to productivity, market structure, and economies of scale; Issues relating to services-led growth; Inclusive growth in recent plans.	1-14	
2	Financial Sector Reforms in India: Issues relating to reforms in banking, insurance, pensions, exchange rate and capital market.	15-24	
3	Trade and Payments Reforms in India: Contours of trade and payments reforms in India; including WTO related reforms in market access; Merchandise trade performance and determinants; Balance of Payments and issues related to accumulation of Foreign Exchange Reserves, Capital Account Convertibility.	25-34	
4	Employment, Poverty and Social Sector Development in India: Measurement issues; Regional and sectoral dimensions in employment, poverty and inequality; Recent debates on poverty and employment during reforms; Issues relating to rural and urban employment, livelihood security, National Urban Livelihood Mission; MGNREGA; Health services and health policy; Educational development and New Education Policy; Financing of health and education; Environmental protection; Sustainable development goals.	35-54	
5	Food Insecurity in India: Rural and urban food insecurity; The Public Distribution System.	55-60	

References:

- (1) Acharya, Sankar and Rakesh Mohan (eds.), *India's Economy: Performance and Challenges*, OUP, New Delhi, 2010.
- (2) Goyal, Ashima, *Handbook of the Indian Economy in the 21st Century: Understanding the Inherent Dynamism*, Oxford University Press, New Delhi, 2014.
- (3) Bhagwati, Jagdish and Arvind Panagariya, *India's Tryst with Destiny: Debunking Myths that Undermine Progress and Addressing New Challenges*, Collins Business, Noida, Uttar Pradesh, 2012.
- (4) Mahendra Dev, S (ed.), *India Development Report 2012-13*, Oxford University Press, New Delhi, 2013.
- (5) Mahendra Dev, S, *Inclusive Growth in India*, Oxford University Press, New Delhi, 2008.
- (6) Balakrishnan, P, *Economic Growth in India*, Oxford University Press, New Delhi, 2010.
- (7) Basu, K (ed.), *India's Emerging Economy*, Oxford University Press, New Delhi, 2005.
- (8) Bhaumik, S K (ed.), *Reforming Indian Agriculture: Towards Employment Generation and Poverty Reduction*, Sage Publications, New Delhi, 2008.
- (9) Sikdar, S, *Contemporary Issues in Globalization: An Introduction to Theory and Policy in India*, Oxford University Press, New Delhi, 2nd edition, 2012.
- (10) Tendulkar, S and T A Bhavani, *Understanding Reforms*, Oxford University Press, New Delhi, 2007.
- (11) Chakravarty, R, *The Financial Sector in India*, Oxford University Press, New Delhi, 2006.
- (12) Panagariya, A, *India: The Emerging Giant*, Oxford University Press, New Delhi, 2008.
- (13) Rakshit, M, *Macroeconomics of Post-Reforms India*, Oxford University Press, New Delhi, 2008.
- (14) Rakshit, M, *Money and Finance in the Indian Economy*, Oxford University Press, New Delhi, 2008.
- (15) Reddy, Y V, *Lectures on Economic and Financial Sector Reforms in India*, Oxford University Press, New Delhi, 2004.
- (16) Dreze, Jean and Amartya Sen, *An Uncertain Glory: India and Its Contradictions*, Allen Lane, New Delhi, 2013.
- (17) Dreze, Jean, *Sense and Solidarity - Jholawala Economics for Everyone*, Permanent Black, New Delhi, 2017.
- (18) Chetan Ghate (ed.), *The Oxford Handbook of the Indian Economy*, Oxford University Press, New Delhi, 2016.
- (19) *Economic Survey*, Government of India, recent years.

Selected articles from various journals to be referred in the classes.

Course Title:	Software Applications of Econometrics	Course Code:	ECPG3CC11
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Introduction to Econometric Software Packages: Familiarity with and basic commands of EViews/Stata/R packages.	1-2	
2	Application of EViews/Stata/R for Regression Analysis: Model estimation, goodness of fit measure, inference, and diagnostic tests (multicollinearity, heteroskedasticity, autocorrelation, normality test, and model specification errors); interpretation and presentation of regression results.	3-14	
3	Application of EViews/Stata/R in Limited Dependent Variable Models: Estimation of LPM, logit and probit models; inference issues; goodness of fit measures; diagnostic tests; interpretation of results.	15-22	
4	Application of EViews/Stata/R in Distributed Lag Models: Estimation of Koyck's model, adaptive expectations model and partial adjustment model; interpretation of results.	23-30	
5	Application of EViews/Stata/R for Analysis of Panel Data: Estimation of alternative panel regression models; tests to choose an appropriate panel regression model (including Hausman test); Interpretation of results of panel regression.	31-40	
6	Application of EViews/Stata/R for Analysis of Time Series Data: Correlogram analysis; stationarity tests; test of cointegration and estimation of ECM; forecasting; estimation of VAR model; test of causality; estimation of ARCH/GARCH models for testing volatility; Interpretation and presentation of results.	41-54	
7	Application of EViews/Stata/R in Simultaneous Equations Systems: Estimation of SES; Interpretation of results.	55-60	

References:

- (1) Baum, Christopher F, *An Introduction to Stata Programming*, 2nd edition, Stata Press, USA, 2016.
- (2) Hamilton, Lawrence C, *Statistics with Stata*, Cengage Learning, USA, 2013.
- (3) Adkins, Lee C & R Carter Hill, *Using Stata for Principles of Econometrics*, John Wiley & Sons, New York, 2011.
- (4) Griffiths, William E et al., *Using EViews for Principles of Econometrics*, John Wiley & Sons, New York, 2012.
- (5) Bhaumik, Sankar Kumar, *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press, New Delhi, 2015.
- (6) Cameron, A Colin & P K Trivedi, *Microeconometrics Using Stata*, Stata Press, USA, 2009.
- (7) Das, Panchanan, *Econometrics in Theory and Practice: Analysis of Cross Section, Time Series and Panel Data with Stata 15.1*, Springer, 2019.
- (8) James, Gareth et al., *An Introduction to Statistical Learning with Applications in R*, Springer, 2017.
- (9) Heumann, Christian and Michael Schomaker Shalabh, *Introduction to Statistics and Data Analysis: With Exercises, Solutions and Applications in R*, Springer, 2017.
- (10) Li, Quan, *Using R for Data Analysis in Social Sciences*, Oxford University Press, 2018.
- (11) Heiss, Florian, *Using R for Introductory Econometrics*, 2nd edition, Florian Heiss (Publisher), 2020.
- (12) Croissant, Yves and Giovanni Millo, *Panel Data Econometrics with R*, John Wiley & Sons, 2019.
- (13) Hatekar, Neeraj R, *Principles of Econometrics: An Introduction (Using R)*, Sage Publications, 2010.
- (14) Singh, Abhay Kumar and David Edmund Allen, *R in Finance and Economics: A Beginner's Guide*, World Scientific Publishing Pvt Ltd, 2020.

