

Indian Institute of Space Science and Technology, Thiruvananthapuram.

Department of Humanities

Name of the Course : Development Economics (Core Course, 3 credits)

Course Code : HE 821

Instructor : Dr. C S Shaijumon

Course Objective:

The major objective of the course is to introduce students to the various theories, ideas and policies of development economics and to help a research student to develop his critical ability to apply the theories and ideas to explain the real world cases. The course is about fundamental models used to analyze theoretical and empirical issues in economic growth and development.

Outcome:

On successful completion of the course, the students are expected to acquire a basic understanding of the issues and policy debates on economic growth and development. The course will help the student to apply an analytical framework to understand the important structural characteristics of growth and development and thereby acquire necessary skills in conducting research related to development issues.

Content

Module 1-- Economic growth and development

Indicators of Economic development — Vicious circles of poverty--Circular causation – Structural view of under development –Inequalities in income distribution—Lorenz curve— Gini- coefficient—Inverted U hypothesis - Development gap and the measurement of poverty— capital and technological progress—Rural economic development—(agriculture mainstay of Indian economy—agriculture reform in India rural marketing)—Regional disparities, state, domestic product and Indian plan—Globalization and regional development.—

Module 2—Theories of Economic growth

Classical theories –Marx –Schumpeter-- H-D model – Neo-classical growth theories –Solow -- Meade –Mrs. Robinson . Kaldor –Mirrlees hypothesis—Endogenous theories of growth – Education –Research and Human Capital.

Module 3—Partial Theories of growth

Dual economies –Social dualism–Technological dualism –Geographical and Financial dualism – Lewis theory of development with unlimited supply of labour –Fei-Ranis balanced growth—

Rosinsein Rodan, Nurkse and Lewis –unbalanced growth population trap –Lebientien's view—critical minimum effort—dependency theories of development.

Module 4 – Factors in Economic development

Population and economic development –Dual role of population—Demographic transition – Economic development and population growth—Population growth and Economic development – Human development in India—human resources and economic development—India's occupational structure and economic development—Rural and urban migration –Capital and economic development – Capital controversy – Technical progress and economic development – views of Hicks, Harrod and Solow.

Information technology, capability and India's economic development - population change and economic development; Indian experience—infrastructure and economic development—Decentralized development—natural resources, economic development and environmental degradation—foreign capital, foreign aid and economic development—balanced regional development –prices, price policy and economic growth – economic development and through social opportunity.

Module 5 –Sectoral aspects of development

Role of agriculture in economic development—Trade and economic development—The case of LDCs and deterioration terms of trade -- singer—Prebisch views –Dual gap analysis—WTO and developing economies. Agricultural marketing and warehousing-- food security in India—size of the farms and productive efficiency—inequality of farm income—the pattern of income distribution in India—analyzing India's technological trajectory—(technological progress and economic growth India's trajectory of technological capability acquisition) - Economic planning; strategy for growth—panning experience in developing countries like India-- a transport and technology , science and technology for industrial development , investment in R and D on science and technology—development as freedom-- ends and means of development –poverty as capability deprivation—famines and other crises—inclusive growth--

Reading List

1. Debraj Ray,(1998), Development Economics—Oxford University Press, Calcutta.
2. Behrman. S and T N Sreenivasan, Handbook Of Economics Development , Vol.3 Elsevier Amsterdam.
3. Thirlwall, (1978), Growth and Development (7th Edn), Mac Millan, London.
4. Ghatak .S (2003), An Introduction To Development Economics (4th Den(Routledge, London.

5. Higgin B (1999), Principles of Economic Development Universtal Book Stall, New Delhi.
6. Kindlegerger. C. P. (1958), Economic De Elopement (2nd Edn) Tata Mc Grae Hill , New York.
7. Mer And Roughe, Leading Issues In Economic Development (7nth).
8. Todaro, M.P. (1998), Economic Development, Longman Group Ltd, London.

Additional Reading List

Module 1

1. Myrdal,G (1958) Economic Theory And Underdeveloped Regions, Vora And Com. Publishers Bombay.
2. Todaro,M, (1980), Economic Development In The Third World , (2nd Edn), Longman Group Ltd, London.
3. Furtado,(1964), Development And Under Development University Of California Press, Berkeley.

Module 2

1. Waller Elitis, Classical Therories Of Growth , Tata Mc Graw Hill, Newyork.
2. Adelma L (1978), Theories of Ecnomic Groewtg And Development, Stanford University Press.
3. Hywel Joones , An Intrducion to Theories Economic Growth.
4. Paul M Swezh, The Process Of Capitalist Development
5. Amarya Sen (1978), Growth Economics Selected Readings Pen Guin Books , Engalnd.

