

BSc Ag Econ. (Hons.) Curriculum

List of courses

Departments	Course No.	Title of the course	Credit hours
Agricultural Economics	AE111	Principles of Economics	3
	AE115	State and Government	2
	AE 121	Public Administration and Political History of Bangladesh	2
	AE125	Microeconomics-I	3
	AE211	Microeconomics-II	3
	AE213	Macroeconomics-I	3
	AE221	Mathematical Economics	3
	AE223	Macroeconomics-II	3
	AE225, AE 226	Production Economics-I	3+1
	AE 311, AE 312	Farm Management-I	3+1
	AE 323	Economy of Bangladesh	3
	AE 411	Economic Growth and Development	3
	AE-421	Environmental Economics	3
	AE 423, AE 424	Farm Management -II	3+1
	AE 413, AE 414	Production Economic -II	2+1
Total		42+4	
Agricultural Finance	AF121	Money and Banking	3
	AF213	Public Finance	3
	AF221, AF 222	Agricultural Finance-I	3+1
	AF 311	International Economics	3
	AF 321	Agricultural Policy and Planning	3
	AF411, AF412	Land Resource Economics	3+1
	AF 421	Financial Management	3
	Total		27+2
Agricultural Statistics	STAT 123, STAT 124	Descriptive Statistics	3+1
	STAT 227, STAT 228	Inferential Statistics	3+1
	STAT 311, STAT 312	Regression Analysis	3+1
	STAT 411/ STAT 413	Economic Statistics/Econometrics	2
	STAT 412/ STAT 414	Economic Statistics/Econometrics	1
	Total		12+3
Agribusiness and Marketing	AM211	Management Accounting	3
	AM 221	Principles of Marketing	3
	AM 223	Business Principles and Entrepreneurship Development	2
	AM 311	Co-operation Theory and Practices	2
	AM 313, AM 314	Agricultural Price Analysis	3+1
	AM 321, AM322	Institutional Economics and Rural Development	3+1
	AM 323, AM 324	Agricultural Marketing	3+1
	AM 411, AM 412	Introduction to Agribusiness	3+1
	AM 421, AM 422	Research Methods and Agricultural Economics	3+1
	Total		25+5
Rural Sociology	RS111	Principles Sociology	3
	RS 211, RS212	Rural Sociology	2+1
	Total		5+1

Collateral courses

Departments	Course No.	Title of the course	Credit hours
Department of Agronomy	Agron119, Agron 120	Agronomy	2+1
Department of Animal Science	AS113, AS114	Elements of Animal Science	2+1
Department of Fisheries Biology and Genetics	FBG113	Elements of Fisheries	3
Department of Language	LAN111	English Language	2
Department of Horticulture	Hort123, Hort 124	Elements of Crops Science II (Horticultural Crops)	2+1
Department of Farm Power and Machinery	FPM127, FPM 128	Elements of Agricultural Engendering	2+1
Department of Computer Science and Mathematics	CSM 391, CSM 392	Computer Application in Social Science	2+2
Department of Agricultural Extension Education	AgEst 323	Agricultural Extension	3
Total			18+6

Core Courses =126 Credits

Collateral courses =24 Credits

Total = 150 Credits

BSc. Ag. Econ. Curriculum

Curricular Layout for B.Sc.Ag. Econ. (Hons.) Degree

Level-I, Semester-I				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
Agron119	Agronomy	2	-	2
Agron120	Agronomy	-	1	1
AS113	Elements of Animal Science	2	-	2
AS114	Elements of Animal Science	-	1	1
FBG113	Elements of Fisheries	3	-	3
AE 111	Principles of Economics	3	-	3
AE 115	State and Government	2	-	2
RS 111	Principles of Sociology	3	-	3
LAN 111	English Language	2	-	2
	Total Course-9, Total Credit hours:	17	2	19

Level-I, Semester-2				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
Hort123	Elements of Crop Science-II (Horticultural Crops)	2	-	2
Hort124	Elements of Crop Science-II (Horticultural Crops)	-	1	1
FPM127	Elements of Agricultural Engineering	2	-	2
FPM128	Elements of Agricultural Engineering	-	1	1
AE121	Public Administration & Political History of Bangladesh	2	-	2
AF121	Money and Banking	3	-	3
Stat123	Descriptive Statistics	3	-	3
Stat124	Descriptive Statistics	-	1	1
AE125	Microeconomics-I	3	-	3
	Total Course-9, Total Credit hours :	15	3	18

Level-2, Semester-I				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
Stat217	Inferential Statistics	3	-	3
Stat218	Inferential Statistics	-	1	1
AM 211	Management Accounting	3	-	3
AE 211	Microeconomics-II	3	-	3
AE 213	Macroeconomics-I	3	-	3
AF 213	Public Finance	3	-	3
RS211	Rural Sociology	2	-	2
RS212	Rural Sociology	-	1	1
	Total Course-8, Total Credit hours :	17	2	19

Level-2, Semester-2				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
AF221	Agricultural Finance-I	3	-	3
AF222	Agricultural Finance-I	-	1	1

AE 221	Mathematical Economics	3	-	3
AE 223	Macro economics-II	3	-	3
AE 225	Production Economics-I	3	-	3
AE 226	Production Economics-I	-	1	1
AM 221	Principles of Marketing	3	-	3
AM 223	Business Principles and Entrepreneurship Development	2	-	2
	Total Course-8, Total Credit hours :	17	2	19

Level-3, Semester-1				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
AF 311	International Economics	3	-	3
AM 311	Cooperation in Theory and Practice	2	-	2
AE 311	Farm Management –I	3	-	3
AE 312	Farm Management –I	-	1	1
Stat 311	Regression Analysis	3	-	3
Stat 312	Regression Analysis	-	1	1
AM 313	Agricultural Price Analysis	3	-	3
AM 314	Agricultural Price Analysis	-	1	1
	Total Course-8, Total Credit hours:	14	3	17

Level-3, Semester-2				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
CSM 391	Computer Applications in Social Science	2	-	2
CSM 392	Computer Applications in Social Science	-	2	2
AgExt.323	Agricultural Extension	3	-	3
AM 321	Institutional Economics & Rural Development	3	-	3
AM 322	Institutional Economics & Rural Development	-	1	1
AF 321	Agricultural Policy and Planning	3	-	3
AE323	Economy of Bangladesh	3	-	3
AM323	Agricultural Marketing	3	-	3
AM324	Agricultural Marketing	-	1	1
	Total Course-9, Total Credit hours :	17	4	21

Level-4, Semester-I				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
AF 411	Land Resource Economics	3	-	3
AF 412	Land Resource Economics	-	1	1
AM 411	Introduction to Agribusiness	3	-	3
AM 412	Introduction to Agribusiness	-	1	1
AE 411	Economic Growth and Development	3	-	3
AE413	Production Economics II	2	-	2
AE414	Production Economics II	-	1	1
Stat411/ Stat 413	Economic Statistics/ Econometrics	2	-	2
Stat412/	Economic Statistics/	-	1	1

Stat 414	Econometrics			
	Electives	3	-	3
	Total Course-10, Total Credit hours :	16	4	20

Level-4, Semester-2				
Course No.	Course title	Credit hours		
		Theory	Practical	Total
AE 421	Environmental Economics	3	-	3
AF 421	Financial Management	3	-	3
AM 421	Research Methods in Agricultural Economics	3	-	3
AM 422	Research Methods in Agricultural Economics	-	1	1
AE423	Farm Management II	3	-	3
AE424	Farm Management II	-	1	1
	Electives	3	-	3
	Total Course-7, Total Credit hours:	15	2	17

Total credit hours: Theory + Practical = (128+22) = 150

Elective courses for level (Year)-4, Semester-1			
Course No.	Course title	Theor y	Practical
AM413	Legal Environment of Business	3	-
AF413	Agricultural Finance-II	3	-
AM415	Consumer Behaviour	3	-
RS411	Social Structure of Bangladesh	3	-

Elective courses for level (Year)-4, Semester-2			
Course No.	Course title	Theor y	Practical
AM423	Agribusiness Management	3	-
AF423	Local Level Planning and Evaluation	3	-
AF425	Micro Credit	3	-

Note: The odd and even numeric figures in the course code indicate theory and practical courses respectively.

Syllabus for B.Sc. Ag. Econ. (Hons.) Degree
Department of Agricultural Economics
Level-1, Semester-1

Course No.: AE111
Course Title: Principles of Economics
Credit hours: 3

Introduction to Economics: Definition and scope of Economics, Difference between microeconomics and macro economics, The impact of economics on society, Positive economics versus Normative economics.

Theory of consumer Behaviour: Marshallian utility analysis, Indifference curve analysis, Law of demand curve, Elasticity of demand.

Theory of Production: Production function, Factors of production, Law of diminishing returns, Production of labor, Iso-product curve, Stages of production.

Theory of Firm: Cost and revenue concepts, Equilibrium of firm, Markets and their characteristics, Price determination under different market conditions.

Theory of Distribution: Elementary theories of wages, rents, interest and profit.

Population Theory: Malthusian theory, Optimum theory of population.

National Income: Concepts and measurement of national income.

Money of Banking: Definition and function of money, Value of money, Inflation, Function of central, commercial and specialized banks.

International Trade: Concepts of international trade, Classical theory of international trade, Gains from international trade.

References:

- Samuelson. P.A. 1995: Economics- An Introductory Analysis, McGraw HillBook Co., Inc.
Ferguson, C.E., and Gould, J.P. (1975). Microeconomic Theory, Fourth Edition, Richard D. Irwin Inc. Illinois.
Hirshleifer, J. (1976). Price Theory and Applications, Prentice Hall International Inc. London.
Mankiw, N.G. (2004). Principles of economics (3rd ed., Mason OH: Thomson / South-Western,). ISBN: 0-324-20309-8.
Chandler, L. V: Economics of Money & Banking, Harner and Row, London.

Course No.: AE115
Course Title: State and Government
Credit hours: 2

Concept of state and citizenship, Rights and duties, Constitution, Democracy, Kinds of Government, Organs of Government, Nationalism and Internationalism, Concept of Local Self-government Institutions, Union parishad - upazila system - structure and activities - relationship with National Government.

References:

- Ahmed, E. (1980). Bangladesh Politics, Centre for Social Studies, Dhaka.
Chakrabarty et al. (1986). Bangladesh : Domestic Politics, South Asian Publishers, New Delhi.
Costello, K. (1970). Elements of Political Knowledge, Progress Publishers, Moscow.
Gettell, R.G. (1961). Political Science, The World Press Private Ltd., Calcutta.
Jahan, R. (1980). Bangladesh Politics : Problems and Issues, University Press Limited, Bangladesh.
Kapur, A.C. (1973). Principles of Political Science, S. Chand & Co. (Pvt.) Ltd., New Delhi.
Laski, H.J. (1967). A Grammar of Politics, London: George Allen and Unwin Ltd.
Mahajan, V.D. (1972). Select Modern Government, S. Chand & Co. (Pvt.) Limited, New Delhi.
Maniruzzaman, T. (1980). The Bangladesh Revolution and Its Aftermath, Bangladesh Books International Limited, Dhaka.
Sen, R. (1986). Political Elites in Bangladesh, The University Press Limited, Dhaka, Bangladesh.
Serajul H. M. (1965). Modern Constitutions, East Bengal Publishers, Dhaka.

Level-1, Semester-2

Course No.: AE121

Course Title: Public Administration and Political History of Bangladesh

Credit hours: 2

Introduction to Public Administration - Relationship with other allied subjects, Development administration, Language movement, Political activities before Martial Law or in 1956-1958 and 1962 constitution, Political movements in sixties - Radicalization - Liberation movement - Birth of Bangladesh - Bangladesh constitution.

References:

- Abdullah, M.M. (1979). Public Administration Today, Lions Publications Limited, Dhaka.
- Ali, A. (1981). Basic Principles and Practices of Administrative Organization: Bangladesh, Dhaka, National Institute of Local Government.
- Anisuzzaman, M. (1979). Bangladesh Public Administration and Society, Bangladesh Books International Limited, Dhaka.
- Banerjee, S. (1978). Studies in Administrative History of Bengal 1980-1998, Rajesh Publication, New Delhi.
- Bhagawn et al. (1974). A Text Book of Public Administration, S. Chand & Co. (Pvt.) LTD, New Delhi.
- Griffiths, D.E. (1978). Administrative Theory, Bombay, D.B. Taraporevala Sons, Bombay.
- Marx, F.M. (1959). Elements of Public Administration, Englewood Cliffs, N.J. Prentice-Hall.
- Rowat, D.C. (1961). Basic Issues in Public Administration, The Macmillan Co., New York.
- Sachdeva, D.R. (1980). Public Administration: Concepts and Application, Associated Publishing House Ltd., New Delhi.
- Sharma et al. (1988). Public Administration in Theory and Practice, Kitab Mahal Limited, Nagpur.

Course No.: AE125

Course Title: Microeconomics-I

Credit hours: 3

Basic Concepts: Microeconomics, Importance and uses of Microeconomics, Difference between Microeconomics and Macroeconomics.

The Theory of Consumer Behaviour: Utility and marginal utility analysis; Principle of equi-marginal utility, Law of Demand, Derivation of demand curve. Elasticity of Demand: Definition, various concepts of demand elasticity and their application.

Indifference Curve Analysis: Indifference curves and ordinal preference, Properties of indifference curves, Budget line, Consumer's equilibrium, Income, substitution and price effects.

Theory of Production: Production with one variable input, Production with two variable inputs, Optimum combination of two products, Cost of production and cost curve.

The Theory of Distribution: Wages, Rent, Interest and Profits. Marginal productivity theory of distribution, Demand for a productive service, Supply of a productive service, Distribution and relative factor shares.

References:

- Ahuja, H.L. (1987). Advanced Economic Theory - Microeconomics Analysis, 15th edn., S. Chand & Co., New Delhi.
- Bilas, R.A. (1981). Microeconomic Theory, McGraw Hill, London.
- Chakravarty, M. (2000). Microeconomics, 4th edn., Agni Printing & Publishing Co.
- Dewett, K.K. and Chand, A. (2000). Modern Economic Theory, S. Chand & Co., New Delhi.
- Ferguson, C.E., and Gould, J.P. (1975). Microeconomic Theory, Fourth Edition, Richard D. Irwin Inc., Illinois.
- Glass, J.C. (1980). An Introduction to Mathematical Methods in Economics, McGraw Hill, London.
- Henderson, J.M. and Quandt, R.E. (1985). Microeconomic Theory - A Mathematical Approach, 3rd edn., McGraw Hill, London.
- Hirshleifer, J. (1976). Price Theory and Applications, Prentice Hall International Inc. London.

Level-2, Semester-1
Course No.: AE 211
Course Title: Microeconomics II
Credit hours: 3

The Theory of Firm: Equilibrium of the firm, Classification of market structure, Cost and revenue concepts, Profit maximization and other objectives of the firm, Equilibrium of the firm under perfect competition.

The Theory of Product Pricing: Supply curve and equilibrium of the industry under perfect competition, Price determination under perfect competition. Price and output under monopoly, Price discrimination, Price and output determination under monopolistic competition and oligopoly.

Welfare Economics: Introduction, Neo-Classical welfare economics and consumer's surplus, Conditions of Pareto optimality, perfect competition and Pareto optimality, Compensation principle, social welfare maximization, grand utility possibility frontier, Social welfare function.