Course Title:	Environmental Economics	Course Code:	ECPG4CC12
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Relationship between Environment and Economy: Laws of thermodynamics.	1-2	
2	Basic Concept of Public Good and Private Good: Environmental asset as public good; Concept of externality and market failure; Types and causes of market failure.	3-8	
3	The Theories of Environmental Policy: Pollution as negative externality – optimal pollution; The concept of property right - Coase theorem; Potential for market bargain in externality - criticism of Coase theorem; Taxation and optimal pollution; Pollution changes and property right; Pollution changes and abatement cost; Environmental standards – the inefficiency of standard setting; Taxes vs. standards - Baumol and Oates least-cost theorem; Tradable pollution permits (TPP) - the basic theory of TPPs.	9-24	
4	Environmental Valuation: Environmental valuation and cost-benefit analysis; Revealed preference approach (household production function, travel cost, hedonic price method); Stated preference approach (contingent valuation method).	25-32	
5	Sustainable Development: Context and the concept; Difference between growth, economic development and sustainable development; Values and measures of sustainable development.	33-38	
6	Environmental Accounting: Basic theory; Harwtrick's rule and sustainable income; Concept of linearized Hamiltonian as environmentally adjusted national product and sustainable resource management; Illustrations with various types of non-renewable and renewable resources.	39-48	
7	Environment and Development: Trade-off between development and environment; Environmental Kuznets' curve; Empirical evidence.	49-54	
8	Climate Change: Economics of climate change; Climate change policies; Impact of climate change, adaptation and mitigation issues.	55-60	

References:

- (1) Field, B C & M K Field, *Environmental Economics: An Introduction*, McGraw Hill Education, 7th edition, 2016.
- (2) Kolstad, C Charles, *Environmental Economics*, Oxford University Press, 2000.
- (3) Bhattacharya, R N (ed.), *Environmental Economics: An Indian Perspective*, Oxford University Press, 2001.
- (4) Sankar, U, *Environmental Economics: Readers in Economics*, Oxford University Press, 2001.
- (5) Sengupta, Ramprasad, *Ecology & Economics: An Approach to Sustainable Development*, Oxford University Press, 2009.
- (6) Dasgupta, Partha, *Human Wellbeing and the Natural Environment*, Oxford University Press, 2001.
- (7) Shiva, Vandana, *Ecological, Economic and Political Costs of the Green Revolution*, INTACH (Delhi), 1996.
- (8) Pearce, W David & Kerry R Turner, *Economics of Natural Resources and the Environment*, Johns Hopkins University Press, 1989.
- (9) Conrad, M J and W Colin Clark, *Natural Resource Economics Notes and Problems*, Cambridge University Press, 1987.
- (10) Conrad, M J, *Resource Economics*, Cambridge University Press, 1999.
- (11) Hanley, N, J Shogren & B White, *Environmental Economics in Theory and Practice*, 2nd edition, Macmillan, 2006.
- (12) Perman, Roger et al., *Natural Resource and Environmental Economics*, Pearson Education, 2003.
- (13) Stern, Nicholas, *The Economics of Climate Change: The Stern Review*, Cambridge University Press, 2007

Course Title:	Public Economics	Course Code:	ECPG4CC13
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Theory of Public Good and Public Choice: Public goods and externalities; Merit goods; Samuelson theory; Free rider problem; Lindahl solution; Coase theory; Theory of clubs; Median voter theorem; Theory of rent-seeking.	1-10	
2	Taxation Concepts: Direct and indirect taxes; Efficiency and equity; Dead weight loss (income tax, commodity tax, wealth tax and subsidy); Taxation and monopoly; Measurement of income and expenditure; Tax incidence: partial (income tax, input tax, commodity tax etc.); Measuring progressivity of taxation; User charges.	11-20	
3	Theory of Taxation and Tax Reforms: (a) Basic concepts of tax theory: Direct vs. indirect Taxes; Ability to pay; Horizontal and vertical equity. (b) Commodity taxation: Tax rules; Optimal commodity taxation; Public sector pricing. (c) Income taxation: Equity and efficiency; Taxation and labour supply; Optimal income taxation (linear and non-linear). (d) Tax evasion: Basic model; Auditing and punishment. (e) Tax reforms: Reform in direct taxes; Reform in indirect taxes: the value-added tax, taxation of property; Laffer curve analysis.	21-34	
4	Public Expenditure and the Macro-economy: Determining optimal size of government financing of public expenditure: debt versus tax financing; Fiscal federalism: central and sub-national expenditures, Impact of government expenditure on output and employment; Designing optimal government expenditure policy: issues of size and composition; Designing subsidy policy: health and education expenditure policy in India.	35-48	
5	Fiscal Policy Issues: Budget deficit and public debt: Keynesian, neo-classical, and Ricardian equivalence; Debt dynamics; Interdependence of fiscal and monetary policies; Theory of inter-governmental transfers; Theory and policy of subsidies; Fiscal federalism - Issues of equity and efficiency; Designing equalisation transfers; Conditional and unconditional grants; Fiscal federalism in India - Transfer mechanisms; Role of planning and finance commission; Goods and services tax in India; New direct tax code; Role of central and state FRBMs.	49-60	

References:

- (1) Atkinson, A & Stiglitz, J, *Lectures in Public Economics*, McGraw Hill, 1980
- (2) Auerbach, A & Feldstein, M., *Handbook of Public Economics*, Vol. 3, North Holland, 2002
- (3) Hillman A L, *Public Finance and Public Policy*, Cambridge University Press, 2003
- (4) Boadway, R W & D E Wildasin, *Public Sector Economics*, Cambridge University Press, 1979
- (5) Cullis J & P Jones, *Public Finance and Public Choice*, Oxford University Press, 1998
- (6) Hindriks J & G D Myles, *Intermediate Public Economics*, MIT Press, 2006
- (7) Myles G, *Public Economics*, Cambridge University Press, 1995
- (8) Tresch R, *Public Finance: A Normative Theory*, Academic Press, 1995
- (9) Ghosh, Ambar and Chandana Ghosh, *Public Finance*, Prentice Hall India, 2nd edition, New Delhi, 2014
- (10) Bagchi, Amaresh (ed.), *Readings in Public Finance*, Oxford University Press, 2005.
- (11) Stiglitz, Joseph E, *Economics of the Public Sector*, W.W. Norton & Co., 3rd edition, 2000
- (12) Musgrave, R A & P B Musgrave, *Public Finance in Theory & Practice*, McGraw Hill Publications, 5th edition, 1989

Course Title:	Field Survey and Report Writing	Course Code:	ECPG4CC14
Semester:	4 th	Credits:	Five (5)
Course Objectives:	<ul style="list-style-type: none"> ○ To expose the students to the ground realities to relate their theoretical understanding of the subject to the practical situations. ○ To develop necessary perspectives to evaluate the alternative theoretical paradigms in economics in the light of real-life experiences. ○ To encourage the students to think of alternative theories that may be developed in the light of their field experiences. 		
Conduct of the Course:	<ul style="list-style-type: none"> ○ The field work and report writing may be undertaken by an individual student as well as by a group of students having common interest in the topic for field investigation. ○ Each student/group will be assigned an adviser from among the faculties by the departmental head who would guide and extend all kinds of supervisory advice. 		
Methods of Content Interaction	<ul style="list-style-type: none"> ○ Class lectures on field survey methodology ○ Collection of field data by the students ○ Data analysis using statistical/econometric packages by the students under the guidance of the advisers ○ Submission of field report in bound form by the students 		
Mode of Assessment and Evaluation	30% weight (to be evaluated by a team of internal faculties) before the start of actual field work: Selection of topic for field investigation, preparation of review of literature on the topic, and seminar on survey topic and field methodology before going to the field.		
	70% weight on project report and seminar on the final output, to be distributed as follows: <ul style="list-style-type: none"> ○ Marks to be assigned by the field adviser on final report – 20% weight ○ Marks to be assigned by an internal faculty other than internal field adviser – 20% weight Final seminar – 30% weight – to be evaluated by the team of internal faculties		

ELECTIVE COURSES

Course Title:	Financial Economics	Course Code:	ECPG2EC01
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Portfolio Theory: Mean variance criterion; Systematic and unsystematic risk portfolio diversification; Efficient frontier and capital market line capital asset pricing model; Arbitrage pricing theory.	1-12	
2	Corporate Finance: Capital Budgeting - Net present value and other investment criteria; Capital Structure - Financial leverage and capital structure policy, Modigliani-Miller propositions, short-term financial planning; Net working capital, operating cycle and Cash Cycle; Alternative financing policies for current assets, cash budget, short term borrowing; Cash and liquidity management; Dividends and dividend policy - basic issues, cash Dividends & Dividend Payments, Stock repurchase, Stock Splits & Stock dividends; Debt financing; Valuing risky debt; Term structure of interest rates (expectation hypothesis, liquidity-preference hypothesis and some new theories of term structure); Yield to maturity; Duration and volatility; Default risk and bond ratings.	13-32	
3	Financial Markets: Analysis of Financial Markets - fundamental analysis, technical analysis, efficient market hypothesis; Functioning of different financial markets - money market, stock market, bond market, forwards market, futures & options market, currency futures & currency options market, foreign exchange market, commodity futures market etc.; International financial markets and fundamental parity conditions.	33-48	
4	Financial Risk & Insurance: Basic concepts; Functioning of the insurance sector; Risk management techniques - non-insurance methods; Insurance as a risk management technique - principles and policy provisions; Innovative financial instruments for ex ante disaster risk management.	49-60	

