**Course syllabus for Master Program In Agribusiness and Value Chain Management (Regular)**

### Year I ; Semester 1

### 1. Managerial Economics in Agribusiness

Course Code: ABVM 511

Credit Hour: 3

**Course Description**

The course covers fundamental principles and tools of managerial economics, its nature, objectives and uses, and its relationships with economic theory; demand and supply applications together with estimation and forecasting techniques; production theory and profit maximization; cost theory and optimum input allocation for cost minimization; market structures and pricing under different market models; externalities, public goods, information asymmetry, market failure and the role of government.

**Course Objectives**

The general objective of this course is to provide students with a basic methods and principles of economic analysis and analytical tools that can be used in managerial decision making processes within various organizational settings such as business firms, not-for-profit organizations and government agencies. It enables students to identify problems and opportunities, examine alternative courses of actions, and make optimal choices.

After completing this course, students will be able to:

* Apply economic theory and methods to business and administrative decision making;
* Explain how prices get determined in markets, how market participants benefit in the form of consumer surplus and producer surplus, and what are the consequences of government intervention;
* Measure the responsiveness (Elasticities) of consumers' demand to changes in the different determinants of demand and the importance of these elasticities in decision making;
* Explain the different costs of production and how they affect short run and long run decisions, describe economies and diseconomies of scale, and discuss break even analysis;
* Apply how game theory can be used in explaining business decisions;
* Explain what an externality, public good, information asymmetry and market failure; and the measures to be taken by government.

**Course Content**

1. **Introduction: The Fundamentals of Managerial Economics**
	1. What is economics and managerial economics
	2. The roles of managerial economics
	3. Firms and Managerial Objectives
	4. Managerial Tools of Economic Analysis
	5. Principles of Managerial Economics and managerial decision making
2. **Applications of Demand and Supply Theories**
	1. Demand and supply theories
	2. Price Ceilings and Price Floors
	3. Changes in Demand and Supply
	4. Market Equilibrium
	5. Demand Sensitivity Analysis: Elasticity
	6. Consumer and producer surplus
	7. Price Elasticity, Total Revenue and Marginal Revenue
	8. Determinants of Price Elasticity
	9. Elasticity for Non-linear Demand Functions
	10. Demand Estimation and Forecasting using Regression Analysis
3. **Production and Costs in Managerial Decision Making**
	1. The Technology of Production and its property
	2. Profit-Maximization and optimal Input choice
	3. Costs Minimization & Decision Making: Level of Production & Mix of Resources
	4. Cost and benefit analysis
	5. Long-run Costs, Plant size, and Economies of Scale
	6. Empirical Analysis and Estimation of Production and Costs
4. **Market Structures**
	1. The Nature of Industry
	2. Perfect Competition
	3. Pure Monopolies
	4. Monopolistic Competition
	5. Oligopolies
5. **Game Theory and Strategy**
	1. Simultaneous Moves
	2. Repeated Games
	3. Credibility
	4. Collusion.
6. **Price and Pricing Strategies**
	1. Meaning of Price to Consumers and its Economic Role
	2. Pricing Objectives/Strategies
	3. Pricing Methods
	4. Price control: effect of government intervention
	5. Demand Forecasting
	6. Components of Time Series Data
	7. Forecasting Methods
7. **Information asymmetry, Externalities, public goods, and the role of Governments**
	1. Externalities
	2. Public Goods
	3. The Role of Government in the Marketplace
	4. Information asymmetry and Market failure

**Mode of Delivery**

This course will rely on a variety of learning methods. Instructor facilitated learning experiences and lectures will be combined to students-led discussions and presentations. Some specific methods include lectures, reading assignments, group discussions, and case studies use real life case from the business.

**Assessment Methods**

**Continuous Assessment**: There will be two case studies about consumer analysis in marketing. Continuous assessment should account 50% of the evaluation. **Final Exam**: There will be one final exam (50%). The exam covers material from class and the text as well as any readings by the students. The exam will generally consist of essay questions and problems that need analytical skills as well as other relevant types as deemed necessary.

**References**

Baye, M. (2008).Study guide for use with Managerial Economics and Business Strategy. 6th Edition. Boston: McGraw-Hill Irwin

Baye, M. (2010) Managerial Economics and Business Strategy.6th Edition. Boston: McGraw-Hill Irwin

Brickley, J., Smith, C., and Jerold, Z. (2007) Managerial Economics and Organizational Architecture, McGraw Hill – Irwin, 2007, 4th Edition.