References:

- Allen, R.G.D. (1976). *Mathematical Analysis for Economists*, Macmillan & Co. Ltd., London.
- Baumol, W.J. (1972). *Economic Theory and Operations Analysis*, 3rd Edition, Prentice/Hall International Inc. London.
- Chamberlin, E.H. (1950). *The Theory of Monopolistic Competition*, Harvard University Press, Cambridge (6th edn.).
- Chiang, A.C. (1974). *Fundamental Methods of Mathematical Economics*, 2nd Edn., Mac Graw-Hill, Tokyo.
- Dev, G.J. (1957). *Theoretical Welfare Economics*, Cambridge University Press, London.
- Dinwiddy, C. (1967). *Elementary Mathematics for Economists*, Oxford University Press, Dhaka.
- Fellner, W. (1949). *Competition Among the Few: Oligopoly and Similar Market Structure*, Alfred A. Knopf, New York.
- Robinson, J. (1933). *The Economics of Imperfect Competition*, Macmillan & Co. Ltd., London.
- Stigler, G. J. (1952). *The Theory of Price*, Mcmillan & Co., New York.
- Stigler, G. J. (1941). *Production and Distribution Theories*, Mcmillan & Co., New York.

Course No.: AE 213
Course Title: Macroeconomics- I
Credit hours: 3

Introduction: The meaning of macroeconomics, Relation between microeconomics and macro-economics, Macro variables and related basic concepts.

Measurement of Economic Activity: National income, The gross national product account, Conceptual problems in the estimation of national income, National income and social welfare.

Classical Macroeconomics: The Classical theory of income and employment determination, Supply of and demand for money, Wage and price flexibility.

Keynesian Macroeconomics: Income and employment determination and simple Keynesian model, Consumption function, Investment function, Government and level of income, Multiplier, Fiscal models and fiscal policy analysis.

References:

- Dernburg, T.F. and McDougall, D.M. (1983). *Macroeconomics*, Asian Student Edition, Singapore National Printers (Pte) Ltd.
- Dewett, (1998). *Modern Economic Theory*. S. Chand & Company Ltd. India.
- Dornbusch, R. and Fischer, S. (1985). *Macroeconomics*, International Student Edition, McGraw-Hill, Singapore.
- Poindexter, J.C. (1981). *Macroeconomics*, Holt-Saunders International, Second Edition, USA.
- Shapiro, E. (1984). *Macroeconomics Analysis*, Harcourt Brace Javanovich Inc.
- Vaish, M.C. (2001). *Macroeconomic Theory*. Vikas Publishing House Pvt. Ltd.

Level-2, Semester-2

Course No.: AE221

Course Title: Mathematical Economics

Credit hours: 3

Number system and variables, Sets, functions and their diagrammatic representation, Functions and curves, Application of functions to economic theories, Differentiation and their uses in economics, Integration and their uses in economics, Unconstrained maximization and minimization, Constrained maximization and minimization, Homogenous function and its application, Determinants and matrix and their application, Input-output analysis.

References:

- Black, J. and Brodley, J.F. (1980). Essential Mathematics for Economists, 2nd edn. John Wiley and Sons, New York.
- Chiang, A.C. (1974). Fundamental Methods of Mathematical Economics, 2nd edn. McGraw-Hill, Tokyo (latest edition).
- Dinwiddy, C. (1967). Elementary Mathematics for Economist, Oxford University Press, New York.
- Henderson, J.M. and Quandt, R.E. (1971). Microeconomic theory: A Mathematical Approach, 2nd edn. McGraw-Hill Book Company Inc. (latest edition).
- Jacques, I. Mathematics for Economics and Business, 2nd edn. (1973). Cambridge University Press, Addison-Wesley Publishing Co.
- James, D.E. and Throsby, C.D. (1973). Introduction to Quantitative Methods in Economics, John Wiley and Sons, Brisbane.
- Lewis, J.P. (1962). An Introduction to Mathematics for Students of Economics, Macmillan and Co. Ltd., London.
- Mabbett, A.J. (1986). Work-out Mathematics for Economists, Macmillan, London.
- Yamane, T. (1968). Mathematics for Economists, 2nd edn., Englewood Cliffs: Prentice Hall, Inc.
- Allen, R.G.D. (1930). Mathematical Analysis for Economist, London: The Macmillan Co.

Course No.: AE223

Course Title: Macroeconomics-II

Credit hours: 3

Classical and Keynesian Macroeconomics: Review of Classical and simple Keynesian theory of income and employment determination, Expansion of simple Keynesian model, Post Keynesian model, The IS and LM functions - General equilibrium approach.

Investment Theory: Capital and investment, MEC and rate of interest, Determinants of investment, Short term and long term determinants of investment, MEC and uncertainty.

The Demand for and Supply of Money: Demand for money - The Classical approach - The Keynesian approach, Supply of money.

Macroeconomic Issues and Policies: Income stabilization and fiscal policy, Income stabilization and monetary policy, Fluctuations and economic growth, Inflation and business cycles.

References:

- Shapiro, E. (1984). Macroeconomics Analysis, Harcourt Brace Javanovich Inc.
- Branson, W.H. (1979). Macroeconomic Theory and Policy, 2nd Edition, Harper and Row Publishers, London.
- Dernburg, T.F. and McDougall, D.M. (1983). Macroeconomics, Asian Student Edition, Singapore National Printers (Pte) Ltd.
- Dornbusch, R. and Fischer, S. (1985). Macroeconomics, International Student Edition, McGraw-Hill, Singapore.
- Poindexter, J.C. (1981). Macroeconomics, Holt-Saunders International, Second Edition, USA.
- Vaish, M.C. (2001). Macroeconomic Theory. Vikas Publishing House Pvt. Ltd.

Course No.: AE225
Course Title: Production Economics-I
Credit hours: 3

Introduction, Production and Cost Functions: Concept of a production function, Types of production function, Law of Diminishing Returns, Costs of production, Allocation of one variable input, Economic efficiency and profit maximization for an enterprise.

Production with Two or More Variable Inputs: Production function for two variable inputs, Isocost lines, Least cost criterion, Isoclines, Expansion paths, and Profit maximization.

Production of Two or More Products: Production possibility curve, Relationships among products, Maximum revenue combination of outputs.

Economics of Size and Their Implications for Farms: Production in the long-run, Returns to scale, and Equilibrium in the long-run.

Production Process Through Time: A general picture considering Bangladesh agriculture over a period of time, Economic aspects of durable inputs and valuing agricultural land, Land tenure system.

References:

- Heady, E.O. and Dillon, J.L. (1981). Agricultural Production Function, Iowa State University Press, Ames.
Dillon, J.L. and Hardaker, J.B. (1993). Farm Management Research for Small Farmer Development, 2nd edn., Farm Management Series, FAO, Rome.
Doll, J.P. and Orazem, F. (1984). Production Economics - Theory with Applications, 2nd edn., John Wiley, New York.
Ritson, C. (1977). Agricultural Economics - Principles and Policy, Crosby Lockwood and Staples, London.
Bishop, C.E. and Toussaint, W.D. (1965). Introduction to Agricultural Economic Analysis, John Wiley, New York.

Course No.: AE226
Course Title: Production Economics- I
Credit hour: 1

Estimation of production and cost functions and presentation of a term paper in the class.

References:

- Bishop, C.E. and Toussaint, W.D. (1965). Introduction to Agricultural Economic Analysis, John Wiley, New York.
Dillon, J.L. and Hardaker, J.B. (1993). Farm Management Research for Small Farmer Development, 2nd edn., Farm Management Series, FAO, Rome.
Doll, J.P. and Orazem, F. (1984). Production Economics - Theory with Applications, 2nd edn., John Wiley, New York.
Heady, E.O. and Dillon, J.L. (1981). Agricultural Production Function, Iowa State University Press, Ames.
Ritson, C. (1977). Agricultural Economics - Principles and Policy, Crosby Lockwood and Staples, London.

Level-3, Semester-1

Course No.: AE311
Course Title: Farm Management-I
Credit hours: 3

Introduction: Definition of farm management, Functions of management, Relation of farm management to other agricultural sciences, The business principles of farming, Application of economic principles to the organization and operation of farms.

Data Source and Collection: The uses of secondary data, Qualitative data collection, Quantitative data collection, Data collection methods, Types of information collected by survey, Village studies, Farm case studies, Steps involved in farm business survey.

Sampling Techniques: Sampling techniques used in farm management research, Probability sampling and non-probability sampling.

Analytical Techniques: Cost accounting, Gross margin analysis, Accounts analysis.

Farm bookkeeping and financial accounting: Preparation of financial statement, Balance sheet, Operating statement.

Measures of Whole-Farm Performance: Cash flow measures, Income and profitability measures, Measures of capital and debt position.

Farm Planning and Budgeting: Complete budgeting, Partial budgeting, Break-even budgeting, Programming techniques.

References:

Barnard, C.S. and Nix, J.S (1973). Farm Planning and Control, Cambridge University Press.

Dillon, J.L. and Hardaker, J.B. (1993). Farm Management Research for Small Farmer Development, 2nd edn., Farm Management Series, FAO, Rome.

Efferson, J.N. (1953). Principles of Farm Management, McGraw Hill Book Company, New York. India - Theories and Practices, Allied Publishers Ltd.

Johl, S.S. and Kapur, T.R. (1973). Fundamental of Farm Business Management, Kalyani Publishers, New Delhi.

Kahlon, A.S. and Singh, K. (1992). Economics of Farm Management in Smith, D.T. (edited) (1989). Farm Management, U.S. Government Printing Office, Washington, D.C. Small Farmers Development, FAO, Rome.

Yang, W.Y. (1958). Methods of Farm Management Investigation, FAO, Rome.

Course No.: AE312

Course Title: Farm Management-I

Credit hour: 1

Sampling techniques used in farm management research; Calculation of depreciation by different methods; Measurement of Gini co-efficient of land and farm income; Cropping intensity and intensity of land use; Comparative cost and return analysis of different farm enterprises; Enterprise costing; Gross margin analysis and Net farm income. Partial Budgeting: Replacement budget, Expansion budget, Innovation budget and Break-even budget. Agricultural Project Analysis: Benefit cost ratio, Net present value and Internal rate of return, Use of sensitivity analysis in farm business management. Agricultural project analysis and Use of statistical tools in farm management research.

References:

Barnard, C.S. and Nix, J.S.(1978). Farm Planning and Control, Cambridge University Press, Cambridge.

Cochrane, W.G. (1965). Sampling Techniques, Modern Asia Editions, John Wiley & Sons Inc.

Dillon, J.L. and Hardaker, J.B. (1993). Farm Management Research for Small Farmer Development, 2nd edn., Farm Management Series, FAO, Rome.

Gittinger, J.P. (1972). Economic Analysis of Agricultural Projects, The Johns Hopkins University Press, Baltimore and London.

Norman, L. and Coote, R.B.(1976). The Farm Business, Longman Publisher, London & New York.

Singh, M.K. and Mahadevan, A. (1990). Project Evaluation and Management, Discovery Publishing House, New Delhi.

Yang, W.Y. (1958). Methods of farm Management Investigation, FAO, Rom.

Level-3, Semester-2

Course No: AE323

Course Title: Economy of Bangladesh

Credit hours: 3

Natural resources of Bangladesh: Soil, water, river, forest, fisheries, livestock, minerals, oil and gas.

Population: Population growth and control, role of women in income development.

Land tenure systems: Land reform, land policy, group farming in Asia and mechanization.

Marketing: Marketing of agricultural and industrial products.

Agricultural production: Production of food and cash crops population growth and food supply and nutritional status.

Organization: Problems of industrialization in Bangladesh, entrepreneurship development.

Experiences of private and nationalized industries in Bangladesh.

Transport and communication.

Banking, credit and foreign trade.

Budget and planning.

References:

Chowdhury, Q.I. (2000). Bangladesh State of Environment Report Form of Environmental Journalists of Bangladesh, Dhaka, Bangladesh.

Dykes, S.F. (1991). Agriculture and the Environment, U.S. Department of Agriculture, 10, Dilkusha Commercial Area, Bangladesh.

Rahman, M.A. (1993) Export and Economic Development of Bangladesh. Bangladesh Young Economists Association (BYEA). Dhaka, Bangladesh.

Rahman, M. (1986). Tradition; Development and Individual, Asian Population Change Series No. 1., Australian National University, Canberra, Australia.

Sobhan, R. (2000). Experiences with economic reform, The University Press Limited, Dhaka, Bangladesh.

Wong, J. (1979). Group Farming in Asia, University Press Pvt. Ltd., University of Singapore, Kent Ridge, Singapore.

Level-4, Semester-1

Course No.: AE411

Course Title: Economic Growth and Development

Credit hours: 3

Meaning of development, Approaches to study development, Distinction between economic growth and development, Theories of economic growth, Trends of economic growth in different countries, Characteristics of modern economic growth, Growth versus equity, Characteristics of developing countries, Economic and social indicators of development, Some basic concepts of economic development, Measurement of economic growth and use of national income statistics, Formal and informal sectors of the economy, Incidence and measurements of poverty, Planning and financing economic development, Experiences of different countries about economic development.

References:

Higgins, B. (1994). Economic Development: Problems, Principles and Policies, New Delhi, UBL.

Kindleberger, C.P. (1983). Economic Development. 4th edn. New Delhi, McGraw-Hill International Book Co.

Lewis, W.A. (1956). The Theory of Economic Growth, George Allen and Unwin Ltd. London.

Meir, G.M. (1995). Leading Issues in Economic Development. Sixth Edition, Oxford University press.

Nakamura, T. (1985). Economic Development of Modern Japan, Ministry of Foreign Affairs, Japan.

Planning Commission (1997). Fifth Five-Year Plan, 1997-2002. Ministry of Planning, Government of the People's Republic of Bangladesh, 1997.

Planning Commission (2000). Mid-term Review of the Fifth - Five Year Plan, Ministry of Planning, Government of the People's Republic of Bangladesh.

Thirlwall, A.P. (1972). Growth and Development, London, Macmillan.
Todaro, M.P. (1987). Economics for Developing World, 2nd Edition, Longman, London and New York.
Todaro, M.P. (1995). Economic Development in the Third World, 5th edn. New York, London.

Course No.: AE413
Course Title: Production Economics-II
Credit hours: 2

Resource Use Efficiency: Resource curves and efficiency in response, Decision making for agricultural production in the subsistence agriculture vis-a-vis commercial agriculture, Introduction to decision theory, Historical reviews of agricultural production systems, Analyzing risky production processes, Transformation of traditional agriculture.

Farm Adjustments in a Changing Technology: Technological change and competition among regions, Terms of trade and rate of protection in agriculture, Attributes of farm adjustment in the context of Agreement on Agriculture under WTO rules.

Programming: Linear programming and non-linear programming, Solution approach-graphical method and simplex method, Problems and exercises, Investment decisions.

References:

- Anderson, J.R., Dillon, J.L. and Hardaker, J.B. (1977). Agricultural Decision Analysis, Iowa State University Press, Ames.
- Baumol, W.J. (1978). Economic Theory and Operations Analysis. 4th edition, Prentice-Hall, New Delhi.
- Berbardm H.R. (1972). Technology and Social Change, Macmillan, New York.
- Brammer, H. (2000). Agroecological Aspects of Agricultural Research in Bangladesh, University Press, Dhaka.
- Dillon, J.L. (1979). The Analysis of Response in Crop and Livestock Production, 2nd edn., Pergamon Press, Oxford.
- Dillon, J.L. and Hardaker, J.B. (1993). Farm Management Research for Small Farmer Development, 2nd edn., Farm Management Series, FAO, Rome.
- Gittinger, J.P. (1994). Economic Analysis of Agricultural Projects, 2nd edn., Johns Hopkins University Press, Baltimore.
- Mandal, M.A.S. and Asaduzzaman, M. (2001). Impact of Globalization on Bangladesh Agriculture, Mimeo. International Labour Organization.
- Roumasset, J.A. et al. (1979). Risk, Uncertainty and Agricultural Development, ADC, New York.