References:

- (1) Ross, S A, R W Westerfield and B D Jordon, *Fundamentals of Corporate Finance*. McGraw Hill/ Irwin, 2012.
- (2) Brealey, R A and S C Myers, *Principles of Corporate Finance*, McGraw Hill/ Irwin, 2007.
- (3) Kevin, S, *Portfolio Management*; Prentice Hall India, 2006.
- (4) Hull, J C, *Options, Futures and Other Derivatives*, Pearson Education, 2014.
- (5) Chandra, P, *Financial Management: Theory and Practice*, McGraw Hill Education Pvt. Ltd., 2011.
- (6) Trieschmann, J S, R E Hoyt and D W Sommer, *Risk Management and Insurance*, Cengage Learning, 2004.
- (7) Copeland, T E, J F Weston and K Shastri, *Financial Theory and Corporate Policy*, Pearson, 2005.
- (8) Bhole, L M and Jitendra Mahakud, *Financial Institutions and Markets: Structure, Growth and Innovations*, Tata McGraw Hill, 2004
- (9) Houthakker, H S and P J Williamson, *Economics of Financial Markets*, Oxford University Press, 1996
- (10) Bodie, Zvi, Robert C Merton, David C Cleeton, *Financial Economics*, Pearson Education, 2012

Course Title:	Industrial Organisation	Course Code:	ECPG2EC02
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Market Structure: Structure-conduct-performance paradigm; Market power; Product differentiation; Static imperfect competition; Price competition; Quantity competition; Dynamic aspects of imperfect competition; Free entry: endogenous number of firms; Industry concentration; Vertically related markets.	1-10	
2	Cartels and Collusion: Formation and stability of cartels: simultaneous cartel formation, sequential cartel formation, network of market-sharing agreements; Sustainability of tacit collusion; Optimal punishment of deviating firms; Unobservable actions; Detecting and fighting collusion.	11-20	
3	Mergers, Joint Ventures and Vertical Relationships: Horizontal mergers; Vertical mergers; Joint ventures; Exclusive dealing and other vertical relationships; Efficiency-increasing mergers; General welfare analysis.	21-30	
4	R& D, Patents and Technology Licensing: R & D and market structure; Cooperative and non-cooperative R & D; Economics of patent protection; Technology licensing; Intellectual property.	31-40	
5	Entry and Entry Barriers: The barriers to entry; The simple entry model and first mover advantage; Sunk cost as entry barrier; Capacity choice as an entry barrier - Spence-Dixit-Stiglitz Model; Limit pricing and entry - Kreps, Wilson, Milgrom and Roberts; Contracts as entry deterrence.	41-52	
6	Advertising: Optimal advertising; Dorfman-Steiner condition; Persuasive advertising; Informative advertising.	53-60	

References:

- (1) Tirole, J, *The Theory of Industrial Organization*, MIT Press, 1988.
- (2) Hay, D A and D J Morris, *Industrial Economics and Organisation: Theory and Evidence*, Oxford University Press, 1991.
- (3) Belleflamme, P and Peitz, M, *Industrial Organization: Markets and Strategies*, Cambridge University Press, 2015.
- (4) Shy, Oz, *Industrial Organization: Theory and Applications*, MIT Press, 1996.
- (5) Vives, Xavier, *Oligopoly Pricing: Old Ideas and New Tools*, MIT Press, 2000.
- (6) Martin, S, *Advanced Industrial Economics*, 2nd edition, Wiley-Blackwell, 2001.

Course Title:	Monetary Economics	Course Code:	ECPG2EC03
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Usefulness of Money: Search-theoretic models of money; Overlapping generation models of money.	1-8	
2	Different Approaches to Modelling Money: Money in the utility function; Cash-in-advance models.	9-14	
3	Money and Public Finance: Budget accounting; Equilibrium seigniorage; Friedman's rule; Optimal taxation and seigniorage; Fiscal theory of price determination.	15-22	
4	New Keynesian Monetary Economics: Taylor rules and other developments.	23-30	
5	Stock Market and Macroeconomics: Analysis of Tobin's q, investment, effective demand.	31-38	
6	Bank Credit and Macroeconomics: Issue of credit rationing and effective supply failure; Credit view, money view and effective demand.	39-46	
7	Financial Crisis: Alternative approaches; Capital account liberalization and financial crisis in emerging market economies.	47-54	
8	Exchange Rate Dynamics, Current Account and the Macroeconomics	55-60	

References:

- (1) Walsh, C A, *Monetary Theory and Policy*, PHI Learning Pvt. Limited, 3rd edition, Indian reprint, 2010.
- (2) Woodford, M, *Interest and Prices: Foundation of a Theory of Monetary Policy*, New Age International Publishers, Indian reprint, 2003.
- (3) Blanchard, O J and Fisher, S, *Lectures on Macroeconomics*, PHI Learning Pvt. Limited, Indian edition, 1989.
- (4) Wickens, M, *Macroeconomic Theory: A Dynamic General Equilibrium Approach*, Princeton University Press, 2nd edition, 2012.

Course Title:	Health Economics	Course Code:	ECPG2EC04
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Introduction to Economic Analysis in Health Care: Health care as an economic good; Differential characteristics of health care; Organization of health care market; Structure of a health care system.	1-6	
2	The Demand for Health Care: Demand, profits and health policy targets; Consumer choice theory in health care; Demand functions for health care; The value of life and quality of life; Modelling choice about health care.	7-14	
3	The Production and Cost of Health Care: Theory of production in health care; Multi-product firms; Returns to scale, additivity and fixed factors; Costs of health care.	15-22	
4	The Supply of Health Care: Firms, markets and industries in the health care sector; Structure, conduct and performance in health care industry; Profit maximization models of health care; Other than profit maximization in health care.	33-30	
5	Markets, Market Failures and Government: Competitive markets to allocate resources; Market failures in health care; Government intervention in health care & government failures.	31-38	
6	Health Insurance and Health Care Financing: Uncertainty and risk; Demand and supply of health insurance; Health insurance market failures; Asymmetric information in health care market; Equity and efficiency effects of health care financing; Supplier-induced demand.	39-52	
7	Health Care in India: Economic dimensions of health system in India; Health indicators and outcomes; Nutritional concerns; Role of government in health care; Equity issues in health and health care systems; Social and gender inequalities; Social security measures; Health care in India; Health and population policies; Health sector reforms in India; The recent health care policies.	53-60	

References:

- (1) Folland, Sherman, Allen Goodman and Miron Stano, *Economics of Health and Health Care*, Pearson Education, New York, 2009.
- (2) Phelps, C E, *Health Economics*, Routledge, 6th edition, 2018.
- (3) Baru, R V, *Private Health Care in India: Social Characteristics and Trends*, Sage Publications, New Delhi, 1998.
- (4) Paul J Feldstein, *Economics of Health Care*, Cengage Learning, Indian edition, 2011.
- (5) Sloan, F A and C Hsieh, *Health Economics*, MIT Press, 2012.
- (6) Ranterre, R E and S P Neun, *Health Economics*, Cengage Learning, 2012.
- (7) Barros, P and Xavier Martinez-Giralt, *Health Economics: An Industrial Organization Perspective*, Routledge, 2012.
- (8) Jones, A M & Others, *Applied Health Economics*, Routledge, 2012.
- (9) Bhattacharya J, T Hyde & P Tu, *Health Economics*, Palgrave-MacMillan, 2013.
- (10) Dasgupta, Monica et al., *Women's Health in India: Risk and Vulnerability*, OUP, Delhi, 1995.