Edwin, M. (1996) Managerial Economics: Theory, Applications and cases. W.W. Norton and company New York. 3rd edition

Hirschey, M. (2003) Managerial Economics, 10th edition, Thomson/South-Western College Publishing

James, M. G. (1989) Managerial Economics. Allyn and bacon publishers.Massachusets

Mansfield Edwin, (1996) Managerial Economics: Theory, Applications and cases. W.W. Norton and company New York. 3rd edition,

Robert S.P. and Daniel L.R. (1996).Microeconomics.3rd edition. Prentice-Hall international inc.

Salvatore, D (1989). Managerial economics, McGraw Hill, 3rd edition

### 2. Agricultural Marketing and Price Analysis

Course code: ABVM 521

Credit hour: 3

**Course Description**

The course generally covers the basics of agricultural marketing, market performance analysis, spatial and inter-temporal market integration, demand for agricultural products, supply response and commercialization.

**Course Objective**

The general objective of this course is to equip students with knowledge, skill and attitude that enable them to support the efforts to produce market oriented agricultural goods for sustainable profit and consumer satisfaction; it also provides students with relevant methodological tools of agricultural market and price analysis.

At the end of this course, learners will be able to:

* Identify the economic roles of prices and markets
* Characterize properties of agricultural products and prices
* Conceptualize the basic methodologies of agricultural market and price analysis
* Analyze the structure of agricultural markets
* Investigate the conduct of agricultural markets
* Evaluate the efficiency of agricultural markets and channels
* Identify methods of price decomposition
* Measure the spatial integration of agricultural markets
* Identify approaches and models of demand analysis
* Estimate complete demand systems for agricultural products
* Assess the distinction between revealed and stated preferences
* Analyze the market orientation and commercial behavior of agricultural producers
* Distinguish the various methods of supply response in agriculture

**1: Introduction**

* Definition
* Economic Roles of Markets and Prices
* Characteristics of Agricultural Products and Prices
* Approaches and Methodologies to the study of Agricultural Marketing
	+ Approaches
	+ Alternative market analysis methodologies
	+ Marketing Functions and Stages
* Agricultural Marketing Information System

**2: Market Performance Analysis**

* Market Structure
	+ Features of market structure
	+ Measuring market and industrial concentration
* Market Conduct
* Market Performance
* Basics of Marketing Channels
* Factors of Channel Performance
* Market Outlet Choices

**3: Spatial and Inter-temporal Market Integration**

* Methods of Price Decomposition
* Measuring Price Instability and Seasonality
	+ Index of price instability
	+ Seasonal price analysis
* Spatial Market Integration
	+ Factors of spatial market integration
	+ Measures of spatial market integration
* Spatial Equilibrium Models (SEM)
	+ Conditions for spatial equilibrium
	+ Geometrical approach to simple SEM analysis
	+ Mathematical models to SEM analysis
	+ Welfare benefits without trade
	+ Welfare benefits with trade

**4: Empirical Demand Analysis**

* Objectives of Demand Analysis
* Alternative Approaches to Demand Analysis
* The Basic Model of Demand Analysis
* Estimation of Engel Functions and Income Elasticities
* Estimation of Price Elasticities
* Estimation of Complete Demand Systems
	+ The Linear expenditure system (LES)
	+ The Almost Ideal Demand System
	+ The Generalized Almost Ideal Demand System (GAIDS)
	+ Estimation problems
	+ Effects of household characteristics

**5: Revealed and Stated Preference Analyses**

* Revealed preference and Hedonic Pricing
* Stated Preference Analysis
	+ The basics of CV
	+ Censored models
	+ Single-bounded binary choice CV
	+ Double-bounded binary CV
	+ Structure of economic valuation
	+ Components of total economic value
	+ Choice of valuation techniques

**6: Agricultural Supply Response and Commercialization**

* Market Orientation
* Market Participation and Commercialization
* Net Market Positions and Commercial Behavior
* Alternative Approaches to the Measurement of Supply Response
* Nerlovian Models of Supply Response
* The Rational Expectations Approach to Supply Response
	+ General model
	+ Estimating supply response
* Gender deferential in market participation

**Mode of Course Delivery**

This course will be delivered through lectures, seminar papers and presentations, case studies and presentations, assignments, brainstorming sessions, and crossover discussions.