Course No.: AE414
Course Title: Production Economics-II
Credit hour: 1

1. Estimation of response function and cost function.
2. Estimation of contribution of key variables to the production process of agricultural commodities.
3. Resource use efficiency.
4. Application of discounting methods on durable inputs and its presentation in class.
5. Exercise on risky decision analysis.
6. Exercise on optimization problems using linear programming methods.

References:

- Jhon. L. Dillon (1979). The Analysis of Resource in Crop and Livestock Production, 2nd ed Pergamon Press, Oxford.
- Jhon P. Doll and F. Orazem (1984). Production Economics: Theory with application, Wiley and Sons.
- H. C. Petersen and W.C. Lewis (1999). Managerial Economics, 4th ed. Pearson Education, Pet. Ltd.
- J.R. Anderson, J.L. Dillon and Brian Hardaker (1977). Agricultural Decision Analysis, 1st ed., The Iowa State University Press.

Level-4, Semester-2

Course No.: AE 421

Course Title: Environmental Economics

Credit hours: 3

Introduction to Environmental Economics: Different environmental values, Classification of valuation techniques, Introduction to renewable and non-renewable resources.

Market based valuation: Welfare measures demand curve and consumer surplus, Supply curve and producer surplus, Allocative efficiency, Valuing opportunity costs, Valuing benefits in different situation.

Non-market Valuation: Welfare economics and welfare measures, Compensating variation, Equivalent variation, Economic approaches to environmental valuation, Environmental quality as an input in the production marketable goods, The household production function, Valuation techniques that market prices, Cost of soil erosion, Cost of soil conservation, Valuing health effects.

Valuations Methods based on Indirect Market Information: The Hedonic pricing model, the Hedonic wage model.

Contingent Valuation: Welfare economic issues, Different CVM methods, Survey types, Criticism and problems of CVM.

Assignments.

References:

Freeman, A.M. III (1992). The measurement of Environmental and resource Values: Theory and Methods. Resources for the Future, 1616 P street, NW, Wahington, DC 20036-1400.

Herath, M.G. (2003). Environmental Valuation: Theory and Application. 4U Offset Printers, Willam Gopallawa Mawatha, Kandy.

Hanely, N. and Spash, C.L. (1993). Cost-benefit Analysis and the Environment. Edward Elgar Publishing Limited, Gower House, Croft Road, Aldershot, Hants GU11 3HR England.

Neher, P.A. (1990). Natural Resource Economics: Conservation and Exploitation. Cambridge University Press, The Pitt Building, Trumpington Street, Cambridge CB2 1RP

Asian Development Bank (ADB). (1996). Economic Evaluation of Environmental Impacts: A Workbook Environment Division, ADB, Manila.

Pigou, A.C. (1932). The economics of welfare, 4th edition, McMillan Press London.

Conrad, J.M. (1999). Natural Resource Economics. Cambridge University Press, The Pitt Building, Trumpington street, Cambridge CB2 1RP

Arrow, K. and Others. (1993). Report of the NOAA Panel on Contingent Valuation. Federal Register, 58: 4602-4614.

Maler, K.G. (1974). Environmental Economics: A Theoretical Inquiry. Resources for the Future, Washington DC.

Kadekodi, G.K.(2000). Environment and Development. In R.N. Battacharya (Ed). Undergraduate Textbook in Environmental Economics. Oxford University Press. New Delhi.

Course No.: AE423

Course Title: Farm Management-II

Credit hours: 3

Measuring Farm Efficiency: Production efficiency, Measures of production efficiency, Methods of improving production efficiency, Labour efficiency: Measures of labour efficiency, Methods of improving labour efficiency in the use of farm labour.

Farm Planning and Budgeting: Complete budgeting and related difficulties.

Linear Programming: Quantitative components, Assumptions of linear programming, Evaluation of linear programming.

Farm Planning under Risk and Uncertainty: The degree of uncertainty, Types of uncertainty, Decision analysis under risk and uncertainty.

Agricultural Projects Analysis: Definition of a project, Aspects of project analysis, Points of view of project analysis, Identification of Costs and Benefits of agricultural projects, Shadow pricing for economic analysis, Un-discounted measures of project worth, Discounted measures of project worth, Sensitivity analysis.

References:

Barnard, C.S. and Nix, J.S. (1973). Farm Planning and Control, Cambridge University Press. Business Publications Inc. Texas.

Dillon, J.L. and Hardaker, J.B. (1993). Farm Management Research for Small Farmer Development, FAO, Rome.

Efferson, J.N. (1953). Principles of Farm Management, McGraw Hill Book Company, New York.

Gittinger, J.P. (1953). Economic Analysis of Agricultural Project, The John Hopkins University Press, London.

Heady, E.O. and Candler, W. (1958). Linear Programming Methods, Ames (Iowa). The Iowa State University Press, U.S.A.

Kahlon, A.S. and Singh, K. (1992). Economics of Farm Management in India - Theories and Practices, Allied Publishers Ltd.

Sturrock, F. (1971). Farm Accounting and Management, Pitman Publishing, U.K.

Turban, E. and Meredith, J.R. (1994). Fundamentals of Management Science, 6th ed., Burr Ridge, Ill.: Irwin.

Course No.: AE424

Course Title: Farm Management-II

Credit hour: 1

Measuring Farm Efficiency: Production efficiency, Labour efficiency, Resource use efficiency (allocative efficiency, economic efficiency).

Exercise on farm planning and budgeting, Partial and complete budgeting.

Agricultural Project Analysis: Calculation of BCR, NPV, IRR. Financial and economic analysis, Shadow pricing, Sensitivity analysis.

References:

Cochrane W.G. (1965). Sampling Techniques, Modern Asia Edition, John Wiley & Sons Inc.

Norman, L. and Coote, R.B. (1976). The Farm Business, Longman Publisher, London & New York.

Barnard, C.S. and Nix, J.S. (1978). Farm Planning and control, Cambridge University Press, Cambridge.

Gittinger, J.P. (1972). Economic Analysis of Agricultural Project, The John Hopkins University Press, Baltimore and London.

Syllabus for B.Sc. Ag. Econ. (Hons.) Degree

Department of Agricultural Finance

Level-1, Semester-2

Course No: AF121

Course Title: Money and Banking

Credit hours: 3

MONEY

Introduction: Definition and chronological development of money, functions and types of money, Characteristics of a good money, Black money, Money laundering, Role of money in modern economy.

Monetary Standard: Concept and Essentials of a good monetary standard, Types- gold standard, paper standard, Gresham's law of bimetallism, Methods of note issue.

Demand for and Supply of Money: Components and causative factors of money supply, Narrow, broad and high power money, money multiplier, types of demand for money, liquidity trap and money illusion.

Theory of Money: Value of money, Quantity theory of money- Classical- Hume's, Fisher's and income flow versions, Neoclassical- Cambridge cash balance approach, Modern version, Income theory of money- Income-expenditure approach, Saving and investment approach.

Inflation: Definition, causes and types of inflation, Effects of inflation, Control of inflation, Inflationary gap.

Index Number: Concept and construction of index number, Weighted and simple index number.

Monetary Policy: Definition and objectives of monetary policy in developing country, Limitations and instruments of monetary policy.

BANKING

Introduction: Definition and evolution of bank, Ancestors of modern banking, Role of bank in economic development, Unit, branch, chained, group and mixed banking

Commercial Banking: Definition and functions, Basic principles of commercial banking, Liquidity versus profitability, Credit creation, Balance sheet of commercial bank, E-banking.

Central Banking: Definition and evolution of central bank, Functions, Objectives and methods of credit control

Islamic Banking: Concept and objectives of Islamic banking, Islamic banking versus traditional banking, Some credit programs of Islamic banking, Advantages of Islamic banking

References:

Dewett, K.K. (1984): Modern economic Theory. Himalaya Publishing House, Girgaon, Bombay.

Douglas, Fisher (1980): Money, Banking and Monetary Policy. Richard D. Irwin Inc.

Ghosh, B.N. and Ghosh, Rama (1989): Fundamentals of Monetary Economics. Himalaya Publishing House, New Delhi.

Homoud, S.H. (1986): Islamic Banking. Arabian Information, London.

Hussain, Md. Mubarak (1999): Islamic Banking- Principles and Application (Bengali). Al-Madani Hossaini Prokashani, Dhaka.

Khan, Azizur Rahman (1989): Rural Finance and Banking (Bengali). Ideal Library, Dhaka.

Mithani, D.M. (1988): Money, Banking, International Trade and Public Finance. Himalaya Publishing House, Girgaon, Bombay

Quadir, Serajul Islam (1990): How Money Came? (Bengali). University Press Limited, Dhaka.

Rahman, Latifur (1987): Banking System (Bengali): Ideal Library, Dhaka.

Rahman, Shah Muhammad Habibur (1996): Islamic Economics (Bengali). Square Publications, Rajshahi.

Raulett, J.G. (1977): Money and Banking- an introduction to analysis and policy.

Sikder, Zahirul Islam (1995): Banking System and Monetary Policy (Bengali). Famous Publications, Dhaka.

Vaish, M.C. (1984): Monetary Theory, Vikas Publishing House, New Delhi.

Wood, Jr. O.S. (1978): Commercial Banking- practices and policy.

Level-2, Semester-1
Course No: AF 213
Course Title: Public Finance
Credit hours: 3

Introduction: Definition, subject matter and importance of public Finance, Public finance versus private finance, Principles of maximum social advantage.

Public and Private Goods: Definition, characteristics and price determination of private and public goods.

Public Revenue: Sources of public revenue, measures to increase revenue income of the Government of Bangladesh, Tax, fee and commercial revenue.

Taxation: Meaning and characteristics of tax, Canons of taxation, Proportional, progressive, regressive and degressive taxes, Specific and advalorem taxes, Direct and indirect taxes, Impact and incidence of tax, Characteristics of a good tax system, Tax structure of Bangladesh, VAT- Definition, objectives and methods of VAT, Advantages and disadvantages of VAT.

Public Expenditure: Meaning and types of public expenditure, Heads of public expenditure, Causes of increase in public expenditure, Role of public expenditure in developing countries.

Public Debt: Types, Need for public debt, Sources and redemption of public debt, Burden of public debt, Public debt in Bangladesh.

Budget: Definition, Types- balanced, surplus and deficit budgets, Balanced budget multiplier, Characteristics of a good budget, Budget formulation, Deficit budgeting versus deficit financing, Budget and plan, Budgets of Bangladesh.

Fiscal Policy: Objectives and instruments of fiscal policy, Fiscal policies in Bangladesh.

References:

- Arongson, J.R. (1985): Public Finance. McGraw Hill Book Company, New Delhi.
Azad, Md. Golam Azam (1992): Public Finance (Bengali). Muhammad Brothers, Dhaka.
Bhatia, H.L. (1980): Public Finance. Vikas Publishing House Private Ltd., New Delhi.
Dey, Monoranjan (1990): Public Finance (Bengali). Famous Publications, Dhaka.
Government of Bangladesh (GOB): Annual Budgets- related reports and reviews of the Government of Bangladesh. Ministry of Finance, GOB, Dhaka.
Hossain, Mohammad Ismail (1988): Public Finance (Bengali). Alam Printing Press, Rajshahi.
Majid, M.A. and Hamid, M.A. (1996): Public Finance (Bengali). Sahitya Kosh, Dhaka.
Ministry of Finance (2000): Bangladesh Economic Survey, 1999, Government of the People's Republic of Bangladesh, Dhaka.
Musgrave, R.A. and Musgrave, P.B. (1984): Public Finance in Theory and Practice. McGraw Hill Book Co., New Delhi.
Taylor, P.E. (1961): Economics of Public Finance. Oxford IBH Publishing House, Calcutta.
Troman-Dickenson, D.I. (1983): Public Sector Economics Made Simple. Heinemann, London.

Level-2, Semester-2
Course No: AF 221
Course Title: Agricultural Finance-I
Credit hours: 3

Introduction: Nature and scope of Agricultural Finance, Financial intermediation in Agriculture.

Information Flows and Financial Management: Income statement, Balance sheet, Cash flow budget, Proforma financial statement, Tools for forward planning analysis of financial statement.

Ratio Analysis: Meaning, Different types of ratios for measuring solvency, liquidity and Profitability of farm business, Comparative analysis projection.

Resource Acquisition and Control in Agriculture: Savings and retained earnings, Gifts and inheritances, Pooling equity capital, Leasing, Contract Farming, Borrowing.

Use of Credit in Farm Business: Role and classification of credit, Evaluation of credit capacity, Working with lenders.

Loan Interest Rate and Repayment Terms: Factors affecting cost of credit, Simple and compound interest terminology, Loan repayment plans, Methods of computing loan repayments, Computing interest rates, Miscellaneous credit costs, Variable interest rates.

Credit Analysis and Debt-Servicing Capacity: Analyzing repayment capacity, Debt structure and balance, Credit reserves, Credit line.

Risk in Agriculture: Types of risk and uncertainty in agriculture, Strategies to reduce risk.

Farm Credit System in Bangladesh: Bangladesh Bank and farm policy instruments, Commercial banks and farm lending, Farm credit operation of Bangladesh Krishi Bank, Rajshahi Krishi Unnyan Bank, Bangladesh Samabaya Bank Limited, Land Mortgage Bank and Grameen Bank, Production credit system, Agricultural credit and traditional and Comilla model cooperative systems, Evaluation of other special credit programmes for farm credit in Bangladesh.

References:

Akhtar, S.M. (1966): Pakistan- A Developing Economy.

Barry, Peter J., Hopkin, John A. and Baker, C.B. (1983): Financial Management in Agriculture. The Interstate Printers and Publishers, Inc., USA.

Lee, Warren F., Boehlje, Michael D., Nelson, Aaron G. and Murray, William G. (1980): Agricultural Finance. The Iowa State University Press, AMES.

Nelson, Aaron G. and Murray, William G. (1967): Agricultural Finance. The Iowa State University Press, AMES.

Penson and Lins (...): Farm Financial Management.

Course No: AF 222

Course Title: Agricultural Finance-I

Credit hour: 1

Study on the economic activities and economic information of the farm business, Determining the credit requirement of farm business, Determine the sources and availability of fund for the farm, Preparation of cash flow budget, balance sheet and proforma financial statement of an agricultural farm, Using time value of money technique for the valuation of farm income, Application of capital budgeting techniques for the evaluation of different types of agricultural projects, Study on the intensity of risks in farm business, Incorporating the effects of risk, uncertainty and inflation in capital budgeting for proper decision making
Make visit different dairy, poultry and other agricultural firms to study their management and decision making process, Arrange group discussion and seminar and report preparation.

References:

Akhtar, S.M. (1966): Pakistan- A Developing Economy.

Barry, Peter J., Hopkin, John A. and Baker, C.B. (1983): Financial Management in Agriculture. The Interstate Printers and Publishers, Inc., USA.

Lee, Warren F., Boehlje, Michael D., Nelson, Aaron G. and Murray, William G. (1980): Agricultural Finance. The Iowa State University Press, AMES.

Nelson, Aaron G. and Murray, William G. (1967): Agricultural Finance. The Iowa State University Press, AMES.

Penson and Lins (...): Farm Financial Management.

Level-3, Semester-1

Course No: AF 311

Course Title: International Economics

Credit hours: 3

Introduction: Nature, scope and importance of International Economics, Internal versus international trade.

Theories of International Trade: Classical theories- Adam Smith's theory of absolute advantage, Ricardo's doctrine of comparative advantage, Haberler's opportunity cost theory, Mill's theory of reciprocal demand Marshall's offer curve analysis, Modern theory- Heckscher-Ohlin theory of international trade.

Gains from Trade: Concept and measurement of gains from trade.