Course Title:	Labour Economics	Course Code:	ECPG2EC05
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Labour Supply: Static labour-leisure choice; Effects of social programs and income taxes; The life-cycle model; Investments in human capital; Collective models of household labour supply; Occupational choice.	1-6	
2	Labour Demand: Static cost, profit and labour demand functions; Elasticity of derived demand: The Hicks-Marshall Rules; Adjustment costs and dynamic labour demand.	7-12	
3	Equilibrium: Compensating differences; Evidence on premium for risky or nasty jobs; Efficiency wages; Segmented labour markets; labour migration.	13-20	
4	Cyclical Fluctuations: Equilibrium models of employment fluctuations; Real wages over the business cycle.	21-26	
5	Wage Issues in Labour Markets: Theories of wages; Wages in different markets; Wage structure and components of wages; Share of wages; Distribution and inequality of wage income; Male-female wage differentials; Inter-sectoral wage differentials; Contract labour; Properties of contractual wages; Labour market rigidities and flexibilities; Wage and output relations.	27-40	
6	Unemployment: Definition and measurement; Variations over time and space; Job search; Effects of unemployment insurance.	41-46	
7	Unions: Objectives and political structure; Bargaining theories; Relative wage effects; Strikes; Union-oligopoly models.	47-52	
8	Regulations and International Labour Standards: Regulation of labour; Child labour; Experience of India vis-à-vis other countries; Entry and product market regulation; International labour standards; Globalization and labour.	53-60	

References:

- (1) Cahuc, Pierre and Andre Zylberberg, *Labour Economics*, MIT Press, 2004.
- (2) Ashenfelter, Orley and Richard Layard, *The Handbook of Labour Economics*, Vols. 1 and 2, North-Holland, 1986; Vols. 3A, 3B, and 3C, 1999.
- (3) Solow, R, *The Labour Market as an Institution*, Blackwell Publisher, 1990.
- (4) Sapsford, David and Zafiris Tzannatos, *The Economics of the Labour Market*, Macmillan, London, 1993.
- (5) Uchikawa, Shuji (eds.), *Labour Market and Institutions in India 1990s and Beyond*, Manohar Publishers, New Delhi, 2003

Course Title:	History of Economic Ideas	Course Code:	ECPG2EC06
Semester:	2 nd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Classical Theories of Value and Distribution: Physiocrats; Mercantilism; Adam Smith; Ricardo; Marx.	1-30	
2	Evolution of Neoclassical Paradigm: General Equilibrium Theory; Keynesian economics.	31-38	
3	Evolution of Critical Economic Theories: Kalecki; Sraffa; Post-Keynesian and Post-Marxian theories.	39-54	
4	Approach of Economic Methodology: Positivism vs. normativism; Causality questions; Modernism vs. postmodernism.	55-60	

References:

- (1) Screpanti, E and S Zamagni, *An Outline of the History of Economic Thought*, Oxford University Press, 2005.
- (2) Hunt, E K and Mark Lautzenheiser, *History of Economic Thought: A Critical Perspective*, 3rd edition, M E Sharpe, Inc., London, 2011.
- (3) Sweezy, Paul M, *The Theory of Capitalist Development*, Dennis Dobson Ltd., London, 1946.
- (4) Samuels, W J & Others, *A Companion to the History of Economic Thought*, Blackwell Publishing, Oxford, 2003.
- (5) Vaggi, G and P Groenewegen, *A Concise History of Economic Thought*, Palgrave Macmillan, 2003.
- (6) Medema, S G and W J Samuels, *The History of Economic Thought: A Reader*, Routledge, 2003.
- (7) Schumpeter, Joseph A, *History of Economic Analysis*, Taylor & Francis, 1986.
- (8) Elster, Jon, *An Introduction to Karl Marx*, Cambridge University Press, 1986.
- (9) Heinrich, Michael, *An Introduction to the Three Volumes of Karl Marx's Capital*, Monthly Review Press, New York, 2004.
- (10) "New Perspectives on the Work of Piero Sraffa", *Cambridge Journal of Economics*, Vol. 36, No. 6, November, 2012.

Course Title:	Corporate Finance and Financial Institutions	Course Code:	ECPG3EC07
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Corporate Finance: (a) Theories of capital structure - Modigliani-Miller hypothesis, agency cost theories, theories relating to asymmetric information: Pecking order hypothesis and signalling. (b) Dividend policy - forms of dividends, Lintner model, dividend irrelevance hypothesis, role of taxes, transaction costs, agency problems and asymmetric information. (c) Corporate finance and product markets. (d) Earnings manipulations.	1-16	
2	Valuation of Companies: (a) Alternative ways of calculating cost of capital (b) Alternative methods of valuation of companies (b) Use of financial statements in valuing a company	17-30	
3	Market for Corporate Control: (a) Financial structure and issues relating to corporate governance (b) Takeovers and mergers	31-40	
4	Financial Intermediation: (a) Theories of financial intermediation. (b) Bank intermediary - special role of banks, industrial organization approaches to banking. (c) Bank runs, role of deposit insurance, role of banking regulations, role of prudential norms. (d) Basel accord.	41-52	
5	Other Financial Intermediaries: Mutual funds; Insurance; Venture capital funds.	53-60	

For this course, the prerequisite is the course on Financial Economics.

References:

- (1) Brealey, R A, S C Myers and F Allen, *Principles of Corporate Finance*, McGraw Hill, 10th edition, 2011.
- (2) Tirole, J, *The Theory of Corporate Finance*, Princeton University Press, 2006.
- (3) Bebchuk, R N, *Asymmetric Information in Financial Markets: Introduction and Applications*, Cambridge University Press, 2003.
- (4) Allen, F and D Gale, *Comparing Financial Systems*. The MIT Press, 1999.
- (5) Xavier, F and J C, Rochet. *Microeconomics of Banking*, The MIT Press, 2008.
- (6) Benninga, S, *Financial Modeling*, The MIT Press, 2008.
- (7) Copeland, T E, J F Weston and K Shastri, *Financial Theory and Corporate Policy*, Pearson, 2005.
- (8) Berk, Jonathan, and DeMarzo, Peter, *Corporate Finance*, Pearson International, 2007.
- (9) Ross, Stephen A, Randolph W Westerfield and Bradford D Jordan, *Fundamentals of Corporate Finance*, 11th Ed., McGraw-Hill, 2015.
- (10) Ross, Stephen A, Randolph W Westerfield and Jaffrey Jaffe, *Corporate Finance*, 6th edition, McGraw-Hill, 2002.

Course Title:	Advanced Econometrics	Course Code:	ECPG3EC08
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Advanced Econometric Methods: Maximum likelihood (ML); Generalized method of moments (GMM).	1-6	
2	Analysis of Cross-Section Data: Censoring, truncation and selection bias (Tobit, Heckman correction); Multinomial regression models.	7-12	
3	Stochastic Regressors and Instrumental Variables Method: Endogeneity problem; Instrumental variable estimation.	13-18	
4	Alternatives to OLS Regression: Quantile regression; Multivariate regression; Seemingly unrelated regression.	19-24	
5	Advanced Panel Data Models: Dynamic heterogeneous panels; Non-stationary panels; Panel unit root and cointegration tests; Estimation of dynamic panel models.	25-32	
6	Bayesian Methods: Prior and posterior distribution; Bayesian point and interval estimation; Bayesian analysis of linear regression; Monte Carlo integration; Markov Chain Monte Carlo simulation; Gibbs sampler for SUR-data augmentation; Bayesian model selection; Practical considerations.	33-46	
7	Multivariate Analysis: Factor analysis; Principal components analysis; Discriminant analysis; Cluster analysis.	47-54	
8	Computer Applications: Analysis of cross-section and panel data using a suitable econometric software package; Applications of multivariate techniques using a suitable statistical package.	55-60	

References:

- (1) Wooldridge, J M, *Introductory Econometrics: A Modern Approach*, 5th edition, South-Western Cengage Learning, United States, 2013.
- (2) Wooldridge, J M, *Econometric Analysis of Cross-section and Panel Data*, 2nd edition, The MIT Press, Cambridge, 2010.
- (3) Badi H Baltagi, *Econometric Analysis of Panel Data*, John Wiley & Sons, United Kingdom, 2008.
- (4) Green, W H, *Econometric Analysis*, 7th edition, Pearson Education, USA, 2012.
- (5) Asteriou, D and S G Hall, *Applied Econometrics*, 2nd edition, Palgrave Macmillan, London, 2011.
- (6) Das, Panchanan, *Econometrics in Theory and Practice: Analysis of Cross Section, Time Series and Panel Data with Stata 15.1*, Springer, 2019.
- (7) Gujarati, D, *Econometrics by Example*, 2nd edition, Palgrave Macmillan, 2016.
- (8) Rencher, A C, *Methods of Multivariate Analysis*, 2nd edition, John Wiley & Sons, United Kingdom, 2002.
- (9) Tacq, J J A, *Multivariate Analysis Techniques in Social Science Research: From Problem to Analysis*, Sage International, United Kingdom, 1997.
- (10) Spencer, N H, *Essentials of Multivariate Data Analysis*, CRC Press, New York, 2014.
- (11) Adkins, Lee C & R Carter Hill, *Using Stata for Principles of Econometrics*, John Wiley & Sons, New York, 2011.
- (12) Griffiths, William E et al., *Using EViews for Principles of Econometrics*, John Wiley & Sons, New York, 2012.
- (13) Cameron, A Colin & P K Trivedi, *Microeconometrics Using Stata*, Stata Press, USA, 2009.