**Assessment Methods**

Continuous assessment will be employed. The assessment will be based on active participation in discussion of case-based tasks, presentations, seminars, assignments, and will account for at least 50% of the evaluation. The remaining goes for final exam.

**References**

Abbot, J., (ed), 1993. *Agricultural and Food Marketing in Developing Countries: Selected Readings*. C.A.B. International, UK.

Amarchand, D., and B. Varadharajan, 2000.*A Text Book of Marketing,*Konark Publishers, New Delhi.

Bruce E. Winston, 1997. *Principles of Marketing: A Text Book*, Regent University, School of Business.

Crawford, L.M., 1997. Agricultural and Food Marketing Management. Marketing and Agribusiness Texts 2, FAO, Rome.

Dixie, G., 2005. *Horticultural Marketing: Marketing Extension Guide 5*, Food and Agriculture Organization of the United Nations, 2005.

Ferris, J. N., 2005. *Agricultural Prices and Commodity Market Analysis*. Michigan State University Press, Michigan.

Goodwin, J.W., 1994. *Agricultural Price Analysis and Forecasting*, John and Sons, USA and Canada.J. Brian Hardaker, Ruud B.M. Huirne and Jock R. Anderson, 1997, Copying with Risk in Agriculture, CAB International, Wallingford, UK.

Harrigan, J., R. Loader, and C. Thirtle, 1992.*Agricultural Price Policy: Government and Market*, Training Material for Agricultural Planning 31, FAO, Rome

Harriss-White, B., (ed), 1999. *Agricultural Markets from Theory to Practice: Field Experience in Developing Countries*, MacMillan Press Ltd, Great Britain.

Kohl, R.L and J.N. Uhl, 2011. Marketing of Agricultural Products.Prentice hall, tenth edition.

Kotler, P., 2010. *Marketing Management: Analysis, Planning, Implementation, and control*, 109th edition, Prentice-Hall, Inc., USA.

Scott, G.J., (ed) 1995. *Prices, Products, and People: Analyzing Agricultural Markets in Developing Countries*.Lynne Rienner Publishers, Inc., London.

Slater, C.J., 1993, *Market channel coordination and economic development* In: Agricultural and Food Marketing in Developing Countries: Selected Readings, C.I.B, UK.

Tomek, W.G., and K.L. Robinson 1990.*Agricultural Product Prices*, third edition. Cornell University Press, London

### 3. Value Chain Analysis and Development

Course Code: ABVM 531

Credit Hours: 3

**Course Description**

The course will provide learners with grounded knowledge and skills of value chains analysis and development in agriculture; enabling environment for value chain development, chain governance and business ethics.

**Course Objective**

This course aims to equip learners with concepts and principles of value chain to diagnose sustainable value chains and identify the best intervention strategies. It also aims at discerning the functions and relationships among actors to build robust value chain systems.

After completion of this course, students will be able to:

* Examine the underlying assumptions, principles, characteristics and importance of the value chain approach
* Distinguish between the various approaches in identifying the challenges and opportunities for value chain development.
* Identify value-adding activities in the chain.
* Analyse and map commodity value chain
* Apply different value chain approaches and principles for the improvement of the chain
* Evaluate chain governance to facilitate chain formation
* Identify the critical/leverage points among the constraints in value chain development
* Identify active, innovative and leading change agents in value chain.
* Develop participatory approach for value chain development.
* Develop intervention strategies for addressing identified constraints and utilize prevailing opportunities,
* Monitor and evaluate the value chain process.
* Assure quality and safety along the value chain
* Explain the importance of policy issues in the value chain approach

**Course Content**

1. The Value Chain Approach: Concepts, Importance, and Principles
* Concepts of Value Chain
* Global Value Chain
* Underlying Assumptions and Importance of Value Chain Approach
* Principles of Value Chain Approach in Agriculture
* Characteristics of Value Chain Approach
* Dimensions of Value Chain
1. Value Chain Analysis
* Principles and Criteria in Selecting a Value Chain to Upgrade
* Steps in Value Chain Analysis
* Horizontal and Vertical Linkages in the Value Chain Concept
* Value chain Performance & metrics
* Logistics in value chain
* Gender differentials in Value Chain Analysis
1. Value Chain Development
* Approaches to Identify Challenges and Opportunities in the Value Chain
* Challenges in Value Chain Development
* Opportunities for Value Chain Development
* Steps in Value Chain Development
* Identifying Leverage Points from Constraints and Opportunities
* Chain Formation, Networks, Contracts, Relationships and Strategies
* Value Chain Upgrading
* Gender Roles in Value Chain Development
* Monitoring and Evaluation
1. Enabling Environment for Value Chain Development
* Frameworks in Value Chain Development
* Business Environment & Policy Assistance
* Enabling Institutional Support for Chain Development
* Improving Access to Business Development Services
* Specific Direct Interventions and Program
* Cluster and Network Development
* Support to Small and Medium Agro-Enterprises
1. Value Chain Governance and Business Ethics
* Chain Governance
* Social and Environmental Standards
* Safety and Quality Assurance Along the Value Chain
* Business Law and Ethics