Module 3

1. Lewis W A , The Theory Of Economic Gowth , George Allen And Unwin
2. Hirschman A.O (1958), Stategy Of Ecnomic Development, Yale Univertuy Pross , London.
3. Myrdal,G (1958) Economic Theory And Underdeveloped Regions, Vora And Com. Publishers Bombay.
4. Nurkse, (1966), Problems Of Capital Formation In Udcs , Oxford University Press, Bombay.
5. UNDP, Human Development Report.

Module 4

1. Hoover and Cole, Popualtion Growth and Economic Development Princeton.
2. World Bank, World Development Report.

Module 5

1. Schultz, Theodore .W.(1964), Transforming Traditional Agriculture , Yale University Press, London.
2. Johnson H G . Economic Policies Towards Ldcs , Allen Unwin
3. Linder, Trade, And Trade Policy for Development , Praeger.N.

**Name of the Course : Informal Sector In India: A Special Reference To Fisheries Sector
(Core Course, 3 Credits)**

Course Code : HE 822

Instructor : Dr. C S Shaijumon

Course Objective:

Major objective of the course is to give the students an exposure about the informal sector of India with reference to fisheries sector. The course will also discuss about the concept of informal sector and its importance in Indian economy

Outcome:

The students are expected to learn about the depth and breadth of informal sector in Indian economy with special reference to fisheries sector of India. On successful completion of the course, the students will be able to evaluate the informal sector and should be able to analyse its impact in Indian economy

Content

Meaning and scope of informal sector-- identifiable characteristics —formal and informal sector -- India's informal economy – constitution of National Conference of Enterprise on Unorganized Sector – conceptualizing the unorganized economy – sector Vs workers – poverty , vulnerability and informal work status – ensuring minimum conditions of work – role of state and other institution.

Unorganized non-agricultural workers; socio-economic profile (meaning, physical and human capital, labour market entry, incidence of poverty) --Wage workers in non- agricultural sector; meaning , profile of wage working, physical conditions at work place , occupational hazards, health condition and safety measures, hours of work, duration of work weekly holidays m employment contracts, wages and earnings of workers in the unorganized sector.

Women workers in non- agriculture; meaning – conceptualizing women’s work, nature of work participation of woman , conditions of women’s work, casual and regular women workers, -- migrant labour , child labour--Technology and informal sector

Regulations of conditions of unorganized workers in India ; constitutional frame work , legal regulations conditions of work, central laws for unorganized sector workers -- An action programme forth unorganized sector; protective measures for unorganized workers – a package of measure for the marginal and small farmers—measures to improve growth of the non-agricultural sector—measures to improve employability.

History of fisheries – fishery science and its role – fish and fishing- some fundamentals – bio economic need of the fishery (Gorden Schafer model) fish methods and gear – fish aggregating device – coastal Mari culture – fish processing -- preservation and management—technological progress and fishing.

Fisheries sector in India and Kerala – mode of production on the eve of mechanization — technology and production — employment and income – price differentials, growth patterns and consumption changes — crisis and conflicts.

Reference

Jhabvala, renana, Sudarshan, M. Ratna, Unni, Jeemol (ed), (2003), *‘Informal Economy Centrestage’*, Sage Publication, New Delhi.

Breman, Jan (2003), *‘The Loburing Poor in India’*, Oxford university press, New Delhi.

Josi, Chitra (2003), *‘Lost World’*, Permanent block, Delhi.

Behal, P. Rana, Vander linden, Marcel (ed) (2007), *‘India’s Labouring Poor, -- Historical Studies’*, Cambridge university press, New Delhi.

David, Cushing (1979), *‘Fisheries Resources of the Sea and Their Management’*, Oxford university , London.

Cuninighan, Stephen, Dean R Michael, Whitmarsh, David (1985), *‘Fisheris Economics; An Introduction’*, Mansell publication Ltd, London.

Ibrahim, P (1992), *‘Fisheries Development in India’*, classical publishing company, New Delhi.

Srivastava, C.B.L (1985) *‘Fishery Science And Indian Fisheries’*, Industrial Printers, Allahabad.

Additional Reference

Raveendran, G (2005), *Defining the Informed Sector in India, a study on unorganized sector*, NCEUS.

NSSO data, (2006), Informal Sector in India 99-2000, a salient features, round 55th report.

NCEUS report on 2007

NCEUS report on 2005 and 2004.

National Research Council, (1988), 'Fisheris Tehchnology for Developing Countries', national academy, New York.

Economic review 2011 and 2012.

Economic survey 2011 and 2012.

Name of the Course : Quantitative Techniques in Social Science (Core Course, 3 credits)

Course Code : HSEC 12

Instructor : Dr. C S Shaijumon

Course Objective:

This course provides an overview of research methods in the social sciences. It is intended to provide a foundation for an understanding of the major approaches in the social sciences to the collection and analysis of quantitative and qualitative data, and the specification and testing of theories. The course covers the logic of scientific inquiry and various research techniques such as experimentation, scientific sampling, survey research, field methods, archival data, and quantitative analysis that are commonly used by researchers in economics, education, political science, psychology, and sociology. The primary goal of the course is to help students become critical consumers of social science theory and evidence that they are exposed to, especially in the media.