Terms of Trade: Meaning and types of terms of trade, Factors influencing terms of trade.

Balance of Payments: Balance of payment and balance of trade, Structure of balance of payment- capital and current accounts, Balance of payment always balances, Types and causes of disequilibrium in balance of payments, Methods of correcting disequilibrium in balance of payments, Balance of payment in Bangladesh.

Commercial policy: Free trade versus trade protection, Relative efficiency of subsidy, quota, dumping, cartels and exchange rate manipulation as methods of trade protection.

Exchange Rate Determination: Theories of foreign exchange rate, Causes of fluctuation in exchange rate.

Exchange Control: Objective and methods of exchange control, multiple exchange rates and under developed countries.

Devaluation: Objectives and effects of devaluation, Disadvantages of devaluation, Conditions for the success of devaluation, Circumstances for the acceptance of devaluation.

Economic Integration: Concept of customs union and free trade area, Plea for trade and growing protectionism: SAPTA, NAFTA, LAFTA, ECM, WTO and Intellectual Property Rights issues.

International Finance: Objectives and functions of IMF, IBRD, IDA and IFC.

References:

Ali, Syed Ashraf (1986): Foreign Exchange and International Finance. Mrs. Arjumanara Ashraf, Rayer Bazar, Dhaka.

Chacholiades, M. (1990): International Economics. McGraw-Hill Book Company, Singapore.

Chakravarty, Monotosh (1996): International Economics (Bengali). Popular Press, Dhaka.

Dewett, K.K. (1984): Modern economic Theory. Himalaya Publishing House, Girgaon, Bombay.

Ingram, J.C. (1986). International Economics. John wiley and Sons, Inc., Singapore.

Kindleberger, C.P. (1977): International Economics. Richard D. Ins., Illinois.

Mithani, D.M. (1984): Money, Banking, International Trade and Public Finance. Himalaya Publishing House, Girgaon, Bombay.

Planning Commission (1989): Mid-term Review of the Third Five Year Plan (1985-90). The Government of the People's Republic of Bangladesh, Dhaka

Level-3, Semester-2

Course No: AF 321

Course Title: Agricultural Policy and Planning

Credit hours: 3

Introduction: Concepts of economic policy and planning with special reference to agriculture, History of agricultural planning in the third world countries- experiences, evidences and performances.

Agriculture and Natural Resource Sector Planning: Agriculture and natural resource sector planning in developing countries, Spatial agricultural development planning, Inter-sectoral resource transfer process, Techniques and strategy for agricultural planning.

Planning Rural Development: Integrated rural development planning, Rural development planning in Bangladesh, Towards strategy for rural and economic development.

Labour Supply and Environment Policy: Rural-urban population structure, Nature and extent of unemployment, Dimension of labour underutilization, Contractual arrangements for labour wage policy, Rural-urban migration, Non-formal employment in Bangladesh.

Land Policy: Land development policy, Theory of land reform, Welfare basis of land reform, Land reform policies and programmes for small scale agriculture.

Food Policy: Basic needs and nutrition policy, Food grain and other food crops production and distribution policies in Bangladesh, Food security and vulnerability: FFWP, FFE, VGF evolving food.

Agricultural Pricing Policy and Marketing System: Agricultural pricing policies in developing countries-input policy, input subsidy and price support, Agricultural credit policy, Optimum pricing and marketing system, Pricing policy and marketing system in Bangladesh, Issues in food pricing policy.

Agricultural Education and Research Policy: Economics of agricultural education and research, International research system, Barriers to agricultural research in LDCs, Agricultural education and research in Bangladesh Challenges for 21st Century: Market economy, WTO, SAPTA and SAARC, Welfare aspects of different agricultural policies.

References:

Adams, Dale W. and Dougl, H. Grham (1981): A Critique of Traditional Agricultural Credit Projects and Policies. *Journal of Developing Economics*, 8(3)347-66 (ISBN-0-304-3878).

Conyers, Diana and Hill, Peter (1982): *An Introduction to Development Planning in the Third World*. John Willey & Sons, N.Y., USA.

Ghatak, S. and Ingersnt, K. (1984): *Agriculture and Economic Development*. Hervestor Press, Sussex, England.

Haque, Ejazul (1984): *The Basic Need Approach – Planning for Core Needs in Bangladesh*. University Press Limited, Dhaka.

Kenneth, E. Boulding (1951): *Principles of Economic Policy*. Prentice Hall, Inc., New Jersey, USA.

Lipton, Micheal (1974): *Towards Theory of Land Reform. Agrarian Reform and Agrarian Reformism*, Faber and Faber, London.

Malasis, L. (1975): *Agriculture and Development Process- tentative guidelines for teaching*. The UNESCO Press, Paris.

Meier, Gerald M. (1975): *Leading Issues in Economic Development*. Oxford University Press, London, UK.

Mellor, John L. (1976): *Planning and Strategy for Growth. The New Economics of Growth*, Cornell University Press, Ithaca, USA.

Raisuddin, A., Steven, H. and Towfiq-e-Elahi, C. (-----): *Out of the Shadow of Famine- evolving food markets and food policy in Bangladesh* (edited).

Satter, M.S. (2001): *Agricultural Planning and Achievement in Bangladesh*. Paragon Publishers, Dhaka, Bangladesh

Level-4, Semester-1

Course No: AF 411

Course Title: Land Resource Economics

Credit hours: 3

Introduction: Scope and content of Land Resource Economics, Concepts of land and land resources, Factors affecting supply of land resources for economic use, Importance of fixed location factor, Population distribution and land resources.

Input-output Relationships Affecting Land Use: Concept of proportionality and its application in land resources, Intensity of land use, Economic returns to land resources: nature of land rent, land rent and intensity of land use.

Development and Conservation of Land Resources: Succession in land use, Land development costs, Economic meaning of conservation, Conservation of different types of resources, Some conservation issues.

Land Resource Value and Real Estate Market: Nature of property value, Valuation and appraisal of real estate market, income and cost approaches, Characteristics of real estate market.

Property in Land Resources: Nature and scope of property rights, Types of interests in landed property, Rights in water, air and subsurface rights.

Leasing Arrangements: Tenancy and leasing arrangements, Land reform in Bangladesh, Land use planning in Bangladesh.

Urban Land Use: Issues, problems and prospects of urban land management in Bangladesh, Land administration and legislation, Development of land information system in Bangladesh.

References:

Barlowe, Raleigh (1986): Land Resource Economics- the economics of real estate. Englewood Cliffs, N.J.

Buck, John D. (1964): Land Utilization in China. Paragon.

Digby, M. (1962): Cooperatives and Land Use. Basil Blackwell.

Ely Richard T. and George S. Wehrwin (1940): Land Economics.

Hussain, T. (1995): Land Rights in Bangladesh- Problems of Management. University Press Limited, Dhaka.

Islam, Nazrul and Chowdhury, Amirul (1992): Urban Land Management in Bangladesh (edited). Ministry of Land, Dhaka.

Jacoby, Erwich H. and Charlotte F. Jacoby (1971): Man and land. Andre Deutsch Ltd., London.

Leocomber, Richard (1979): The Economics of Natural Resources. McMillan, London.

New, Lawrence I. (1955): Land and Man. Ames, Iowa State University Press.

Renne, Ronald R. (1947): Land Economics. Harper & Brothers.

Warriner, D. (1962): Land Reform and Development in the Middle East. Oxford University Press.

Webster, Johnson V. and Raleigh Barlowe (1954): Land Problems and Policies. McGraw Hill Book Company, Inc., NY.

Course No: AF 412

Course Title: Land Resource Economics

Credit hour: 1

Basic information on land resources and agriculture of Bangladesh, Relationship between area and population of Bangladesh, Study on the topography of Bangladesh, Cropping patterns of Bangladesh, Land utilization in Bangladesh, Input-output relationship in agriculture, Share cropping and leasing arrangements in agriculture, Study on the inequality in the distribution of land resources, Land price trend analysis, Least cost combination and equimarginal principle in land resource use, Study on the Agro-Ecological Zones of Bangladesh

Visits to different regions of the country- data collection and analysis to study the man-land ratio, land-man ratio, inequality in the distribution of land holdings and income, trend in land prices, input-output relationship, etc., visits to land revenue, land registry and other offices to study the process and tools used for transferring ownership rights

References:

Alam, M.F. (1975): Man-Land Adjustment in a Village of Bogra District over Last Five Years. Master's Thesis submitted to the Department of Agricultural Finance, Bangladesh Agricultural University, Mymensingh.

Barlowe, Raleigh (1986): Land Resource Economics- the economics of real estate. Englewood Cliffs, N.J.

- BBS (1999): Statistical Yearbook of Bangladesh, Bangladesh Bureau of Statistics, Ministry of Planning, Government of the People's Republic of Bangladesh, Dhaka.
- FAO (1988): Agroecological Regions of Bangladesh, Report2- Land Resource Appraisal of Bangladesh for Agricultural Development, Rome.
- Gupta, S.C. (1978): Advanced Practical Statistics. S. Chand Company Ltd., Ram Nagar, New Delhi.
- Iqbal, A. (1999): AEZ/GIS Data Base System- application in Bangladesh agriculture. A paper presented at the workshop on "Application of GIS in Agricultural Development Planning" during (10-11).08.1999 at BAU, Mymensingh.
- Islam, M.S. (1999): Agroecological Zoning- land/crop suitability. A paper presented at the workshop on "Application of GIS in Agricultural Development Planning" during (10-11).08.1999 at BAU, Mymensingh.
- Islam, T.M.T. (1989): A Review of the Farm Production Technology in Bangladesh. Bangladesh Agriculture Sector Review (Performance and Policies), Compendium Volume II, sponsored by UNDP.
- Todaro, Michael P. (1990): Economics for a Developing World. Longman Singapore Publishers (Pte) Ltd.
- Wonnacott, Ronald J. and Wonnacott, Thomas H. (1979): Econometrics. John Wiley & Sons, Singapore.

Level-4, Semester-2

Course No: AF 421

Course Title: Financial Management

Credit hours: 3

Introduction: Definition, Functions and goal of Financial Management, Functions and responsibilities of a financial manager.

Sources of Business Finance: Characteristics, types and sources of short-term finance, Characteristics, methods and sources of long-term finance, Instruments of long-term financing, Advantage and disadvantages of long-term financing.

Capital Structure: Features, Factors affecting capital structure, Capital structure and cost of capital, capital structure and financial leverage, Net income and net operating income theories of capital structure, optimum capital structure.

Leverage: Meaning, Types- operating, financial and total leverages with their measurement and interpretation
Time value of Money: Concept, Compounding, Discounting.

Cost of Capital: Different sources of capital and their cost- common stock, retained earning, debt capital and preferred stock, Weighted average cost of capital, Marginal cost of capital.

Capital Budgeting: Meaning and importance, Techniques- NPV, IRR and BCR.

Dividend Policy: Factors affecting dividend policy, Types of dividend policy, Walter and Gordon model, Miller and Modigliani Hypothesis.

Analysis of Financial Statements: Different types of ratios for measuring short-term solvency, long-term solvency, profitability and managerial efficiency.

Working Capital Management: Need for working capital, Determinants of working capital, Importance of working capital management, Estimation of working capital requirement.

References:

- Block, S.B. and Hirt, G.A. (1978): Foundations of Financial Management. Richard D. Irwin, Homewood, Illinois.
- Chandra, Prasanna (1991): Financial Management- Theory and Practice. Tata McGraw-Hill Publishing Company Ltd., New Delhi.
- Gitman, L.J. and Moses, E.A. (1987): Financial Management. West Publishing Company, Cases, Minnesota.
- Johnson, R.W. (1977): Financial Management. Allyn & Bacon, Boston.
- Khan, M.Y. and Jain, P.K. (1989): Financial Management. Tata McGraw Hill Publishing Co., New Delhi.

Level- 4, Semester-1

Course No: AF 413

Course Title: Agricultural Finance-II (Elective)

Credit hours: 3

Introduction: Meaning and increasing significance of Agricultural Finance, Agricultural financing and modern agricultural development.

Leverage and Farm Growth: Meaning and types of leverage, Organization and growth of farm, Factors limiting growth.

Time Value of Money: Meaning, Methods for determining time value of money.

Capital Budgeting: Concept, Different types of capital budgeting decision with special reference to farm business, Incorporation of inflation and risk in capital budgeting, Measures to reduce risk in farm business.

Cost of Capital: Meaning and different types of cost of capital, Cost of capital and optimal capital structure.

Financial Market for Agriculture: Financial market and intermediation, Agricultural credit in perspective, Lenders making farm loans.

Risk Management in Agriculture: Nature and types of risk in agriculture, Principles of insurance, Property, crop and liability insurance.

Agricultural Credit Institutions: Evaluation of the farm credit system and credit policies of different banks, agents and insurance companies, such as, Bangladesh bank, BKB, RKUB, BSBL, Money lenders, etc.

References:

Akhtar, S.M. (1966): Pakistan- A Developing Economy.

Barry, Peter J., Hopkin, John A. and Baker, C.B. (1983): Financial Management in Agriculture. The Interstate Printers and Publishers, Inc., USA.

Lee, Warren F., Boehlje, Michael D., Nelson, Aaron G. and Murray, William G. (1980): Agricultural Finance. The Iowa State University Press, AMES.

Nelson, Aaron G. and Murray, William G. (1967): Agricultural Finance. The Iowa State University Press, AMES.

Penson and Lins (...): Farm Financial Management.

Level- 4, Semester-2

Course No: AF 423

Course Title: Local Level Planning and Evaluation (Elective)

Credit hours: 3

Introduction: Concepts of Local Level Planning, History and importance of local level planning, Decentralization, Functions of different local government bodies, Local government institution and resource mobilization, Sources and uses of fund of local government.

Participation and Stakeholder Analysis: Different types of participation of the stakeholders in the planning process, Tools and methods of stakeholder analysis.

Collection, Analysis and Presentation of Data: Role of data in planning, Questionnaire preparation, Storing data, Organizational machinery for handling data, Tools and methods for data analysis and presentation-concept, methods and application of PRA and RRA, checklist, sketch, map and diagrams, activity chart, activity profile and case study.

Modeling and Forecasting: Nature of models, Forecasting techniques, Constraints to the use of mathematical models.

Implementation, Monitoring and Evaluation: Meaning and importance of implementation, Monitoring and evaluation, Factors affecting plan implementation.

References:

Andrews, F. and Dale, C. (1993): Participation as Process- process as growth. Grameen Trust, Mirpur-2, Dhaka.
Diana, C. and Peter, H. (1982): An Introduction to Development Planning in the Third World. John Wiley & Sons, NY, USA.

Haque, W. and Rahman, S. (1988): An Optimal Macroeconomic Planning Model for the Bangladesh Economy-strategies for self-reliant. Research Monograph # 9, BIDS, Dhaka.

Islam, M.T., Mirja, J.A. and Hossain, M.A. (1993): Statistical Method for Research- a training manual. Graduate Training Institute, BAU, Mymensingh-2202.

Mohammad, A. (1990): RRA Concepts, Methods & Applications. Agricultural Research Project-II, (supplement), BRAC/USAID, Checchi & Co.

Level- 4, Semester-2

Course No: AF 425

Course Title: Micro Credit (Elective)

Credit hours: 3

Introduction: Poverty and Finance in Bangladesh: concept and definition, Evolution of micro credit, Poverty situation in Bangladesh, Role of micro credit in poverty reduction.

Management of NGOs: Sources and procurement of fund, Credit operation policy (COP) of different NGOs

Savings Mobilization: Group fund, Emergency fund, Rate of interest and insurance.

Comparative Studies between GOs and NGOs: Micro credit programmes by GOs- micro credit programmes by commercial banks and specialized banks, Compare processes and performances of the programmes of GOs and NGOs.