Course Title:	Behavioural Economics	Course Code:	ECPG3EC09
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Introduction: Origin, scope and importance of behavioural economics; Behavioural vs. neoclassical economics; Methodology of behavioural economics. [Refs.: Altman (2006, Chs. 1-3, 7, 11-12); Wilkinson and Klaes (2012, Ch. 1); Dhami (2016, Chs. 9-11); Angner (2016, Ch. 1); Nermend and Latuszynska (2017, Ch. 1); Cartwright (2018, Ch. 1); Corr and Plagnol (2019, Chs. 1-2)]	1-8	
2	Behavioural Economics of Risk, Uncertainty and Ambiguity: Heuristics and biases in judgement and decision making – utility and search, mental accounting and framing, anchoring and adjustment, role of emotions; Behavioural models of decision making; Some applications of behavioural decision theory; Human behaviour under ambiguity. [Refs.: Wilkinson and Klaes (2012, Chs. 3-6); Dhami (2016, Chs. 1-4 and 17-20); Angner (2016, Chs. 2-7); Cartwright (2018, Ch. 2-3).]	09-24	
3	Behavioural Time Discounting: Evidence on temporal human choice – discounted utility model, exponential discounted utility model and its anomalies; Behavioural models of time discounting – sign and magnitude effects, common difference effect, attribute-based models, reference time theory; Some applications of present-biased preferences. [Refs.: Camerer and Loewenstein (2004, Chs. 6-7); Wilkinson and Klaes (2012, Chs. 7-8); Dhami (2016, Chs. 9-11); Angner (2016, Chs. 8-9); Cartwright (2018, Ch. 4)]	25-40	
4	Strategic Interaction: Evidence on strategic human choice; Different models of behavioural game theory; Some applications of behavioural game theory; Modelling social preferences – inequality-aversion models, reciprocity models, etc. [Refs.: Camerer and Loewenstein (2004, Chs. 12-13); Wilkinson and Klaes (2012, Chs. 9-10); Dhami (2016, Chs. 13-14); Angner (2016, Chs. 10-11); Cartwright (2018, Ch. 4)]	41-52	
5	Behavioural Welfare Economics, Libertarian Paternalism and Nudge Agenda: Behavioural welfare economics; Libertarian paternalism and nudging; Nudges as instruments of policy making. [Refs.: Angner (2016, Ch. 12); Corr and Plagnol (2019, Ch. 6).]	53-60	

References:

- (1) Altman, Morris (ed.), *Handbook of Contemporary Behavioral Economics*, M.E. Sharpe, New York, 2006.
- (2) Wilkinson, Nick and Matthias Klaes, *An Introduction to Behavioral Economics*, 2nd edition, Palgrave Macmillan, 2012.
- (3) Angner, Eric, *A Course in Behavioral Economics*, Palgrave Macmillan, 2016.
- (4) Dhami, Sanjit, *The Foundations of Behavioral Economics*, Oxford University Press, 2016.
- (5) Nermend, Kesra and Malgorzata Latuszynska (eds.), *Problems, Methods and Tools in Experimental and Behavioral Economics*, Springer, 2017.
- (6) Cartwright, Edward, *Behavioral Economics*, 3rd edition, Routledge, 2018.
- (7) Corr, Philip and Anke Plagnol, *Behavioral Economics: The Basics*, Routledge, 2019.
- (8) Abdulkadirov, Sherzod (eds.), *Nudge Theory in Action: Behavioral Design in Policy and Markets*, Palgrave Macmillan, 2016.

Course Title:	Urban Economics	Course Code:	ECPG3EC10
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Introduction: The space-economy interaction; Emergence and development of urban areas; Urbanisation in developed and developing countries; Theories of urban and regional growth – The New Economic Geography.	1-10	
2	Basics of Urban Economics: (a) Urban system – hierarchy and city size distribution; Central place theory (b) Location theory; Intra and inter-urban location of economic activities; The distance-decay relationship – concept of gradients (c) Urban base theory; Models of optimal city size	11-22	
3	Sectoral Issues: (a) Urban land market and land use (b) Urban labour market and migration (c) Rural-urban relationship – Linkages and flows	23-32	
4	Local Public Goods and Infrastructure: Nature of local public goods and utility pricing – water/sanitation, health and education; Power, housing and transportation infrastructure; Slums and rehabilitation; Urban infrastructure needs and finance	33-42	
5	Governance: Municipal governments – sources of revenues (local taxes) and expenditure; Functions and budgets in a decentralized set up; Governance issues – capacity building and the role of civil society	43-52	
6	Urban Poverty: Slums; Informal sector; Urban Poverty in India	53-60	

References:

- (1) O'Sullivan, A, *Urban Economics*, McGraw-Hill, 2002.
- (2) Balchin, P N & Others, *Urban Economics: A Global Perspective*, Macmillan International / Red Globe Press, 2000
- (3) Evans, A W, *Urban Economics: An Introduction*, Basil Blackwell, 1985
- (4) Sivaramakrishnan, K C & Others, *A Handbook of Urbanisation in India*, 2nd edition, 2007 (PB)
- (5) Gottdiener, M and Budd, L, *Key Concepts in Urban Studies*, Sage Publications, 2005
- (6) Brooks, Nancy & Others, *The Oxford Handbook of Urban Economics and Planning*, Oxford University Press, 2011
- (7) Shukla, V, *Urbanization and Economic Growth*, Himalaya Publishers Pvt Ltd, 1996
- (8) Bahl, R and J Linn, *Urban Public Finance in Developing Countries*, Oxford University Press, 1992
- (9) Ramachandran, R, *Urban Economics and Urban Systems in India*, Oxford University Press, 1989
- (10) Harvey, David, *The Urban Experience*, The John Hopkins University Press, 1989
- (11) Harvey, Jack, *Urban Land Economics*, Palgrave, 2000
- (12) Beall, Jo and Sean Fox, *Cities and Development*, Routledge, 2009
- (13) Kundu A (ed.), *India Urban Poverty Report*, Oxford University Press, 2010
- (14) *India Infrastructure Report*, various issues

Course Title:	Agricultural Economics I	Course Code:	ECPG3EC11
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Theories of Peasant Economy: Features of Peasant Societies; Elements of Peasant Political Economy; The Theories of Optimizing Peasant (profit-maximising peasant, risk averse peasant, drudgery averse peasant, and sharecropping peasant); Women in Peasant Household.	1-30	
2	Institutions and Markets in Backward Agrarian Economies: Land Institutions and Land Markets: Efficiency and Equity Issues; Labour Contracts and Organisations; Credit Contracts and Markets; Agricultural Output Markets.	31-60	

References for Unit 1:

- (1) Shanin, T (ed.) (1987), *Peasants and Peasant Societies*, 2nd Edition, Blackwell.
- (2) Ellis, Frank, *Peasant Economics*, Chs. 1, 3, and 4 to 9, CUP, 2nd Edition, 1993.
- (3) Singh, Inderjit et al. (ed.), *Agricultural Household Models: Extensions, Applications, and Policy*, The Johns Hopkins University Press, Baltimore, USA, 1986.
- (4) Akram-Lodhi, A. Haroon, and Cristobal Kay (eds.) (2009), *Peasants and Globalization: Political Economy, Rural Transformation and the Agrarian Question*, Routledge.
- (5) Barkin, David (2004), 'Who Are The Peasants?' *Latin American Research Review*, Vol. 39 Issue 3, pp. 270–281.
- (6) Scott, James C (2008), *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia*, Yale University Press.