**Mode of Course Delivery**

The teaching learning process of the course will mainly depend on lectures, presentations, discussions and group work to enhance student centeredness and competence. The instructor is expected to use case studies, simulations, videos to support practical learning and contribution of the students. Learners will be given a scenario on existing value chain so that they will develop value chain by identifying best strategies, process, and environment. Moreover, learners will be asked to form different groups and act as different actors within the value chain, and practice the role of facilitator and negotiator.

**Assessment Method**

Continuous Assessment (Assignment-scenario analysis, tests, presentations...) accounts for at least 50% of the evaluation, and the remaining is final exam.

**References**

Alberta. 2004. Value Chain Guide Book: A process for Value Chain Development. AFCA, Edmonton.

Alberta. 2002. Value Chain Hand Book: New Strategies to create more rewarding positions in the market place. AFCA, Edmonton.

Altenburg, T., 2006. The Rise of Value Chain Governance and its Implications for UNIDO’s

 Development Policy, presentation on behalf of the German Development Institute, Bonn.

Danida, 2010.Gender and Value Chain Development, the Danish Institute for international studies (DIIS).Strandgade 56, 1401 Copenhagen K, Denmark.

Gherzi research, 2005. Value Chain Analysis and Strategy Outline for Textile and Garment

Industry, report prepared on behalf of UNIDO Investment and Technology Promotion Branch, Vienna, Austria, 2005.

Hardwick, T. and John K. 2010.Quantitative Value Chain Analysis: An Application to Malawi. The World Bank Policy Research Working Paper 5242.

John H. 2005. Shaping Value Chains for Development: Global Value Chains in Agribusiness.

 Eschborn, GTZ.

John, H. and Hubert S. 2001.Governance in Global Value Chains.IDS Bulletin 32.3, 2001.Institute of Development Studies.

Maker Associates Ltd. 2006. Value Chain Research Methodologies: VCD 2006 .

Matthias L. H. and Tapera J. M. 2009.Value Chain Development for Decent Work: A guide for development practitioners, government and private sector initiatives.Geneva, International Labour Office.

Sergio G. Lazzarini1 Fabio R. Chadda & Michael L. Cook, 2001. Integrating supply chain and network analyses: The study of net chains. Chain and network science (2001:7).

[**www.acdivoca.org**](http://www.acdivoca.org): Value Chain Approach to Economic Development

### 4. Crop Value Chain Management

Course Code: ABVM 512

Credit Hours: 3

**Course Description**

This course is designed to address:Principles of crop value addition and supply chain development, Pre-and postharvest management of horticultural and field crops, Major causes of pre- and postharvest losses of horticultural and field crops, Characteristics of crop produces in relation to pre- and postharvest losses of horticultural and field crops, Postharvest handling systems, Processing, preservation, and storage mechanisms of horticultural crops, Processing and storage of field crops, Value addition in horticultural and field crops, Storage, processing, fortification, packaging, Economic feasibility, social acceptability and environmental friendliness of processing, preservation, fortification and storage of horticultural and field crops, Safety and quality control; national and international safety and quality standards; logistics, storage and distribution, Mapping of value chain in major horticultural and field crops, and The role of women in pre- and postharvest management, processing and preservation of major crops.

**Course Objectives**

After completing this course students will be able to:

* Describe pre-and postharvest factors that affect production of horticultural and field crops and their management options
* Describe structural, physiological and bio-chemical changes that take place in crop produces
* Assess and estimate pre- and postharvest losses
* Identify economically feasible pre- and postharvest operational systems
* Monitor the implementation of safety measures and quality assurance procedures in harvesting, transporting, storage, grading and standardization and marketing of crop products at national and international levels.
* Apply basic principles of processing, fortification, preservation, packaging and value addition of crop produces
* Assess the economic feasibility, social acceptability and environmental friendliness of processing, preservation, fortification and storage of crop produce
* Apply national and international safety and quality standards during production, processing, storage and distribution of crop products
* Analyze the role of women in pre- and postharvest management, processing and preservation of major crops.