Micro Credit Models in Bangladesh: Different types of micro credit models in Bangladesh: Grameen Bank, BRAC, PROSHIKA, ASA, etc.

Case Studies and Evaluation of Micro Credit Programmes: Impact studies of different micro credit programmes.

References:

Hye, Hasnat Abdul (1996): Below the Line- Rural Poverty in Bangladesh. University Press Ltd., Dhaka.

Khandaker, S.R. (1999): Fighting Poverty with Micro Credit- experiences in Bangladesh. The University Press Limited, Dhaka

Wood, G.D. and Sharif, I.A. (1997): Who Needs Credit? poverty and finance in Bangladesh. The University Press Limited, Dhaka.

Department of Agricultural Statistics

Level-1, Semester-2

Course No: Stat 123

Course Title: Descriptive Statistics

Credit hours: 3

Population and Sample. Scales of measurement: nominal, ordinal, interval and ratio scales. Different types of variables. Collection of data (Sample survey vs. complete enumeration). Frequency distribution: construction and graphical representation. Measures of location, variation and shape characteristics of curves. Random experiment, outcome, sample space. events, mutually exclusive, equally likely, independent and dependent events. Mathematical and statistical definitions of probability, compound and conditional probability. Additive and multiplicative laws of probability. Random variable, Probability function, mathematical expectation, probability distribution. Binomial, Poisson and Normal distributions. Simple random sampling, stratified random sampling, cluster sampling, two-stage and multi-stage sampling.

References:

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|--|---|
| Ali, M. A. (1969,1973) | Theory of Statistics Vol.1 & 2, Dhaka Book Mart, 38 Banglabazar, Dhaka |
| Cochran, W.G. (1977) | Sampling Technique, John Wiley & Sons, New York. |
| Gupta, S. C. & V.K. Kapoor (1982) | Fundamentals of Applied Statistics, S.Chand and Company Ltd. Ramnagar, New Delhi. |
| Shil, R. N. and S. C. Debnath (1992) | An Introduction to the Theory of Statistics, Minati Shil and Amita Debnath, Mymensingh. |
| Steel, R.G.D. and J.H. Torrie (1960) | Principles and procedures of Statistics, McGraw Hill Book Co. Inc. New York. |
| Yule, G.U. & M.G.Kendall (1965) | An Introduction to the Theory of Statistics, Charles Griffin, London. |
| আহমেদ, আব্দুর রশিদ, আলী আজগর ভূইয়া ও জুলফিকার আহমেদ রেজা (২০০১) | পরিসংখ্যানঃ তত্ত্ব ও প্রয়োগ, শামসুন নাহার আহমেদ পং,উত্তর সেওতা মানিকগঞ্জ |
| খান, মোঃ জয়নাল আবেদীন ও সুভাস চন্দ্র দেবনাথ (১৯৮৭) | প্রাথমিক পরিসংখ্যান, জাহানারা খান ও অমিত দেবনাথ, ময়মনসিংহ। |

Course No: Stat 124

Course Title: Descriptive Statistics

Credit hour: 1

Construction of frequency distribution. Graphical representation. Computation of measures of location, variation, Skewness and kurtosis. Graphical location of median, Mode and quintals. Fitting binomial, Poisson and normal distribution. Use of or Selection of samples (Simple random, stratified, cluster, two stage and multi stage) using random number tables.

References:

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|--|---|
| Ali, M. A. (1969,1973) | Theory of Statistics Vol.1 & 2, Dhaka Book Mart, 38 Banglabazar, Dhaka |
| Cochran, W.G. (1977) | Sampling Technique, John Wiley & Sons, New York. |
| Gupta, S. C. & V.K. Kapoor (1982) | Fundamentals of Applied Statistics, S.Chand and Company Ltd. Ramnagar, New Delhi. |
| Shil, R. N. and S. C. Debnath (1992) | An Introduction to the Theory of Statistics, Minati Shil and Amita Debnath, Mymensingh. |
| Steel, R.G.D. and J.H. Torrie (1960) | Principles and procedures of Statistics, McGraw Hill Book Co. Inc. New York. |
| Yule, G.U. & M.G.Kendall (1965) | An Introduction to the Theory of Statistics, Charles Griffin, London. |
| আহমেদ, আব্দুর রশিদ, আলী আজগর ভূইয়া ও জুলফিকার আহমেদ রেজা (২০০১) | পরিসংখ্যানঃ তত্ত্ব ও প্রয়োগ, শামসুন নাহার আহমেদ পং,উত্তর সেওতা মানিকগঞ্জ |
| খান, মোঃ জয়নাল আবেদীন ও সুভাস চন্দ্র দেবনাথ (১৯৮৭) | প্রাথমিক পরিসংখ্যান, জাহানারা খান ও অমিত দেবনাথ, ময়মনসিংহ। |

Level-2, Semester-1
Course No: Stat 217
Course Title: Inferential Statistics
Credit hours: 3

Simple correlation and regression analysis. Fitting simple linear regression to observed data by the method of least squares. Two variable non-linear models that can be transformed into linear models. Sampling distribution. Introduction to χ^2 , t and f distributions. Distribution of sample mean and correlation coefficient when the population distribution is normal. Introduction to the theory of estimation. Properties of estimates: unbiasedness, consistency, efficiency and sufficiency. Difference between standard deviation and standard error. Population and sample. Hypothesis, null and alternative hypotheses, type I error, type II error, level of significance. Basic steps for testing hypothesis. Statistical tests: a population mean is equal to a specified value, equality of two population means (independent & correlated), a population proportion is equal to a specified value, equality of two population proportions, significance of correlation and regression coefficients, independence of attributes.

Analysis of variance: One way and two way classifications. Basic experimental designs.

References:

References:

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| Draper, N. R. and H. Smith (1981) | Applied Regression Analysis, John Wiley, New York. |
| Gujarati, D.N. (1988) | Basic Econometrics, McGraw Hill Book Company |
| Gupta, S.C.& V.K. Kapoor (1983) | Fundamentals of Mathematical statistics, S. Chand and Company Ltd. New Delhi. |
| Shil, R.N. and S.C. Debnath (1992) | An Introduction to the Theory of Statistics Minati Shil and Amita Debnath, Mymensingh. |
| Mood, A. M.F.A. Graybill and D. C. Boes (1974) | Introduction to the Theory of Statistics, Third Edition, McGraw Hill Book Company, New York. |
| Yule, G. U. & M.G. Kendall (1965) | An Introduction to the Theory of Statistics, Charles Griffin, London |
| আহমেদ, আব্দুর রশিদ, আলী আজগর ভূইয়া ও জুলফিকার আহমেদ রেজা (২০০১) | পরিসংখ্যানঃ তত্ত্ব ও প্রয়োগ, শামসুন নাহার আহমেদ পং, উত্তর সেগতা মানিকগঞ্জ |
| খান, মোঃ জয়নাল আবেদীন ও সুভাস চন্দ্র দেবনাথ (১৯৮৭) | প্রাথমিক পরিসংখ্যান, জাহানারা খান ও অমিত দেবনাথ, ময়মনসিংহ। |

Course No: Stat 218
Course Title: Inferential Statistics
Credit hour: 1

Calculation of simple correlation coefficient. Fitting simple linear regression to observed data by the method of least squares. Fitting two variable non-linear models that can be transformed into linear models. Empirical proofs of unbiasedness and consistency properties of estimates.

Statistical tests: a population mean is equal to a specified value, equality of two population means (independent & correlated), a population proportion is equal to a specified value, equality of two population proportions, significance of correlation and regression coefficients, independence of attributes.

Analysis of variance: One way and two way classifications. Basic experimental designs.

References:

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|------------------------------------|--|
| Draper, N. R. and H. Smith (1981) | Applied Regression Analysis, John Wiley, New York. |
| Gujarati, D.N. (1988) | Basic Econometrics, McGraw Hill Book Company |
| Gupta, S.C.& V.K. Kapoor (1983) | Fundamentals of Mathematical statistics, S. Chand and Company Ltd. New Delhi. |
| Shil, R.N. and S.C. Debnath (1992) | An Introduction to the Theory of Statistics Minati Shil and Amita Debnath, Mymensingh. |

Mood, A. M.F.A. Graybill and D. C. Boes (1974)	Introduction to the Theory of Statistics, Third Edition, McGraw Hill Book Company, New York.
Yule, G. U. & M.G. Kendall (1965)	An Introduction to the Theory of Statistics, Charles Griffin, London
আহমেদ, আব্দুর রশিদ, আলী আজগর ভূইয়া ও জুলফিকার আহমেদ রেজা (২০০১)	পরিসংখ্যানঃ তত্ত্ব ও প্রয়োগ, শামসুন নাহার আহমেদ পং, উত্তর সেওতা মানিকগঞ্জ
খান, মোঃ জয়নাল আবেদীন ও সুভাস চন্দ্র দেবনাথ (১৯৮৭)	প্রাথমিক পরিসংখ্যান, জাহানারা খান ও অমিত দেবনাথ, ময়মনসিংহ।

Level-3, Semester-1

Course No: Stat 311

Course Title: Regression Analysis

Credit hours: 3

Relationship between two variables and idea of functions. Distinction between statistical and mathematical relationships. Definition of linear regression model. Linear regression for grouped data. Concept of bi-variate distribution & correlation table. Intra-class correlation. Spearman's and Kendall's rank correlation. Correlation ratio. Coefficient of contingency.

Concept of dependence of a variable on a set of independent variables. The model of a multiple linear regression and the fitting of the regression line. Usual assumptions and properties of a general regression model. Model fitness checking: properties of the coefficients, ANOVA, R^2 , \bar{R}^2 , partial correlation. Formulation and hypotheses testing regarding the parameters of the model and use of the model for forecasting. Estimation of three or more variables non-linear models that are intrinsically linear. Definition and use of orthogonal polynomials. Distinction between polynomial regression and multiple linear regression. Consequences of violations of the OLS assumptions. Detection (not estimation) of multicollinearity, autocorrelation and heteroscedasticity. Use of dummy variables (as independent) in multiple regression and interpretation of dummy/differential coefficients.

References:

Draper, N. R. and H. Smith (1981)	Applied Regression Analysis, John Wiley, New York
Gujarati, D.N. (1988)	Basic Econometrics, McGraw Hill Book Company
Johnshton, J.(1984)	Econometric methods, Third Edition, McGraw Hill, New York.
Gupta, S.C.& V.K. Kapoor (1983)	Fundamentals of Mathematical Statistics, S. Chand and Company Ltd. New Delhi.
Shil, R.N. and S.C. Debnath (1992)	An Introduction to the Theory of Sstatistics, Minati Shil and Amita Debnath, Mymensingh.
Yule, G, U. & M. G. Kendall (1965)	An Introduction to the Theory of Statistics, Charles Griffin London.
আহমেদ, আব্দুর রশিদ, আলী আজগর ভূইয়া ও জুলফিকার আহমেদ রেজা (২০০১)	পরিসংখ্যানঃ তত্ত্ব ও প্রয়োগ, শামসুন নাহার আহমেদ পং, উত্তর সেওতা মানিকগঞ্জ

Course No: Stat 312

Course Title: Regression Analysis

Credit hour: 1

Calculation of simple correlation coefficient from bi-variate/correlation tables. Calculation of partial correlation coefficients, intra-class correlation, Spearman's and Kendall's rank correlation, correlation ratio and contingency coefficient. Fitting of multiple linear regression. Analysis of variance. Calculation of multiple correlation coefficient R^2 and \bar{R}^2 . Fitting polynomial regressions. Use of orthogonal polynomials. Testing linearity of regression. Test of significance of total, partial and multiple correlation coefficients and regression coefficients. Determining the order of a polynomial. Detection (not estimation) of multicollinearity, autocorrelation and heteroscedasticity. Use of dummy variables (as independent) in multiple regression and interpretation of dummy/differential coefficients.

References:

Draper, N. R. and H. Smith (1981)	Applied Regression Analysis, John Wiley, New York
Gujarati, D.N. (1988)	Basic Econometrics, McGraw Hill Book Company
Johnshton, J.(1984)	Econometric methods, Third Edition, McGraw Hill, New York.
Gupta, S.C.& V.K. Kapoor (1983)	Fundamentals of Mathematical Statistics, S. Chand and Company Ltd. New Delhi.

Shil, R.N. and S.C. Debnath (1992) An Introduction to the Theory of Statistics, Minati Shil and Amita Debnath, Mymensingh.

An Introduction to the Theory of Statistics, Charles Griffin London.

Yule, G. U. & M. G. Kendall (1965)

আহমেদ, আব্দুর রশিদ, আলী আজগর ভূইয়া ও জুলফিকার আহমেদ (২০০১) পরিসংখ্যানঃ তত্ত্ব ও প্রয়োগ, শামসুন নাহার আহমেদ পং, উত্তর সেওতা মানিকগঞ্জ

Level-4, Semester-1

Course No: Stat 411

Course Title: Economics Statistics

Credit hours: 2

Concept of time series and cross section data. Components of a time series. Modeling time series data: Linear, Exponential, Gompertz, polynomial and logistic models. Exponential smoothing and seasonal decomposition. Calculation of seasonal effects/indices using moving average and dummy variable regression techniques.

Index numbers, construction and problems involved in constructing index numbers. Statistical methods/methodologies of constructing price and cost of living indices. Base shifting, splicing and deflating of index numbers. Uses and limitations of index numbers.

Statistical methods of estimating demand and supply functions and various elasticity coefficients. Types of data required for empirical demand analysis. Statistical investigation of the relationship between income and the share of income spent on food (Engel's Law). Lorenz curve and its role in measuring inequalities of income distributions. Types of data that is needed to estimate Pareto's law of income distribution. Estimation of the parameters of Pareto's law.

References:

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|------------------------------------|---|
| Anderson, T.W. (1971) | The Statistical Analysis of Time Serie, Wiley, New York. |
| Gujarati, D.N. (1988) | Basic E conometrics, McGrow Hill Book Company |
| Gupta, S.C. & V.K. Kapoor | Fundamentals of Applied Statistics, S. Chand and Company Ltd. New Delhi. |
| Shil, R.N. and S.C. Debnath (1992) | An Introduction to the Theory of Statistics, Minati Shil and Amita Debnath, Mymensingh. |
| Fuller, W.A. (1976) | Introduction to Statistical Time Series, Wiley , New York. |
| Kendall, M.G. and A. Stuart (1966) | The advanced Theory of Statistics, Charles Griffin, London. |

Course No: Stat 412

Course Title: Economics Statistics

Credit hour: 1

Modeling time series data: Linear, exponential, Gompertz, polynomial and logistic models. Exponential smoothing and seasonal decomposition. Calculation of seasonal effects/indices using moving average and dummy variable regression techniques. Construction of various index numbers including price and cost of living indices. Base shifting, splicing and deflating of index numbers.

Estimation demand and supply functions and various elasticity coefficients. Estimation of the relationship between income and the share of income spent on food (Engel's Law). Estimation of Lorenz curve Gini coefficient. Fitting Pareto's law of income distribution to observed data.