References for Unit 2:

- (1) B L Gardner and G C Rausser (eds.), *Handbook of Agricultural Economics*, Vol. 1A, Ch. 6, Elsevier, Amsterdam, 2001.
- (2) R Evenson and Prabhu Pingali (eds.), *Handbook of Agricultural Economics*, Vol. 3, Chs. 51, 52, 55, 56, Elsevier, Amsterdam, 2007.
- (3) Karla Hoff, Avishay Braverman and Joseph E Stiglitz (eds.), *The Economics of Rural Organization*, The World Bank - OUP, 1993.
- (4) Amit Bhaduri, *The Economic Structure of Backward Agriculture*, Macmillan, 1983.
- (5) Debraj Ray, *Development Economics*, Chs. 11 to 14, OUP, 1998.
- (6) Pranab Bardhan, *Land, Labour and Rural Poverty*, OUP, 1983.
- (7) Pranab Bardhan, *The Economic Theory of Agrarian Institutions*, OUP, 1989.
- (8) Pranab Bardhan and Christopher Udry (eds.), *Development Microeconomics*, OUP, 1999.

Course Title:	Law and Economics	Course Code:	ECPG3EC12
Semester:	3 rd	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Law and Legal Institution: What is law; Some important schools of thought; Overview of the two important legal traditions - Civil law tradition and Common law tradition.	1-6	
2	Law and Economics: Law and economics as an alternative theory of jurisprudence; Basic framework of analysis, broad conclusions, and implications of economic analysis of law.	7-14	
3	Contracts: Bargaining Theory: An introduction to contracts; An economic theory of contracts; Legal remedies; Applications.	15-20	
4	Economic Analysis of Civil Law: (i) Tort Law: Liability rules, efficiency and values. (ii) Contract Law: Contracts, performance and breach; Remedies for breach of contract (damages: expectation damages and reliance damages; and specific performance); Efficient remedies. (iii) Property Law: Legal concept of property; Protecting private property; Injunction and compensatory damages; Efficiency of property law: Common property.	21-36	
5	Economic Analysis of Criminal Law: Crime and punishment; Objectives of criminal law; Deterrence hypothesis; Optimal deterrence; Optimal means of deterrence – fines and incarceration, death penalty.	37-44	
6	Economics of Legal Process: Trial; Appeal; Judiciary; Lawyer's Profession.	45-48	
7	Crime and Punishment: An economic theory of crime and punishment; Does punishment deter crime; Efficient punishment; The death penalty.	49-54	
8	Case Study of Indian Laws: Land acquisition; Contract; Patent protection; Delays in Indian legal system; Weak enforcement in India; Citizens action and judicial activism.	55-60	

References:

- (1) Jain, Satish K (ed.), *Law and Economics*, Oxford University Press, 2010.
- (2) Baird, Douglas G., Gertner, Robert H. and Picker, Randal C. (1994), *Game Theory and the Law*, Harvard University Press, 1994.
- (3) Cooter, Robert D and Ulen, Thomas S, *Law and Economics*, 3rd edition, Addison-Wesley, 1999.
- (4) Friedman, David D, *Law's Order*, Princeton University Press, 2000.
- (5) Hart, H L A, *The Concept of Law*, Clarendon Press, Oxford, 1961.
- (6) Holmes, Oliver Wendell, *The Common Law*, Harvard University Press, Cambridge (MA), 1963.
- (7) Shavell, Steven, *Economic Analysis of Accident Law*, Harvard University Press, Cambridge (MA), 1987.
- (8) Babu, P G et al (eds.), *Economic Analysis of Law in India: Theory and Applications*, Oxford University Press, 2010.
- (9) Barzel, Yoram, *The Economics of Property Rights*, Cambridge University Press, 1988.
- (10) Shavell, Steven, *An Economic Analysis of Accident Law*, Harvard University Press, Cambridge (MA), 1987.

Selected chapters from Handbook of Economics and Law, Vols. I and II, to be referred in the class.

Course Title:	International Finance	Course Code:	ECPG4EC13
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Foreign Exchange Rates and Markets: Foreign exchange rates: fixed, flexible, nominal, real and effective exchange rates; Purchasing power parity and interest parity; Foreign exchange markets: spot, forward, futures and options currency markets; Foreign exchange risk and exposure: exposure, risk and parity relationship, accounting exposure versus real exposure, operating exposure; Hedging risk and exposure.	1-12	
2	Balance of Payments: Balance of payments: current account balance and capital account balance; Official reserve transactions; Relationship between balance of payments and national income accounts; Approaches to balance of payments adjustments: elasticity, absorption, monetary and portfolio- balance approaches.	13-24	
3	International Investment and Financing: Cash management: investment and borrowing criterion with transaction costs; International dimensions of cash management; Portfolio investment: international capital asset pricing, settlement of international portfolio investments; Capital budgeting for foreign investments: project selection, cash flows, discount rates; Growth and concerns about multinationals; International financing: equity financing, bond financing, bank financing, Direct loans and swaps.	25-38	
4	Options & Option Valuation: Call and put options; Put-call parity behaviour of stock prices and Markov property; Black-Scholes options pricing theory; Stock return volatility and capital structure; Real options and capital budgeting; Options and corporate mergers.	39-50	
5	Financial Risk Hedging Strategies & Greek Letters: Stop loss strategy; Delta; Gamma; Theta; Vega; Rho; Portfolio insurance.	51-60	

For this course, the prerequisites are the courses on Financial Economics and Corporate Finance and Financial Institutions.

References:

- (1) Chatterjea, A and Robert Jarrow, *An Introduction to Derivative Securities, Financial Markets and Risk Management*, World Scientific Publishing Co., 2019.
- (2) Ross, S A, R W Westerfield and B D Jordon, *Fundamentals of Corporate Finance*, McGraw Hill, 2012.
- (3) Ross, S A, R W Westerfield and J Jaffe, *Corporate Finance*, McGraw Hill, 2008.
- (4) Brealey, R A and S C Myers, *Principles of Corporate Finance*, McGraw Hill, 2007.
- (5) Francis, J C, *Investments: Management and Analysis*, McGraw Hill, 1991.
- (6) Hull, J C, *Options, Futures and Other Derivatives*, Pearson Education, 2014.
- (7) Levy, M D, *International Finance*, McGraw Hill, Inc, 2009.
- (8) Eun, Cheol S and Bruce G Resnick, *International Financial Management*, McGraw Hill Publishing Company Ltd, 2014.
- (9) Ho, Thomas S Y and Sang Bin Lee, *Oxford Guide to Financial Modeling*. Oxford University Press, 2004.
- (10) Gouriou, C and J Jasiak, *Financial Econometrics*, New Age International Publishers, 2001.