**Course Content**

**1: Introduction**

1.1. Principles of crop value addition and supply chain development

1.2. Business oriented crop production systems

1.3. Basic concepts of value addition and supply chain

1.4. Economic benefits of crop value addition

**2: Factors Affecting Production and Loss of Crop Produces**

2.1. Pre-harvest factors

2.1.1. Environmental factors – (biotic and abiotic)

2.1.2. Agricultural inputs – (variety, agrochemicals, fertilizers)

2.1.3. Management practices – (site selection, land preparation, agronomic practices)

2.2. Postharvest factors

2.1.1. Time of harvesting

2.1.2. Method of harvesting

2.3. Importance of supply and value chain development and mapping in plant produces

**3: Value Addition & Marketing of Fruits, Vegetable, Root & Tubers, Mushrooms etc.**

3.1. Specific pre- and postharvest management requirements

3. 2. Grading

3.3. Bio-fortification

3.4. Preservation

3.5. Processing

3.6. Marketing of value added commodities

**4: Value Addition and Marketing ofOrnamental Plants**

4.1. Handling of Cut Flowers, Fillers, Rooted Cuttings, Potted Plants etc.

4.2. Plant growth regulators and preservatives in value addition of ornamental plants

4.3. Packaging of ornamental plants

4.4. Storage and transportation of ornamental plants

4.5. Marketing of ornamental plants

**5: Value Addition and Marketing of Coffee and Tea**

5.1. Pre-harvest management practices and value addition

5.2. Postharvest management practices and value addition

5.2.1. Processing

5.2.2. Grading

5.2.3. Packaging

5.2.4. Marketing

**6: Value Addition in Field Crops**

6.1. Cereals

6.2. Pulses

6.3. Oil crops

6.4. Industrial crops (fiber crops, sugar crops and stimulant crops)

**7: Value Addition and Marketing of Non-timber Forest Products**

7.1. Frankincense

7.2. Resin

7.3. Volatile products

**8: Value Addition and Marketing of Herbs and Spices --**

8.1. Herbs - (Basil, rosemary, mint etc.)

8.2. Spices – (Ginger, Turmeric, Cardamon, Black pepper, Kororima, cumin, etc.)

**9: Safety and Products Quality**

9.1. Pre- and postharvest safety in crop/plant products

9.2. National and international quality and safety standards

9.3. National and international quality standards

9.4. Quality assurance and accreditation

**10: Gender roles in crop value chains**

10.1. Pre-harvest management practices

10.2. Postharvest management practices

10.3. Marketing of crop produces

**Method of Delivery**

Interactive lectures, group discussions and presentations, term paper, field and company visits: students will visit crop farms and processing companies and identify the possible loss types, factors affecting product quality, post-harvest handling methods by chain actors.

**Assessment Methods**

Students will be assessed on continuous bases and summative exam. The continuous assessment consists of term paper writing, presentation, tests, and field reports. The minimum total weight for the elements in continuous assessment is 50%. The rest will be covered by final exam.

**References**

Brennan, J. G., 2006.Food Processing Handbook.Wiley VCH Weinheim, Germany.

Chakraverty, A., Mujumdar, A. S., Raghavan, G. S. V. and Ramaswamy, H. S., 2003.Handbook of Post-harvest Technology –Cereals, Fruits, Vegetables, Tea and Spices, Marcel Dekker Ink. NY.

Florkowiski, W. J., Shewfelt, R., Brueckner, B. and Prussia, S. E., 2009. Post-harvest Handling A Systems Approach, 2nd ed. Elsivier Ink., New York, USA.

Simson, S. P., and Straus, M. C., 2010.Post-harvest Technology of Horticultural Crops, Oxford Book Company, New Delhi.

Chakraverty, A., Mujumdar, A.S., VijayaRaghavan, G. S., Ramaswamy, H. S. 2003. Handbook of Postharvest Technology Cereals, Fruits, Vegetables, Tea, and Spices Marcel Dekker, Inc.

Siddiq, M., Ahmed, J., Lobo, M. G., Ozadali, F. 2012. Tropical and Subtropical Fruits Postharvest Physiology, Processing and Packaging. John Wiley & Sons, Inc.