References:

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|------------------------------------|---|
| Anderson, T.W. (1971) | The Statistical Analysis of Time Serie, Wiley, New York. |
| Gujarati, D.N. (1988) | Basic E conometrics, McGrow Hill Book Company |
| Gupta, S.C. & V.K. Kapoor | Fundamentals of Applied Statistics, S. Chand and Company Ltd. New Delhi. |
| Shil, R.N. and S.C. Debnath (1992) | An Introduction to the Theory of Statistics, Minati Shil and Amita Debnath, Mymensingh. |
| Fuller, W.A. (1976) | Introduction to Statistical Time Series, Wiley , New York. |
| Kendall, M.G. and A. Stuart (1966) | The advanced Theory of Statistics, Charles Griffin, London. |

Course No: Stat 413

Course Title: Econometrics
Credit hours: 2

Nature, Scope and limitations of Econometrics. Raw materials of econometrics; Economic and econometric models. Estimation of a multiple linear regression model under multicollinearity, autocorrelation and heteroscedasticity. Regression when the dependent variable is dummy or proportion: LPM, Logit, Probit and Tobit models. Specification problem and bias; Errors in variables. Autoregressive and distributed lag models. Formulation and identification of simultaneous equation models. Estimation methods of simultaneous equation models: ILS and 2SLS. Use of instrumental variables. Production Function. Input and Output Analysis.

References:

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|--|---|
| Draper, N. R. And H. Smith (1998) | Applied Regression Analysis, Jhon Wiley, New York. |
| Gujarati, D. N. (2003) | Basic Econometrics, McGraw Hill Book Company |
| Johnston, J. (1984) | Econometric Methods, McGraw Hill, New York |
| Judge, G.G. et al. (1988) | Introduction to the Theory and Practice of Econometrics, Second Edition, Wiley, New York. |
| Kelijian, H.H. and Oates, W.E. (1981) | Introduction of Econometrics, Harper and Raw, New York, London. |
| Koutsoyiannis, A. (1986) | Theory of Econometrics (Latest edition), The Macmillan Press Ltd, London. |
| Rao, P. & Miller, R.L. (1971) | Applied Econometrics, Belmont, California, Wadsworth. |
| Singh, S.P; Parashar , A.K. and Singh, H.P.(6 th edition, 1997) | Econometrics and Mathematical Economics, S. Chard & Co, Ltd; Ram Nagar, New Delhi-110 055 |

Course No: Stat 414
Course Title: Econometrics
Credit hour: 1

Estimation of parameters of multiple linear regression model under multicollinearity, autocorrelation and heteroscedasticity. Estimation of parameters of regression when the dependent variable is dummy or proportion: LPM, Logit and Probit models. Estimation of simultaneous equation models by ILS and 2SLS. Estimation of parameters of Cobb-Douglas production function and C.E.S. production function. Construction of input-output table.

References:

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|--|---|
| Draper, N. R. And H. Smith (1998) | Applied Regression Analysis, Jhon Wiley, New York. |
| Gujarati, D. N. (2003) | Basic Econometrics, McGraw Hill Book Company |
| Johnston, J. (1984) | Econometric Methods, McGraw Hill, New York |
| Judge, G.G. et al. (1988) | Introduction to the Theory and Practice of Econometrics, Second Edition, Wiley, New York. |
| Kelijian, H.H. and Oates, W.E. (1981) | Introduction of Econometrics, Harper and Raw, New York, London. |
| Koutsoyiannis, A. (1986) | Theory of Econometrics (Latest edition), The Macmillan Press Ltd, London. |
| Rao, P. & Miller, R.L. (1971) | Applied Econometrics, Belmont, California, Wadsworth. |
| Singh, S.P; Parashar , A.K. and Singh, H.P.(6 th edition, 1997) | Econometrics and Mathematical Economics, S. Chard & Co, Ltd; Ram Nagar, New Delhi-110 055 |
| Shil, R. N. and S.C. Debnath (1992) | An Introduction to Theory of Statistics, Minati Shil and Amita Debnath, Mymensingh. |
| Yule, G.U. & M. G. Kendall (1965) | An Introduction to the Theory of Statistics, Charles Griffin, London. |

Department of Agribusiness and Marketing

Level-2, Semester-1

Course No: AM 211

Course Title: Management Accounting

Credit hours: 3

Fundamental Concepts of Accounting: Debit, Credit, Business Transactions, Ledger Posting Double Entry System of Accounting and Accounting cycles.

Accounts and its classifications: Cash Book. Classification of Assets & Liabilities. Final Accounts with adjustments. Bills of Exchange.

Concepts of Costs: Elements of Cost and Cost classification, Break-even Analysis and Cost-Profit-Volume Relationship.

Application of Accounting Principles to Agro-based Institutions: Crop, Poultry and Dairy Farms.

References:

Hoque & Hasan (2000): Advanced Accountancy Vol. 1 & 11 (in Bangla)

Jaon & Naraug (1978): Practical Problems in Cost Accounting, Kalyani Publishers, New Delhi.

Khan, Muinuddin (1998): Advanced Accounting, Vol. I & II

Nigam & Sarma (1984): Cost Accounting, Himalaya Publishing House, India.

Murthy, Guruprasad (1987): Management Accounting, Himalaya Publishing House, New Delhi-110002.

Miller, Dearfoss & Smith (1982): Intermediate Accounting, Richard D.Irwin Inc. Illinois 60430, USA.

Level-2, Semester-2

Course No: AM 221

Course Title: Principles of Marketing

Credit hours: 3

Introduction: Basic concepts of marketing, Marketing system Vs marketing process, Role of marketing in economic development, Approaches to the study of marketing.

Marketing functions and institutions: Exchange functions, physical functions, facilitating functions; Marketing institutions: Market intermediaries, agent intermediaries, facilitating agencies.

Marketing channels: Meaning, role, classification & distribution, choice of channels and intermediaries, distribution channel, policies & strategies, other aspects of channel management, conflict and cooperation in distribution channels. Marketing costs and margins, measuring marketing efficiency, marketing mix.

Market organization: Specialization, diversification and integration.

Marketing research and information system: Meaning, scope and limitations, marketing research procedure, types and techniques of marketing research and value chain analysis. **Problems of agricultural marketing in Bangladesh,** Marketing extension method and techniques, Cooperative marketing

References:

Acharaya S.S. and N. L. Agrawal (1999): Agricultural Marketing in India, 3rd edition, oxford and IBH Publishing Co. Pvt. Ltd. New Delhi 1100 001.

Branson, R.E. and D.G. Norvell (1983): Introduction of Agricultural Marketing. McGraw Hill Book Company, New York.

Evans, J.R. and B. Berman (1987): Marketing, 3rd edition, Macmillan Publishing Company, New York.

Ghandi. J.C. (1985): Marketing A Managerial Introduction. Tata McGraw-Hill Publishing Company Limited, New Delhi.

Kohls, R. L & J.N Uhl (1980): Marketing of Agricultural Products, Prentice-Hall of India Private Limited (9th Edition), New Delhi.

Kotler, P. and G. Armstrong (2003): Principles of Marketing, 10th Edition, Englewood Cliffs, New Jersey 07632.

Kotler, P. (2001): Marketing Management, The Millennium Edition, Prentice Hall of India Private Limited, New Delhi-110001.

Purcell, W.D. (1979): Agricultural Marketing: System, Coordination, Cash and Future Prices. A Prentice- Hall Company Reston, Virginia 22090.

Master's Theses submitted to the Department of Agribusiness and Marketing on the relevant field of marketing.

Course No: AM 223

Course Title: Business Principles and Entrepreneurship Development

Credit hours: 2

Business Environment: Meaning, Environment and Development of Business.

Elements of Business Environment

Natural Factors: Natural environmental factors affecting sectors, Form and scale of business and economy.

Economic Factors: Different economic policies and their influence on sectoral development, Forms of business organization and scale of business.

Technological Factors: Technological advancement and growth of business, Capital oriented technology vs. labor oriented technology.

Socio-cultural Factors: Socio-cultural tradition and growth of business, their forms etc., Social responsibility of business and influence of business on socio-cultural change.

Legal and Political Factors: Legal framework and growth of business, Political environment and its effect on business development. International factors affecting business development.

Entrepreneurship Development: Concepts and meaning of entrepreneurship, Entrepreneur and Entrepreneurship, Entrepreneurship as a factors of economic development, Theories of entrepreneurship, Characteristics of entrepreneurship, Entrepreneurship motivation, Environment of entrepreneurship development, History of entrepreneurship development – Japan, USA, UK, India, Pakistan, Bangladesh, Sources and procedures of government and private assistances for entrepreneurs in Bangladesh, Governmental regulations concerning entrepreneurship development, problems of entrepreneurship development in Bangladesh, Preparation of business plan by entrepreneurs: Case studies of entrepreneurs.

References:

S.A. Kumar (2003): Entrepreneurship Development, New Age International.

S.K. Mohanty (2005): Fundamentals of Entrepreneurship, PHI Learning Pvt. Ltd.

S. Uddin (1989): Entrepreneurship Development in India, Mittal Publications.

B.C. Tandan (2010): Theories of Entrepreneurship Development,

Copulsky, W. and H. W. McNulty (1974): Entrepreneurship & the Corporation, AMACOM, New York.

Hisrich, R. D., M. P. Peters and D. A. Shepherd (2011): Entrepreneurship, 6th ed., The McGraw Hill Companies, New York.

Khan, A. R. (2000): Entrepreneurship- Small Business and Lives of Successful Entrepreneurs, Ruby Publications, Dhaka.

Khanka, S. S. (2004): Entrepreneurial Development, S. Chand and Company Ltd., New Delhi.

Vasant, DCSAI, (2003): Entrepreneurship, Himalaya Publishing House.

Taneja & S.L. Gupta (2003). Entrepreneurship Development.

Tandon, B.C, (): Environment and Entrepreneur, Chug Publications, Allahabad.

Shukla, M. C. (2000): Business organization and Management, S. Chand and Company Ltd., New Delhi.

Siner A. D Entrepreneurial Megabucks, John Wiley and sons, New York.

Srivastava S.B. (1981): A Practical Guide to Industrial Entrepreneurs, Sultan Chand and Sons, New Delhi.

Chandra, P. Project Preparation, Appraisal, Implementation: Tata McGraw Hill, New Delhi.

Level-3, Semester-1

Course No: AM 311

Course Title: Cooperatives in Theory and Practice

Credit hours: 2

Cooperatives in Economics System,

Definition and Principles of Cooperation: Types and Forms of Cooperatives; Cooperatives and other Business Organizations,

Determinants of Success of Cooperatives: Organizing, Financing and Management of cooperatives; Cooperative movement in British India,

History of Cooperatives in Bangladesh, Cooperative farming and Contact farming.

Cooperatives and Rural development

References:

Abrahamsen & Scroggs (1958): Agricultural Cooperation, University of Minnesota Press, Minneapolis.

Bakken, H.H. (1968): Basic Concepts, Principles and Practices of Cooperation, Mimir Publishers Inc. Madison Wisconsin.

Bedi, Raghudas Dev. Himalaya Publishing House Mumbai.

Trevor, B. (1979): An Introduction to Cooperatives, Intermediate Technology Publications Ltd. London.

Roy, E.P. (1969): Cooperatives: To-day and To-morrow Illinois, The Interstate Printers and Publisher Inc.

Fogelstran; K. (1992): Towards Genuine Cooperatives; International Cooperative Alliance. New Delhi.

Hussain, A.M.M. (1964): A Model Cooperative Organization for Agricultural Development in East Pakistan, PhD Thesis, Texas A&M University.

McBride (1986): Glynn: Agricultural Cooperatives- Their why & their how, AVI publishing company Inc. West Port. U.S.A.

Sharada, V. (1986): Theory of Cooperation Himalaya Publishing House, Bomabay.

Sinha, S.K. & R. Sahaya (1981): Management of Cooperatives Enterprises; Principles of Practices, National Council for cooperative Training New Delhi. 11001666.

Sinha, S.K. & R. Sahaya (1988): Role of Government in promoting Cooperatives development in Asia- ICA ROAP Downs Trust. ICS New Delhi. 110065.

Bottomely T. (1979): An Introduction to Cooperatives, Intermediate Technology Publications Ltd. London.

United States Department of Agriculture (2011): Cooperative Theory, Practice, and Financing: A Dairy Cooperative Case Study, Rural Business and Cooperative Programs, Research Report 221.

Dwivedi, R.C (1989): Role of Government in promoting Cooperatives Development in Asia: report of the Asian Regional Consultation Singapore

Course No: AM313

Course Title: Agricultural Price Analysis

Credit hours: 3

Introduction: Meaning and concept, Role and functions of prices, General characteristics of agricultural prices, Nominal and real price changes.

Demand for agricultural products: Review of consumers' demand, Determinants of demand, Demand elasticities, Cross price elasticities, Derived demand.

Supply of agricultural products: Determinants of supply and its relation to cost and production function, Factors influencing agricultural supply, Supply elasticities, Empirical supply relationships.

Price determination: Perfect and imperfect competition, Different market environments.

Marketing margins: Definition, Incidence of margin changes, Derived demand and Marketing margin.

Spatial price relationships: Determining transfer costs, Law of one price, Market integration and spatial price variation, Spatial equilibrium models, Trade barriers.

Price variation over time: Nature and causes of price variation, Seasonal price variation, Trend, Cyclical variation.

Aggregate farm price behaviour: Measurement of aggregate price movement, Inflation, Deflation, Devaluation and impact on farm prices.

References:

- Acharya, S.S. and N.L. Agarwal (1994): Agricultural Prices- Analysis and Policy, New Delhi, Oxford & IBH Publishing Co. Pvt. Ltd.
- Ahuja, H.L. (2004): Modern Microeconomics-Theory and Applications, 12th ed., New Delhi: Sultan Chand.
- Dahl, D.C. and J.W. Hammond (1977): Market and Price Analysis: The Agricultural Industries, New Delhi: McGraw-Hill.
- Ferris, J.N. (1998): Agricultural Prices and Commodity Market Analysis, Boston: WCB/McGraw-Hill.
- Henderson, J.M. and R.E.Quandt (1980): Microeconomics Theory: A Mathematical Analysis, 3rd Edition, New York: McGraw-Hill.
- Hirshleifer, Jack (1976): Price Theory and Applications. Prentice/Hall International, Inc., London.
- Scott, G.J. (1995): Prices, Products and People: Analyzing Agricultural Markets in Developing Countries, Lynne Rienner Publishers, Boulder, London.
- Tomek, W.G. and Robinson (1990): Agricultural Product Prices, 3rd Edition, Ithaca: Cornell University Press.
- Waugh, F.V. (1964): Demand and Price Analysis: Some Examples from Agriculture, USDA Tech. Bul. 1316

Course No: AM 314

Course Title: Agricultural Price Analysis

Credit hour: 1

Measuring Demand, Supply and Equilibrium.
Government Intervention on Agricultural Prices
Estimation Price Elasticities and Flexibilities.
Estimation Supply Response Elasticities
Measuring Seasonal Price Variation
Measuring Market Integration.
Formation of Index Number.

References:

- Acharya, S.S. and N.L. Agarwal (1994): Agricultural Prices- Analysis and Policy, New Delhi, Oxford & IBH Publishing Co. Pvt. Ltd.
- Gujrati, N.G. (1998): Basic Econometrics, New York: McGraw-Hill.
- Gupta, S.C. and V.K. Kappor (1990): Fundamentals of Applied Statistics, New Delhi: Sultan Chained & Sons.
- Dahl, D.C. and J.W. Hammond (1977): Market and Price Analysis: The Agricultural Industries, New Delhi: McGraw-Hill.
- Ferris, J.N. (1998): Agricultural Prices and Commodity Market Analysis, Boston: WCB/McGraw-Hill.
- Henderson, J.M. and R.E.Quandt (1980): Microeconomics Theory: A Mathematical Analysis, 3rd Edition, New York: McGraw-Hill.
- Pindyck, R.S. and D.L. Robinfeld (1981): Econometric Models and Economic Forecasts, Singapore: McGraw-Hill.
- Scott, G.J. (1995): Prices, Products and People: Analyzing Agricultural Markets in Developing Countries, Lynne Rienner Publishers, Boulder, London.
- Tomek, W.G. and Robinson (1990): Agricultural Product Prices, 3rd Edition, Ithaca: Cornell University Press.
- Waugh, F.V. (1964): Demand and Price Analysis: Some Examples from Agriculture, USDA Tech. Bul. 1316

Level-3, Semester-2

Course No: AM 321

Course Title: Institutional Economics and Rural Development

Credit hours: 3

Understanding institutions: Defining institutions, Categorizing institutions, The new institutional economics, Transaction cost economics, Property rights, Social capital, Theory of collective action.