Course Title:	Advanced International Trade	Course Code:	ECPG4EC14
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Application of the Ricardian Model of Trade: Multi-country, multi-commodity; Trade in intermediate inputs; Vertical specialization and global sourcing; Time-zone differences and trade.	1-12	
2	Imperfect Competition and Trade Theory: International trade with increasing returns to scale; Intra-industry specialization and gains from trade; Reciprocal dumping in international trade; Innovation, technology transfer and trade.	13-32	
3	Imperfect Competition and Strategic Trade Policy: Protection and domestic market power; Protection and foreign market power; Strategic trade policy.	33-44	
4	Some Recent Developments in Trade Theory: Firm heterogeneity and trade; Firms, contract and trade; Time-zone differences, Input trade and outsourcing.	45-60	

References:

- (1) Caves, R, J Frankel and R Jones, *World Trade and Payments*, Pearson Education, 10th edition, 2007
- (2) Jones, R W, *International Trade: Essays in Theory*, North Holland, 1979
- (3) Jones, R W, *International Trade Theory and Competitive Models*, World Scientific, 2018
- (4) Krugman, P, M Obstfeld and M Melitz, *International Economics: Theory and Policy*, Addison-Wesley, 2018
- (5) Krugman, P, *Rethinking International Trade*, MIT Press, 1994
- (6) Helpman, E & P Krugman, *Market Structure and Foreign Trade*, MIT Press, 1987
- (7) Helpman, E & P Krugman, *Trade Policy and Market Structure*, MIT Press, 1989
- (8) Kierzkowski, H (ed.), *Monopolistic Competition and International Trade*, Oxford University Press, 1984
- (9) Feenstra, Robert C, *Advanced International Trade: Theory and Evidence*, 2nd edition, Princeton University Press, 2016
- (10) Findlay, R, *International Trade and Development Theory*, Columbia University Press, 1973
- (11) Nakanishi, N, *The Essence of International Trade Theory*, World Scientific, 2019
- (12) Marjit, S, B Mandal and N Nakanishi, *Virtual Trade and Comparative Advantage: The Fourth Dimension*, Springer, 2020
- (13) Marjit, S, *International Trade and Economic Development: Theory and Policy*, Oxford University Press, 2008
- (14) Kikuchi, T, *Time Zones, Communication Networks and International Trade*, Routledge, 2011

Course Title:	Resource Economics	Course Code:	ECPG4EC15
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Economics of Non-Renewable Resource: Basic concepts; Hotelling rule; The concept of backstop; A simple model of optimal depletion; Perfect competition and monopoly in non-renewable resource market.	1-12	
2	Economics of Renewable Resources: (a) Difference between open access and common property resources; Models of unmanaged CPR and managed CPR. (b) Economics of fishery: Biological growth functions; Fishery production functions; Yield-effort function; Static and dynamic models of open access; Regulated access and maximization of rent; Management policies and regulatory frameworks; Optimization under alternative fishery management regimes; Fishery and fish biodiversity; Mangrove-fishery linkages, Basic ideas of the theory of aquaculture shrimp farming. (c) Economics of forestry: Volume function and mean annual increment; Optimal rotation; Optimal rotation and Faustmann's rule; Timber and non-timber forest products; Forestry policies; Economics of conservation of land use.	13-42	
3	Water Economics: Policy context; Static and dynamic market failure; Models of water economics; Common property game; Water markets – case studies.	43-50	
4	Economics of Stock Pollutants: Degradable and non-degradable stock pollutants; Optimal resource extraction with non-degradable waste; Climate change; Emission taxes and marketable pollution permits.	51-60	

References:

- (1) Conrad, J M, *Resource Economics*, 2nd edition, Cambridge University Press, 2010
- (2) Perman, Roger, Yue Ma, Michael Common, David Maddison, James McGilvray, *Natural Resource and Environmental Economics*, 4th edition, Pearson, 2012
- (3) Amacher, G S, M Ollikainen, and E Koskela, *Economics of Forest Resources*, MIT Press, 2009
- (4) Karp, L, *Natural Resources as Capital*, MIT Press, 2017
- (5) Pearce, D W and R K Turner, *Economics of Natural Resource and Environment*, Harvester-Wheatsheaf, 1991

Course Title:	Human Development	Course Code:	ECPG4EC16
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Human Development and Capability Approach	1-8	
2	Issues Related to Human Development (market liberalism, freedom, basic needs, human rights and human security)	9-14	
3	Economic Growth and Human Development	15-20	
4	Equality and Justice – Alternative Theories	21-32	
5	Measuring Development and Deprivation: The HDI and Other Indices (HPI, GDI, and GEM)	33-36	
6	Institutions, Markets and Economic Development	37-42	
7	Democracy and Political Participation	43-48	
8	Education and Health within Human Development and Capability Approach	49-54	
9	Culture and Religion	55-60	

References:

- (1) Deneulin, Severine and Lila Shahani (eds.), *An Introduction to the Human Development and Capability Approach: Freedom and Agency*, Earthscan, London, 2009. [This book shall be the basic text for this course]
- (2) Sen, Amartya, 'Equality of What?' in S McMurrian (ed.) *Tanner Lectures on Human Values*, Cambridge University Press, 1980.
- (3) Sen, Amartya, *Commodities and Capabilities*, Oxford University Press, 1985.
- (4) Sen, Amartya, *Inequality Reexamined*, Oxford University Press, 1992.
- (5) Sen, Amartya, *Development as Freedom*, Oxford University Press, 1999.
- (6) Sen, Amartya, *The Idea of Justice*, Oxford University Press, 2009.
- (7) Dreze, Jean and Amartya Sen, *Economic Development and Social Opportunity*, Oxford University Press, 1995.
- (8) Dreze, Jean and Amartya Sen, *Development and Participation*, Oxford University Press, 2002.
- (9) Fakuda-Parr, S and A K Shiva Kumar, *Readings in Human Development*, Oxford University Press, 2003.
- (10) Ul Haq, M, *Reflections on Human Development*, Oxford University Press, 1995.

Course Title:	Agricultural Economics II	Course Code:	ECPG4EC17
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Economic Transformation and the Rural Non-farm Sector: Theoretical perspectives; Empirical findings.	1-10	
2	Farm-Nonfarm Linkages: Types of linkages; Measurement of linkages; Empirical findings.	11-18	
3	Agricultural Diversification: Meaning of agricultural diversification; Extent and determinants of agricultural diversification; Empirical findings.	19-26	
4	Globalisation of Indian Agriculture: Emerging Issues: India's signing of Agreement on Agriculture (AoA); WTO negotiations; Trade liberalization; Trade in agricultural commodities.	27-36	
5	Performance of Indian Agriculture in the Era of Globalisation: Growth and regional disparity; Capital formation; Subsidy; Technology adoption; Returns from agriculture; Indebtedness; Agrarian reforms; Agrarian crisis.	37-60	

References for Units 1-3:

- (1) Stephen Hymer & Stephen Resnick (1969), "A Model of an Agrarian Economy with Nonagricultural Activities", *American Economic Review*, Vol. 59, pp. 493-506.
- (2) Gustav Ranis & Frances Stewart (1993), "Rural Nonagricultural Activities in Development: Theory and Applications", *Journal of Development Economics*, Vol. 40, No. 1.
- (3) Nurul Islam (1997), *The Nonfarm Sector and Rural Development*, Food, Agriculture and the Environment Discussion Paper # 22, IFPRI, Washington, D.C.
- (4) Peter Lanjouw & Gershon Feder (2001), *Rural Non-Farm Activities and Rural Development: From Experience Towards Strategy*, Rural Development Strategy Background Paper # 4, The World Bank, Washington, D.C. [Available at www.worldbank.org].
- (5) Frank Ellis (2000), *Rural Livelihoods and Diversity in Developing Countries*, CUP, Cambridge.
- (6) S Haggblade, P Hazell and T Reardon (eds.) (2007), *Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World*, OUP, New Delhi.
- (7) Steven Haggblade et al (1989), "Farm-Nonfarm Linkages in Rural Sub-Saharan Africa", *World Development*, Vol. 17, No. 8.
- (8) Peter Hazell & Steven Haggblade et al (1993), "Farm-Nonfarm Growth and Welfare of the Poor", in Michael Lipton & Jacques van Der Gaag (eds.), *Including the Poor*, The World Bank, Washington, D.C.
- (9) Sunil Ray (1994), "Farm-Nonfarm Interaction in a Labour Surplus Economy", *Economic & Political Weekly*, December 31.
- (10) Haggblade, Steven, Jeffrey Hammer and Peter Hazell (1991), "Modeling Agricultural Growth Multipliers", *American Journal of Agricultural Economics*, Vol. 73, No. 2, May.
- (11) John Harriss (1991), "Agriculture/Non-agriculture Linkages and the Diversification of Rural Economic Activity: A South Indian Case Study", in Jan Breman & Sudipto Mundle (eds.), *Rural Transformation in Asia*, Oxford University Press, New Delhi.
- (12) Daniel Start (2001), "The Rise and fall of the Rural Non-farm Economy: Poverty Impacts and Policy Options", *Development Policy Review*, Vol. 19, No. 4.
- (13) Benjamin Devis et al. (2002), *Promoting Farm/Non-farm Linkages for Rural Development*, Food & Agriculture Organisation, Rome, Chapters 1 and 2.
- (14) Shawki Barghouti et al. (2004), *Agricultural Diversification for the Poor: Guidelines for the Practitioners*, Agriculture & Rural Development Discussion Paper # 1, The World Bank, Washington D.C. [Available at www.worldbank.org].
- (15) P Parthasarathy Rao et al. (2004), *Agricultural Diversification In India and Role of Urbanization*, MTID Discussion Paper # 77, IFPRI, Washington, D.C. [Available at www.ifpri.org].