Course Outcome:

By the time the course is complete, students should be able to assess studies that they hear about to determine whether they meet basic criteria in terms of design, data, and interpretation, and identify flaws.. The students will be exposed to: The relationship between theory, hypothesis, data collection, and analysis in the pursuit of social science knowledge. The respective strengths and limitations of quantitative approach to social science research.

Content

Module 1— Nature and Scope

Nature, meaning, scope and methodology of econometrics- simple linear regression model – Assumptions — Estimation (through OLS) — Properties of estimates – Gauss Markov Theorem – normality assumptions –testing hypothesis.

Multiple regression model and General K Variable Linear model- Estimates and testing – Concepts and derivation of R² and adjusted R² – ANOVA and its applications in regression analysis.

Module 2—Problems in Regression Analysis

Issues of regression through origin and scaling and units of measurement –Different functional forms of regression models and their uses – Nature, test, consequence and remedial steps of problems of specification error.

Module 3—Regression with Qualitative Independent Variable

Dummy variable technique—Testing structural stability of regression models, comparing two regression –Interaction effects –seasonality analysis –Piecewise linear regression –regression with dummy dependent variables.

Module 4 -- Econometric Applications

Estimation of demand equations – Measurement of short and long run elasticities – Estimation of production and cost functions. Estimation of macro econometric models.

Module 5 –Research Design and Sampling design

Research problem – Need of Research design – Features – Basic principles of experimental designs – Census and sample survey – Steps in sampling – different types of sample designs – random sampling –

Module 6 – Collection, processing and analysis of data

Collection of primary data – questionnaires – schedules – collection of secondary data – selection of appropriate method for data collection – Case study method – Difference between survey and experiment – Processing operations – problems of processing – Measures of central tendency, dispersion, asymmetry, relationship – correlation

Module 7 – Testing of Hypothesis

Hypothesis – basic concepts – procedure – Important Parametric Tests – Non Parametric Tests – Interpretation – Techniques of interpretation – Research Report

Text Books

1. Gujarati D N (2004), Basic Econometrics, Fourth Edn, Tata Mc Graw Hill, New York.
2. Gujarati D N (2006).Essentials Of Econometrics, Tata Mc Graw Hill New York.
3. Kothari, C R (2002), Research Methodology: Methods & Techniques, Wishwa Prakashan, New Delhi.

References

4. Green W J (2003), Econometric Analysis, Pearson Edn, New Delhi.
5. Klien, Lawrence R (1974), A Text Book of Econometrics, Prentice Hall, New Delhi.
6. Darnel, A C (1994), A Dictionary Of Econometrics Prentice Hall, New Delhi
7. Koutsioyannis ,A (1977), Theory Of Econometrics, Mc Millan, London.
8. Maddala, G.S (1995), Econometrics, Mc Graw Hill, New York.
9. Intrilligator,M. D (1980), Econometric Models , Techniques And Applications , Prentice Hall, New Delhi.
10. Johnstion. J (1991), Econometric Methods, Mc Graw Hill, New York.
11. Krishna, K .L (1997), Econometric Applications in India, Oxford University Press, New Delhi.
12. Mukherjee, Chandan; Howard White and Mare Wuyts(1998), Econometrics, Vrinda Publications, New Delhi.
13. Dominic Salvatore (2005), Theory and Problems of Statistics and Econometrics, Tata Mc Graw Hill, New York.

Name of the Course : Economics of Technological Change, Innovation and Diffusion

(Core Course, 3 credits)

Course Code : HSEC23

Instructor : Dr. C S Shaijumon

Course Objective:

The course aims to give the students a clear perspective about how technological change, innovation and diffusion affect economic development of a country. The course is expected to discuss the theoretical as well as applied aspects of the determinants and consequences of technological innovation, its diffusion in the economic system, innovation strategies etc.

Outcome:

On successful completion of the course, students are expected to have a thorough understanding of the relationship between technological change, innovation, diffusion of technology and

economic development. At the end of the course, the students should be able to analytically explain how technological change, innovation and diffusion of technology influences economic development

Content

Module 1: INTRODUCTION AND OVERVIEW

Historical perspectives of technology and growth - fundamental features and role of innovation and technical change in the contemporary economies - Impact of innovation on growth and development, industrial dynamics, business strategies, and public policies.

Module2: BASIC CONCEPTUAL ISSUES: KNOWLEDGE AND INNOVATION

Innovation in neoclassical models: the production function - Invention, innovation, diffusion - Two views of the innovation process: from the 'linear' to the 'chain-linked' model of innovation. The role of science and users in innovative processes.