Rationality: Rationality as maximizing objective, The model of bounded rationality, Rationality and institutions.

Explaining institutional change: Spontaneous institutional change, Institutional change as designed: the creation of efficiency, Institutional change as designed: the role of interests, values and power, Development of institutions.

Resource regimes: Property rights, property regimes and resource regimes, Analyzing resource regimes

Rural development: Its meaning, Concepts and theories, Policies for rural development, Strategies and determinants of rural development, Sustainable livelihood framework, Rural development program organized by public organizations and NGOs

Measures of Poverty and development: Head count ratio, poverty gap index, squared poverty gap index, Human development index, Human poverty index, physical quality of life index, Lorenz curve, Gini coefficient

References:

Menard, Claude, Shirley, Mary M. (eds.) (2005): Handbook of New Institutional Economics, Springer, US.

Kasper, W. and M.E. Streit (1998): Institutional Economics, Social order and Public Policy, Edward Elgar.

Furubotn, E.G. and R. Richard (1991): The New Institutional Economics: A Collection of Articles from the Journal of Institutional and Theoretical Economics, Morh Siebeck.

Loasby, B. J. (1999): Knowledge, Institutions, and Evolution in Economics, Rourledge.

Hodgson, G.M. (2004): The Evolution of Institutional Economics: Agency, Structures, and Darwinism in American Institutionalism, Routledge.

North, D.C. (1990): Institutions, Institutional Change and Economic Performance, Cambridge: Cambridge University Press.

Ostrom, E. (1990): Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge: Cambridge University Press.

Quddus, M.A. (1996): Rural Development in Bangladesh- Strategies and Experiences, 2nd ed. BARD, Comilla.

Singh K. (1986): Rural Development-Principles, Policies and Management. New Delhi, Sage Publications India Pvt. Ltd

Course No: AM 322

Course Title: Institutional Economics and Rural Development

Credit hour: 1

Visiting rural development institutions/reviewing local government institutions/reviewing NGO development initiatives, Women and youth development and poverty alleviation programmes/reviewing irrigation management schemes at private and public sector.

References:

North, D.C. (1990): Institutions, Institutional Change and Economic Performance, Cambridge: Cambridge University Press.

Ostrom, E. (1990): Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge: Cambridge University Press.

Quddus, M.A. (1996): Rural Development in Bangladesh- Strategies and Experiences, 2nd ed. BARD, Comilla.

Singh K. (1986): Rural Development-Principles, Policies and Management, New Delhi: Sage Publications India Pvt. Ltd

Todaro, M.P. and S.C. Smith (2007): Economic Development, 8th ed. Persons Education Ltd.

Vatn A. (2005): Institutions and the Environment, Cheltenham,UK: Edward Elgar Publishing Ltd.

Williamson, O.E. (1985): The Economic Institutions of Capitalism, New York: Free Press.

Williamson, O.E. (2000): The new institutional economics: taking stock/looking ahead. Journal of Economic Literature, 38(3):595-613.

Course No: AM323

Course Title: Agricultural Marketing

Credit hours: 3

The Market System and the Operating Environment: Market System, Economic Environment, Public Policy and the Market & Government Programs.

Functional & Organizational issues: Market and Bargaining Power, Risk Management and Futures Market, Market Development, Demand Expansion and Informal Marketing, Post-Harvest Handling of Farm Products, Agricultural Marketing Information System, How to write a Simple Marketing Plan.

Evaluation of agricultural marketing in Bangladesh: Marketing of agricultural inputs: Seed, fertilizer, pesticides, equipment, and credit.

Marketing of agricultural products: Rice, Jute, Cotton, Tea, Potato, Vegetables, Fish and Livestock products (cattle, milk, egg and broiler).

References:

Acharaya S.S. and N.L Agrawal (1999): Agricultural Marketing in India, 3rd edition, oxford and IBH Publishing Co. Pvt. Ltd. New Delhi 1100 001.

Haque, A. (2004): Changing Role of Agricultural Marketing in Bangladesh, Moinuddin.

Ghandi, J.C. (1985): Marketing A Managerial Introduction, Tata McGraw Hill Publishing company Limited, New Delhi.

Price, W.M. and O.C. Ferrell (1987): Marketing Basic Concepts and Decisions, Houghton Mifflin company Boston.

Purcell, W.(1995): Agricultural Marketing – System, Coordination, Cash and Future Prices

Master's Thesis submitted to the Department of Cooperation and Marketing on the relevant field of marketing.

Course No: AM324

Course Title: Agricultural Marketing

Credit hour: 1

Measuring Marketing Margin and Price Spread.

Measuring Cost Structure of Warehousing of Agricultural Products.

Estimation of Marketable and Marketed Surplus.

Estimation of Marketing Efficiency.

Analyzing Agricultural Import and Export.

Visit to markets, presentational of papers.

References:

Acharaya S.S. and N.L Agrawal (1999): Agricultural Marketing in India, 3rd edition, oxford and IBH Publishing Co. Pvt. Ltd. New Delhi 1100 001.

Haque, A. (2004): Changing Role of Agricultural Marketing in Bangladesh, Moinuddin.

Ghandi, J.C. (1985): Marketing A Managerial Introduction, Tata McGraw Hill Publishing company Limited, New Delhi.

Price, W.M. and O.C. Ferrell (1987): Marketing Basic Concepts and Decisions, Houghton Mifflin company Boston.

Purcell, W.(1995): Agricultural Marketing – System, Coordination, Cash and Future Prices

Level-4, Semester-1

Course No: AM 411

Course Title: Introduction to Agribusiness

Credit hours: 3

Introduction to Agribusiness: The Agribusiness system: The system, size and scope of Agribusiness, The sectors of Agribusiness, The input sector, the production sector, the processing and manufacturing sector. Three sectors in the context of Bangladesh.

The Role of Marketing in the Agribusiness System: The Evolution of the Marketing System: The advantages of specialization and trade, The conflicting needs of producers and consumers, The efficient economic system, Functions and utilities of marketing, The development of marketing in Agribusiness.

Evaluating the Performance of the Marketing System: The structure-conduct-performance model, Government intervention in markets.

The Role of Marketing in the Agribusiness: Five approaches to the market, Agribusiness and Marketing Approach, Functions of Management, Marketing mix.

Understanding the Marketing Environment: Consumer demand, Profit evaluation, Total revenue, Price changes and elasticity, Factors that influence demand, Demand shifters.

Understanding Agricultural Supply and Agricultural Markets: Production function and determining economic efficiency, The law of one price, Market environments, Agricultural markets, Characteristics of agricultural supply and demand.

The Agricultural Marketing System: The Agricultural input industries, Production agriculture, Identifying the marketing alternatives, The commodity processing and food manufacturing industries, The marketing channels, Locating processing and manufacturing facilities, Structure of the marketing channels, channel leadership.

The Food Wholesaling and Retailing Industries: The development of retail food chain stores, Food merchandising techniques.

Agribusiness Marketing Plan: The business plan, The marketing plan, The relationship between well-defined marketing goals and long run profits, Market structure and the marketing plan.

References:

Ricketts, C. and N.O. Rawlins (2001): Introduction to Agribusiness, Delmar.

Seperich, G.J. M.W. Woolverton and J.G. Beierlein (1994): Introduction to Agribusiness and Marketing, Prentice Hall Career & Technology.

Cramer, G. L. and C.W. Jensen (1991). Agricultural Economics and Agribusiness, 5th ed., John Wiley & Sons, Inc. Singapore.

Drilon, J. D. (1971). Introduction to Agribusiness Management, Asian Productivity Organizations, Tokyo.

Beierlein, James G. and M. W. Woolverton (1991): Agribusiness Marketing – The Management Perspective, Prentice Hall, Englewood Cliffs, New Jersey.

Rooyen, C.J. van, O.T. Doyer, L. D’Haese & F. Bostyn (ed.). (2002): Readings in AGRIBUSINESS -A Source Book for Agribusiness Training.

Reading Case Writing on Agribusiness.

Course No: AM412

Course Title: Introduction to Agribusiness

Credit hour: 1

Visit to agribusiness firm, Individual case writing covering inputs market, Organization and management of production activities, Marketing approaches followed, Management mix adopted, Economies of production and distribution of outputs.

References:

Ricketts, C. and N.O. Rawlins (2001): Introduction to Agribusiness, Delmar.

Seperich, G.J. M.W. Woolverton and J.G. Beierlein (1994): Introduction to Agribusiness and Marketing, Prentice Hall Career & Technology.

Cramer, G. L. and C. W. Jensen (1991). Agricultural Economics and Agribusiness, 5th ed., John Wiley & Sons, Inc. Singapore.

Drilon, J. D. (1971). Introduction to Agribusiness Management, Asian Productivity Organizations, Tokyo.

Beierlein, James G. and M. W. Woolverton (1991): Agribusiness Marketing – The Management Perspective, Prentice Hall, Englewood Cliffs, New Jersey.

Rooyen, C.J. van, O.T. Doyer, L. D’Haese & F. Bostyn (ed.). (2002): Readings in AGRIBUSINESS -A Source Book for Agribusiness Training.

Reading Case Writing on Agribusiness.

Level-4, Semester-2

Course No: AM 421

Course Title: Research Methods in Agricultural Economics

Credit hours: 3

Basic concepts of science: classification & limitations of science. Logic-fallacies deduction and inferences, fact-theory-scientific law-values.

Basic elements of scientific methods and elements of social research: classification of research methods approaches of basic and applied research.

Research process steps in social research: Identification of research problem. Data requirement and methods of data collection. Hypothesis-research design-literature search

Sampling methods: fundamentals of estimation data collection instruments measurement. Producing of data analytical techniques interpretation of data reporting research results and effective communication quick research appraisal techniques (PRA, RRA methods), Preparing research proposals.

Scientific Referencing.

References:

- Babbie, E. (2004): The Practice of Social Research, 10th ed., Thomson Asis Pte. Ltd., Singapore.
- Babin, Z. and C. Griffin (2010): Business Research methods, 8th ed., Cengage Learning international Office, Canada.
- Boyd, H.W., R. Westfall and S.F. Stasch (1990): Marketing Research, Richard D. Irwin, Inc. Homewood Illinois.
- Bellur, V. V. (1987): Marketing Research: Theory and Practice, Himalaya Publishing House, Mumbai.
- Goode, W.J. & K.H. Paul (1952): Methods in Social Research, McGraw Hill, International Edition, Tokyo.
- Gupta, S. (1993): Research Methodology & Statistical Techniques, Deep & Deep Publications. New Delhi.
- Kothari C.R. (1990): Research Methodology-Methods and Techniques, Wishwa Prakashan, New Delhi.
- Mishra, R.P. (1989): Research Methodology-A Handbook, Concept Publishing Company, New Delhi 110059.
- Mohammad, A. (1990): PRA-Concepts, Methods and Applications, BARC/USAID/ CHECCHI & Co.
- Panneerselvam, R. (2007): Research Methodology, Prentice –Hall of India, New Delhi.
- Punch, K.F. (2005): Introduction to Social Research-Quantitative and Qualitative Approach, 2nd ed., Sage Publications Ltd., London.
- Sharma BAV. (1985): Research Methodology in Social sciences, Sterling Publishers Pvt. Ltd. New Delhi.
- Sufian, A.J.M. (1998): Methods and Techniques of Social Research, The University Press Limited, Dhaka.
- Kearlinger, F.N. and H.B. Lee (2000): Foundations of Behavioural Research, 2nd Edition., Surject Publications, Delhi, India.

Course No: AM 422

Course Title: Research Methods in Agricultural Economics

Credit hour: 1

Quantitative techniques in research.

Sampling procedures, applications, estimation.

Formulating research problem.

Preparation of research proposal, questionnaire and schedules.

Parametric and non-parametric tests.

Structure of references/ bibliography.

Hands on practice on Rapid Rural Appraisal (RRA/PRA) Techniques.

References:

- Babbie, E. (2004): The Practice of Social Research, 10th ed., Thomson Asis Pte. Ltd., Singapore.
- Babin, Z. and C. Griffin (2010): Business Research methods, 8th ed., Cengage Learning international Office, Canada.
- Boyd, H.W., R. Westfall and S.F. Stasch (1990): Marketing Research, Richard D. Irwin, Inc. Homewood Illinois.
- Bellur, V. V. (1987): Marketing Research: Theory and Practice, Himalaya Publishing House, Mumbai.
- Goode, W.J. & K.H. Paul (1952): Methods in Social Research, McGraw Hill, International Edition, Tokyo.
- Gupta, S. (1993): Research Methodology & Statistical Techniques, Deep & Deep Publications. New Delhi.

- Kothari C.R. (1990): Research Methodology-Methods and Techniques, Wishwa Prakashan, New Delhi.
- Mishra, R.P. (1989): Research Methodology-A Handbook, Concept Publishing Company, New Delhi 110059.
- Mohammad, A. (1990): PRA-Concepts, Methods and Applications, BARC/USAID/ CHECCHI & Co.
- Panneerselvam, R. (2007): Research Methodology, Prentice –Hall of India, New Delhi.
- Punch, K.F. (2005): Introduction to Social Research-Quantitative and Qualitative Approach, 2nd ed., Sage Publications Ltd., London.
- Sharma BAV. (1985): Research Methodology in Social sciences, Sterling Publishers Pvt. Ltd. New Delhi.
- Sufian, A.J.M. (1998): Methods and Techniques of Social Research, The University Press Limited, Dhaka.
- Kearliger, F.N. and H.B. Lee (2000): Foundations of Behavioural Research, 2nd Edition., Surject Publications, Delhi, India.

Level- 4, Semester-1

Course No: AM413

Course Title: Legal Environment of Business (Elective)

Credit hours: 3

Introduction to law: Dispute resolution, Common law, Statutory law and Administrative law, Intentional torts and business torts.

Negligence and strict liability: Employment law,

Introduction to Contracts: Agreement, Consideration, Legality contracts, Capacity and consent, written contracts.

Business ethics: corporate social responsibility, Corporate governance and Critical thinking
Intellectual property and Unfair competition, Rights of third parties, Performance and remedies.

Introduction to forms of business and formation of partnerships, Operation of partnerships and related forms;
Partners' dissociation and partnerships 'Dissolution and winding up

Limited liability companies, Limited partnerships and Limited liability, Limited partnerships

History and nature of corporations: Organizational and financial, Structure of corporations, Management of corporations

References:

John R. A. and R. A. (2008): Business Law, 10th Edition, Prentice –Hall Publication Inc.

Mallor, J.P. (2001): Business Law and the Regulatory Environment, Concept and Cases, Irwin Mc. Graw Hill

Mallor, J. P., A.J. Barnes, L. Thomas. Bowers and A.W. Langvardt (2005): Business Law - The Ethical, Global, and E-Commerce Environment, 13th ed.

Samuelson, B. (2007): Business Law and the Legal Environment.

Level- 4, Semester-1

Course No: AM415

Course Title: Consumer Behaviour (Elective)

Credit hours: 3

Consumers in the Marketplace: What is customer behaviour?

Consumers as Individuals: Learning and memory, Motivation and values, Personality and lifestyles, Attitude formation and change.

Consumers as Decision Makers: Individual decision making, Purchase, Post purchase and Disposal, Organizational and household decision making.