- (16) P K Joshi et al. (2004), "Agriculture Diversification in South Asia: Patterns, Determinants and Policy Implication", *Economic & Political Weekly*, June 12.
- (17) V S Vyas (1996), "Diversification of Agriculture: Concept, Rationale and Approaches", *Indian Journal of Agricultural Economics*, Vol. 51, No. 4.

References for Units 4 and 5:

- (1) Montek S Ahluwalia (1996), 'Agricultural Liberalisation and Development Strategy in the Ninth Plan', *Indian Journal of Agricultural Economics*, Vol. 51, No. 3.
- (2) Ashok Gulati and Tim Kelly (1999), *Trade Liberalisation and Indian Agriculture*, Oxford University Press, New Delhi, Ch. 5.
- (3) Ashok Gulati and Sudha Narayan (2003), *The Subsidy Syndrome in Indian Agriculture*, Oxford University Press, New Delhi.
- (4) Anwarul Hoda and Ashok Gulati (2008), *WTO Negotiations on Agriculture and Developing Countries*, Oxford University Press, New Delhi.
- (5) Biswajit Dhar (2007), 'Prospects of Agricultural Trade Liberalisation' in Suparna Karmakar, Rajiv Kumar and Bibek Debroy (eds.), *India's Liberalisation Experience: Hostage to the WTO*, Sage Publications, New Delhi.
- (6) Debashis Chakraborty and Amir Ullah Khan (2008), *The WTO Deadlocked: Understanding the Dynamics of International Trade*, Sage Publications, New Delhi, Chs. 1, 2 and 11.
- (7) Goswami, Binoy et al., (2018), *Indian Agriculture after the Green Revolution*, Routledge, London.
- (8) Bhalla, G S (2006), "Agricultural Growth and Regional Variations" in R Radhakrishna et al. (eds.), *India in a Globalising World: Some Aspects of Macroeconomy, Agriculture and Poverty*, Academic Foundation, New Delhi, Ch. 11.
- (9) Bhalla, G S and Gurmail Singh (2012), *Economic Liberalisation and Indian Agriculture*, Sage Publications, New Delhi.
- (10) Bhaumik, S. K. (ed.) (2008), *Reforming Indian Agriculture: Towards Employment Generation and Poverty Reduction*, Sage Publications, New Delhi, Introduction and Chapters 1-3.
- (11) Bhaumik, S K & Abdul Rashid (2013), "Production Performance in Indian Agriculture in the Era of Economic Reforms", in S Banerjee & A Chakraborty (eds.), *Development and Sustainability*, Springer, New Delhi.
- (12) Chand, Ramesh (2009), "Farm Incomes in India" in G K Kadekodi and B Viswanathan (eds.), *Agricultural Development, Rural Institutions and Economic Policy*, Oxford University Press, New Delhi, Ch. 4.
- (13) Gulati, Ashok (2010), "Accelerating Agricultural Growth: Moving from farming to Value Chains", in Shankar Acharya and Rakesh Mohan (eds.), *Indian Economy: Performance and Challenges*, Oxford University Press, New Delhi, Ch. 7.
- (14) Mahendra Dev, S (2008), *Inclusive Growth in India*, Oxford University Press, New Delhi, Chs. 2 & 3.
- (15) Mahendra Dev, S (2009), "How to Revive Indian Agriculture?" in S Singh and V R Reddy (eds.), *Changing Contours of Asian Agriculture*, Academic Foundation, New Delhi, Ch. 6.
- (16) Rao, V M and K C Hiranath (2010), "Agricultural Policy Reviews: A Synthesis", in *Agriculture, Food Security, and Rural Development*, Asian Development Bank, Oxford University Press, New Delhi.

Recent journal articles on all above units shall be referred in the classes.

For this course, the prerequisite is Agricultural Economics I

Course Title:	Bihar Economy	Course Code:	ECPG4EC18
Semester:	4 th	Credits:	Five (5)
<i>Unit</i>	<i>Contents</i>	<i>Lecture Hours</i>	
1	Objective of Studying Regional Economics.	1-4	
2	Overall Economic Characteristics of Bihar.	5-8	
3	Growth Scenarios: The State Domestic Product and its Components	9-14	
4	Problems in the Agricultural Sector: Production performance; Regional disparity; Institutional reforms; Technological change; Agricultural finance; Marketing.	15-26	
5	Industrialisation: Problems and prospects; Formal versus informal sectors; Large versus small-scale industries; Rural industrialisation.	27-38	
6	Problems of Service sector.	39-46	
7	Changing Employment and Poverty Scenarios and Human Development.	47-54	
8	Decentralization: Institutional (like panchayati raj) and financial (like municipalities and panchayats).	55-60	

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- (1) Singh, N K & Nicholas Stern, *The New Bihar: Rekindling Governance and Development*, HarperCollins India, 2013.
- (2) Panagariya, Arvind, *India's Tryst with Destiny*, HarperCollins India, 2014.
- (3) Panagariya, Arvind, *India Unlimited: Reclaiming the Lost Glory*, HarperCollins India, 2020.
- (4) Dreze, Jean, *An Uncertain Glory*, Penguin Books Ltd., 2014.
- (5) Banerjee, Abhijit & Esther Duflo, *Good Economics for Hard Times*, Juggernaut Publication, 2019.
- (6) Banerjee, Abhijit & Others, *What the Economy Needs Now*, Juggernaut Publication, 2019.
- (7) Rajan, Raghuram, *The Third Pillar: How Markets and the State Leave the Community Behind*, HarperCollins India, 2019.
- (8) Rajan, Raghuram & Luigi Zingales, *Saving Capitalism from the Capitalism*, HarperCollins India, 2014
- (9) Sharma, Ruchir, *The 10 Rules of Successful Nations*, Penguin/Penguin Random House, 2020.
- (10) Rodgers, Gerry & Others, *The Challenge of Inclusive Development in Rural Bihar*, Manak Publications, 2013.
- (11) Sen Kumar, Indra, *Bihar Untold Growth Story*, Ane Books, 2016.
- (12) Datta, Amrita and Preet Rustagi, *Status of Women in Bihar: Exploring Transformations in Work and Gender Relations*, Institute for Human Development, New Delhi, 2013.
- (13) Sharma, Alakh N, Amrita Datta and Joyita Ghosh, *Development Research in Bihar, 2000-2010: A Compendium*, Institute for Human Development, 2012.
- (14) Himanshu, Praveen Jha and Gerry Rodgers, *The Changing Village in India: Insights from Longitudinal Research*, Oxford University Press, 2016.
- (15) Nathan, Dev and A K Sharma (eds.), *Employment, Social Protection, and Inclusive Growth in South Asia*, South Asia Press, 2017.
- (16) Nathan, Dev and Virginius Xaxa, *Social Exclusion and Adverse Inclusion: Development and Deprivation of Adivasis in India*, Oxford University Press, 2012.
- (17) Kumar, Parmod and Sandip Sarkar, *Economic Reforms and Small Farms: Implications for Production, Marketing and Employment*, Academic Foundation, 2012.
- (18) Haque, T & D N Reddy (eds.), *India: Social Development Report 2018: Rising Inequalities in India*, Oxford University Press, 2019.
- (19) Zakaria, Fareed, *The Lessons for a Post-Pandemic World*, Penguin Random House/Allen Lane, 2020.

Journal articles to be referred in the classes.