Module 3: MARKET STRUCTURE AND INNOVATION: THE NEOCLASSICAL APPROACH

Schumpeterian hypotheses: monopoly or perfect competition? Firm size and innovation. From Arrow's model to game theoretic models: persistence of monopoly, patent races, licensing, and RJVs.

Module 4: THE DIFFUSION OF INNOVATION

Ancient and modern views of innovation diffusion: from epidemic models to adoption models. Spatial diffusion of innovations. Implications for public policy and firm strategy.

Module 5: MEASUREMENT OF TECHNICAL CHANGE

Innovation indicators: advantages and limitations. R&D expenditures, patents, surveys, and bibliometrics. Sources of data on innovative activities. Methods of analysis.

Module 6: INNOVATION AND DIFFUSION IN AGRICULTURE

Gould P. Colman, Innovation and Diffusion in Agriculture, *Agricultural History*, Vol. 42, No. 3 (Jul., 1968), pp. 173-188, Agricultural History Society

David Sunding and David Zilberman, The Agricultural Innovation Process: Research and Technology Adoption in a Changing Agricultural Sector (For the Handbook of Agricultural Economics) University of California at Berkeley

References

Module 1: INTRODUCTION AND OVERVIEW

Fagerberg J. "Innovation: a guide to the literature" in Fagerberg J. Mowery D. Nelson R. (ed) *Handbook of innovation* Oxford University Press 2004

Dosi G., Nelson R. Technological change and industrial dynamics as evolutionary processes *LEM* Pisa 2009/April, also in Hall B. Rosenberg N. *Handbook of the Economics of Innovation* Elsevier 2010

Christopher Freeman and Luc Soete, *The Economics of Industrial Innovation*, London: Pinter, 1997: Chapter 1, pp. 1-25. & OECD, "Science, technology and industry outlook 2000 – Highlights", Paris, 2001
(http://www.oecd.org/dsti/sti/s_t/prod/outlook_2000.htm)

Module2: BASIC CONCEPTUAL ISSUES: KNOWLEDGE AND INNOVATION

Stephen Kline and Nathan Rosenberg, "An overview of innovation", in Ralph Landau and Nathan Rosenberg (Eds.), *The Positive Sum Strategy*, National Academy Press, Washington D.C., 1986, pp. 275-305.

Nathan Rosenberg, "How exogenous is science?", in *Inside the Black Box*, Cambridge University Press, Cambridge, 1982, pp. 141-159.

Eric Von Hippel, *The Sources of Innovation*, Oxford: Oxford University Press, 1988: Chap. 2, pp. 11-27.

Franco Malerba, "Learning by firms and incremental technical change", *Economic Journal*, July 1992, pp. 845-59.

Richard Nelson and Sidney Winter, *An Evolutionary Theory of Economic Change*, Harvard University Press, 1982: Chapters 4 and 5, pp. 72-136.

Module 3: MARKET STRUCTURE AND INNOVATION: THE NEOCLASSICAL APPROACH

Jean Tirole, *The Theory of Industrial Organisation*, MIT Press, Chapter 10, pp. 389-94, 399-401.

Joseph Schumpeter, *The Theory of Economic Development*, Harvard University Press, Cambridge MA, 1934, Chapters 2 and 4.

Joseph Schumpeter, *Capitalism, Socialism and Democracy*, New York: Harper and Row, 1942, Chapter 12.

Kenneth Arrow, "Economic welfare and the allocation of resources for invention", in Richard Nelson (Ed.) *The Rate and Direction of Inventive Activity*, Princeton: Princeton University Press, 1962, pp. 609-25.

Module 4: THE DIFFUSION OF INNOVATION

Francesco Lissoni and Stan Metcalfe, "Diffusion of Innovation Ancient and Modern: A Review of the Main Themes", in Mark Dodgson and Roy Rothwell (Eds.) *The Handbook of Industrial Innovation*, Edward Elgar, Aldershot, 1994, pp. 106-141.

Geroski P. , 2000. Models of technology diffusion, *Research Policy* vol. 29(4-5)

Greve H. Fast and expensive: the diffusion of a disappointing innovation *Strategic Management Journal* 2011 32

Module 5: MEASUREMENT OF TECHNICAL CHANGE

Pari Patel and Keith Pavitt, "Patterns of Technological Activities: Their Measurement and Interpretations", in Paul Stoneman (Ed.) *Handbook of Economics of Innovation and Technological Change*, Blackwell, Oxford, 1995, pp. 14-51.

Module 6: INNOVATION AND DIFFUSION IN AGRICULTURE

David Sunding and David Zilberman, *The Agricultural Innovation Process: Research and Technology Adoption in a Changing Agricultural Sector* (For the Handbook of Agricultural Economics) University of California at Berkeley