Thompson A.K. 2015. Fruit and Vegetables Harvesting, Handling and Storage,*Volume 1.*Introduction and Fruit, *Volume 2* ***Vegetables, Mushrooms, Herbs.***3rd Ed., JohnWiley& Sons, Ltd

<http://edepot.wur.nl/199075>

[http://www.beneluxshs.eu/wp](http://www.beneluxshs.eu/wpcontent/uploads/2008/10/vandervorst_globalsourcing23november2007handout.pdf)

[content/uploads/2008/10/vandervorst\_globalsourcing23november2007handout.pdf](http://www.beneluxshs.eu/wpcontent/uploads/2008/10/vandervorst_globalsourcing23november2007handout.pdf)

<http://ageconsearch.umn.edu/bitstream/121848/2/van%20der%20Vorst-ok.pdf>

<http://informs-sim.org/wsc05papers/204.pdf>

### 5. Quantitative Techniques and Applied Econometrics

Course Code: ABVM 551

Credit Hours: 4

**Course Description**

The classical multiple regression model; functional forms; specification analysis (specification errors, non-normality, Heteroskedactity, Autocorrelation, Multicollinearity and outliers ) and model selections; the generalized regression model; maximum likelihood, simultaneous equation methods; econometric models for limited dependent variables; introductory time series regression (stationary time series models; modeling economic time series; trends and volatility; testing for trends and unit roots; cointegration and error- correction models). Each method discussed in the course should be demonstrated with appropriate statistical packages for econometric analysis (SPSS, STATA, EVIEWS…).

**Course Objective**s

After completing this course, students will be able to?

* Formulate econometric models in an empirically testable form
* Estimate and test econometric relationships with observed data
* Apply econometric tools for prediction and policy decisions
* Analyze and interpret quantitative socioeconomic data
* Assess cause and effect relationship of socioeconomics variables

**Course Content**

1. The classical/ordinary multiple regression model
	1. Review of simple linear regression and correlation
	2. Assumptions of the classical least squares
	3. The matrix approach to regression analysis
	4. Regression equation with two independent variables
	5. Regression equations with more than two independent variables
	6. Tests of hypothesis about regression equation
	7. Data analysis with relevant software/practice
2. Functional forms
	1. Deviations from linearity
	2. Selecting appropriate functional forms
	3. Different methods of linearizing equations
3. Model specification analysis
	1. specification errors
	2. non-normality
	3. Heteroskedactity
	4. Autocorrelation
	5. Multicollinearity
	6. Outliers
	7. Data analysis with relevant software/practice
4. The generalized regression model (GLM) with Data analysis with relevant software/practice
5. The maximum likelihood Estimation (MLE) method with Data analysis with relevant software/practice
6. Econometric models for limited dependent variables
	1. Logit models
	2. Probit models
	3. Multinomial logit, and probit models
	4. Tobit and selection models
	5. Data analysis with relevant software/practice
7. Simultaneous equations methods
	1. The simultaneous equation problems
	2. Types of variables in simultaneous equation models
	3. Identification problems
	4. Solutions to simultaneous equation problems
	5. Data analysis with relevant software/practice
8. Introductory time series regression
	1. Components of time series
	2. Stationarity
	3. Trends and volatility
	4. Fitting autogressive models
	5. Testing for trends and unit roots
	6. Co-integration and error correction models
	7. Data analysis with relevant software/practice

**Mode of delivery**

Lecture, practical lab sessions, presentations

**Mode of assessment**: Continuous assessment (assignments, lab practices and presentations) out of 50% and final written examination (50%)

**References**

Verbeek M. (2004): A Guide to Modern Econometrics. 2nd edition.*Erasmus University Rotterdam*

Gujarati D.N. (2004): Basic Econometrics. 4th ed. *The McGraw-Hill.*

Wooldridge, J.M. (2009). Introductory Econometrics.4th edition, South-Western.

Cameron A. C. &Trivedi P. K. (2005): Microeconometrics Methods and Application. Cambridge University Press, New York

Cameron A. C. &Trivedi P. K. (2009): Micro econometrics Using Stata. Stata Press Publication.Stata Corp LP. College Station. Texas

Greene, W.H. (2008). Econometric Analysis.6th edition, Prentice-Hall.

Greene W.H and Hensher D.A (2010): Modelling ordered Choices. Cambridge University Press