Consumers and Subcultures: Income and Social Class, Ethnic, Racial, and Religious, Subcultures, Age subcultures.

Consumers and Culture: Cultural influences on consumer behaviour, Creation and diffusion of consumer culture.

References:

Berkmen, H. W. and C. Christopher (1978): Consumer Behavior (Concepts and Strategies), Gilson Kent Publishing Company.

Solomon, M (1999): Consumer Behavior, 5th Ed. Prentice Hall

Hoyer, W.D., D.J. MacInnis (2008): Consumer Behaviour, Cengage Learning.

Solomon, M.R. (2006): Consumer Behaviour: A European Perspective, Financial Times/ Prentice Hall.

Schiffman, L.G. and L.L. Kanuk (2007): Consumer Behaviour, 9th edition, Pearson Prentice Hall.

Level- 4, Semester-2

Course No: AM423

Course Title: Agribusiness Management (Elective)

Credit hours: 3

Introduction to Agribusiness: Agribusiness: its meaning, objectives and scope.

Development of agribusiness enterprises: Agribusiness management functions: Planning, Organization, Motivation, Implementation and control, Application of management principles to agribusiness firms, Analysis of finance, Procurement.

Product development: Processing, Marketing of agribusiness products and related problems of agribusiness firms

References:

Cramer and Jensen (1991): Agricultural Economics and Agribusiness, 5th ed. John Wiley & Sons, Inc. Singapore.

Drilon, J. D. (1971): Introduction to Agribusiness Management, Asian Productivity Organizations, Tokyo.

Dowrey, W.D. and Trocke. J.K. (1981): Agribusiness Management, McGraw-Hill International Book Co. London.

Robert M. Fulmer (1988): The New Management, 4th ed. Macmillan Publishing Company, New York-10022.

Sah, A.K. () Functional Management for the Cooperatives. Rainbow Publications, Coimbatore-30, Tamilnadu, India.

Seperich, Woolverton & Beierlein (1994): A Introduction to Agribusiness Marketing, Prentice Hall Career & Technology. Englewood Cliffs, NJ 07632.

Turban & Meredith (1981): Fundamentals of Management Science; Business Publication Company Inc. Plano, Texas-75075, USA.

Wills Walter J. (1979): An Introduction to Agribusiness Management, 2nd ed. Danville, III. The Interstate Printers Publishers.

Department of Rural Sociology
Level-1, Semester-1
Course no: RS111
Course Title: Principles of Sociology
Credit hours: 3

The Sociological Perspectives: Definition, origin and development, nature and scope, related disciplines, founding fathers, modern theoretical perspectives.

Sociological Research Methods: The scientific approach, types, research process, research methods and technique of data collection.

Culture and Society: Cultural heritage of human life, elements, culture and civilization, cultural variation, integration.

Socialization and Social Interaction: Importance, sociobiology and nature-nurture debate, development of self and personality, agents, gender role socialization.

Social Differentiation and Stratification: Nature and characteristics, stratification systems, theories, ethnic- gender -age differentiation, social mobility.

Economy and Society: Different types of pre-industrial societies, modern economic systems, the social context of economic activity, politics and distribution of wealth.

Social Institutions: Family groups and systems, religious beliefs and rituals, government and politics, the educational system.

Population and Environment: Population and its composition, demographic transition, population and the quality of life, patterns and social factors of health and illness, population resources and the environment.

Dynamics of Social Life: Collective behavior and social movement, factors of social change, media and its effects, theories, modernization, dependency, world system & globalization.

References:

Macionis, John M. 1999. Sociology. London: Prentice-Hall.

Giddens, Anthony. 1998. Sociology, 3rd edition, Polity Press: London.

Browne, Ken.1998. An Introduction to Sociology. London: Polity Press.

Smelser, Neil J. 1992.Sociology. New Delhi: Prentice –Hall.

Eshleman,J.R. and Chashion,B.C. 1985. Sociology: An Introduction. Little, Brown & Company (Canada)Ltd.

Hess, Markson &Stein 1988 Sociology. New York: Macmillan Publishing Company

Robertson, Ian. 1990. Sociology. New York: Worth Publisher.

Zanden, James W. Vander.1990. The Social Experience: An Introduction to Sociology.

New York: McGraw Hill.

Rao, C.N. Shankar.2001. Sociology: Primary Principles. New Delhi: S. Chand &Company.

Level-2, Semester-1
Course No: RS 211
Course Title: Rural Sociology
Credit hours: 2

Introduction: Origin and Development of Rural Sociology, Scope of Rural Sociology Importance of Rural Sociology, Role of the Rural Sociologists, Methods and totals of Rural Sociology, Tools of Data generation.

The Village Community and its Characteristics: Factors in the growth of village community, Sociological importance of village in Bangladesh, Main features of village Change in village life.

Rural Urban Contrast: Difficulties in comparing rural and urban society, Distinctions between rural and urban societies, urban influence on rural societies.

Rural Social and Power Structure: Class structure Power, structure, Patron client relationship in rural areas.

Land Tenure System: Human settlement Patter Land reforms Society and class Practice, Land ownership and power, Economic Power and Social Status, Politics and Government efforts.

Rural Community Development in Bangladesh: History and concepts of community development rural poverty alleviation program, GO and NGO initiatives in Bangladesh.

Rural Social Institution: Caste and class, the rural Family and marriage, Rural Politics, Leadership Rural recreation Religious aspects of rural life, Rural economy.

Rural Social Problems: Types and causes, socioeconomic effects in Bangladesh.

Changes in Rural Society: Factors of Change subsistence to market economy, rural society and technology
Contemporary rural cultural change.

References:

- Chittambar, J.B. 1997. Introductory Rural Sociology (2nd edition) New Age Int: New Delhi.
Doshi, S.I. and Jain, P.C. 2001. Rural Sociology. Rawar publication: New Delhi.
Raj, Hans. 2000. Rural Sociology (3rd edition) Surjeet Publication: New Delhi.
Rogers, E.M. et al. 1988. Social Change in Rural Societies: An introduction to Rural Sociology. Prentice-Hall: NJ.
Devi, Laxmi 1998 Rural Sociology. Anmol: New Delhi
Chowdhary, Anwarullah. 1982 Agrarian Social Relation and Development in Bangladesh Oxford & IBH Publishing CO: New Delhi
Jahangir, B.K, 1982 Rural Society, Power structure and Class Practice. CSS, University of Dhaka: Dhaka.
Hye, H.A. 1996. Below the line: Rural Poverty in Bangladesh UPL, Dhaka.
Jansen, Erick G. Rural Bangladesh: Competition for Scarce Resources (2nd Impression) UPL: Dhaka.
Alamgir, M.K. 1981 Land Reforms in Bangladesh, CSS, University of Dhaka: Dhaka.

Course No: RS 212

Course Title: Rural Sociology

Credit hour: 1

A. General/Theoretical issues and topics: (Practical Application of Concepts and Principles of rural Sociology to programmes for development of rural people)

Characteristics of rural people and rural life, Rural-urban differences.

Culture: Important aspects, contrast between cultures.

Society: Society and culture, social roles, frustration and adjustment, attitudes, socialization, social norms, undefined acts, folkways and mores, values. understanding the structure of rural society. physical structure. Social structure (social organization, institutions, Ecological entity, groups Collectivities)

B. Specialized issues and development activities in rural society

Gender Issues: Sex and Gender, Empowerment procedure, women in various sector Decision making process.

Rural Social Change: Factors effecting changes: planning and programmers.

Rural Social Problems: Social problem in rural development,

Rural Development: Factor effecting rural development: Indicators of rural development: Government and NGO role in development.

C. Methods and techniques (Survey, RRA, PRA, PAR)

Origin and development of Participatory research tools, Identification, Description, how to use these tools. Experiments on use of tools Field-Survey, Visit to Villages.

Study tour: A1/2/3 day(s) study tour in some rural development activities in selected areas:

D. Practical Notebook Preparation:

References:

- Chittambar, J.B. 1997. Introductory Rural Sociology (2nd edition) New Age Int: New Delhi. Doshi, S.I. and Jain, P.C. 2001. Rural Sociology. Rawar publication: New Delhi. Raj, Hans. 2000. Rural Sociology (3rd edition) Surjeet Publication: New Delhi.
Rogers, E.M. 1988. Social Change in Rural Societies: An introduction to Rural Sociology. Prentice-Hall: NJ.
Devi, Laxmi 1998 Rural Sociology. Anmol: New Delhi
Chowdhary, Anwarullah. 1982 Agrarian Social Relation and Development in Bangladesh Oxford & IBH Publishing CO: New Delhi
Jahangir, B.K, 1982 Rural Society, Power structure and Class Practice. CSS, University of Dhaka: Dhaka.
Hye, H.A. 1996. Below the line: Rural Poverty in Bangladesh UPL, Dhaka. Jansen, Erick G. Rural Bangladesh: Competition for Scarce Resources (2nd Impression) UPL: Dhaka. Alamgir, M.K. 1981 Land Reforms in Bangladesh, CSS, University of Dhaka: Dhaka.

Level- 4, Semester-1

Course No: RS 411

Course Title: Social Structure of Bangladesh (Elective)

Credit hours: 3

Introduction: Concept and methodological issues, problems relating to the analysis of social structure.

The Bengal Frontier: The ecological context, Bangladesh in the context of the Orient and pre-capitalists Occidental Society.

Origin and Growth of Bengal Villages: Social structure of Bengal villages, forms of property and ownership system, open villages of Bengal versus closed villages in other areas of south Asia.

Towns in Bengal: Trade, commerce, urbanization, trading communities, caste and guild system.

Religion and cultural change in Bengal: Different forms of Hinduism and Buddhism, Rise of Islam and changing socio-cultural structure of Bengal.

Colonialism and Bengal: The de-industrialization process, Permanent Settlement Act and the new agrarian structure, English education and Bengal Renaissance, emergence of various new social classes.

Peasant movement of Bengal: East Pakistan State Acquisition and Tenancy Act and its effects, the peasant rebellions and their impact on land relations.

Social background of the emergence of Bangladesh: Language movement and its implication, rise of nationalism. Liberation war in Bangladesh.

Post-Independent Bangladesh: Nationalization and de-nationalization, political crisis during different regimes, Role of bureaucracy and political party, military rule and move towards democratization.

Social changes in Bangladesh: Urbanization, modernization and cultural values, women empowerment, civil society, NGO's and social change.

References:

Crothers, Charles. 1996. Social Structure. Routledge: London and New York.

Blau, Peter (ed.). 1977. Approaches to the Study of Social Structure. Free Press: New York. Islam, Sirajul (ed).

1992. History of Bangladesh. Asiatic Society of Bangladesh: Dhaka.

Jahan, Raunaq, Pakistan. 1972. Failure to National Integration. Columbia University press: New York.

Karim, A.K. Nazmul. 1996. Changing Society in India, Pakistan and Bangladesh (4th impression). Nowroze Kitabistan: Dhaka.

Karim, A.K. Nazmul. 1980. The Dynamics of Bangladesh Society. Vikas Publication New Delhi

Khan, Akbar Ali. 1996. Discovery of Bangladesh: Exploration into Dynamics of a Hidden Nation. UPL: Dhaka.

Sen, Rangalal. 1986. Political Elites in Bangladesh. UPL: Dhaka.

Siddique, Kamal, Jegatpur 1977-1997: Poverty and Social Change in Rural Bangladesh. UPL: Dhaka.

Moniruzzaman, Talukder. 1980. The Bangladesh Revolution and its Aftermaths. Bangladesh Books International: Dhaka.

Jahan, Raunaq(ed). 2000. Bangladesh: Promises and Performance. UPL: Dhaka.

Ahmed, A.F. Salahuddin, Bangladesh: Tradition and Transformation Abdullah, Abu (ed) Modernization at Bay: Structure and Change in Bangladesh

Blau, Peter (ed), Social Structure

Habib, Irfan, Agrarian System and Mughal India

Islam, Sirajul (ed), History of Bangladesh

Jahan, Raunaq, Pakistan: Failure to National Intgration

Karim, a.K. Nazmul, Changing Society in the India, Pakistan and Bangladesh

Karim, a.K. Nazmul, The Dynamics of Bangladesh Society

Khan, Akbar Ali, Discovery of Bangladesh

Department of Agronomy

Level-1, Semester-1

Course No. Agron119

Course Title: Agronomy

Credit hours: 2

Introduction to Agronomy: Definition and scope of Agronomy. Relationship of Agronomy with other branches of Agriculture.

Crops and cropping System: Agronomic classification of crops. Distribution of crops in relation to season, soil land topography and agro-ecological zones in Bangladesh. Concept of cropping systems; Different forms of sequential and intercrossing systems.

Crop Nutrition: Nutrient elements, their source and forms of absorption. Concepts and importance of balanced fertilization. Laws of fertilizer application. factors affecting does of fertilizer application.

Tillage: Concept, objectives and classification. Effect of tillage on soil characteristics and crop productivity. Implements used in different tillage operations.

Seed and Seeding: Definition and classification of seed. Attributes of seed quality. Importance of quality seed in crop production. Methods of seeding practices. Seed rate-concept, factors affecting seed rate.

Intercultural Operations: Weeding mulching and thinning, irrigation and drainage their objectives, methods advantages and disadvantages,

Production Technology of Crops: Origin and distribution botanical description climate and soil requirements variety selection cultivation practices and post-harvest operations of the following crops rice, wheat, maize, sugarcane, jute, tea tobacco, mustard, groundnut, soybean and lentil.

Mechanization of Agriculture: Present status, problems and prospects of mechanization of agriculture in Bangladesh.

References:

De, G. C. 1995. Fundamental of Agronomy. Oxford & IBH Publishing Co. Pvt. Ltd.

Kipps, M. S. 1978. Production of Field crops. Tata McGraw Hill Pub. Co. Ltd. New Delhi. 790p.

Martin, J.H. Leonard, W. H. and Stamp, D. L 1976. Principles of Field Crop Production 3rd Edition, Mcmillan Pub.Co. Inc. New York.

Mavi, H. S. 1974, Information to Agro-meteorology. Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.

Morachan, Y.B 1993. Crop Production and Management. 2nd Edition (Reprint). Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi Bombay, Calcutta, 294p.

Singh, C, 1991, Modern techniques of Raising Field crops. Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.

Singh, S.S. 1996. Principles and Practices of Agronomy 3rd Edition (Reprint). Kalyani Publishers, New Delhi.

Course No. Agron120

Course Title: Agronomy

Credit hour: 1

Identification and study of farm implements. Identification and study of crops. Identification and study weeds. Identification and study of seed. Identification and study of fertilizer and manures. Comparative study on economic efficiency of country plough, moldboard plough, power tiller and tractor plough. Practicing ploughing and to determine efficiency of plough. Practicing weeding thinning and gap filling.

Practicing mulching operations. Conducting crop cutting experiment and calculation of expected yield of crops.

Study of production cost of rice, wheat, maize, sugarcane, jute, mustard, groundnut, soybean and lentil.

Preparation of a crop calendar. Study of the effect of plant nutrient/irrigation/plant density on the performance of a crop-rice/wheat/mustard/ soybean/ jute grown in students' plots.

References:

De, G. C. 1995. Fundamental of Agronomy. Oxford & IBH Publishing Co. Pvt. Ltd.

Kipps, M. S. 1978. Production of Field crops. Tata McGraw Hill Pub. Co. Ltd. New Delhi. 790p.

Martin, J.H. Leonard, W. H. and Stamp, D. L 1976. Principles of Field Crop Production 3rd Edition, Mcmillan Pub.Co. Inc. New York.

Mavi, H. S. 1974, Information to Agro-meteorology. Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.

Morachan, Y.B 1993. Crop Production and Management. 2nd Edition (Reprint). Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi Bombay, Calcutta, 294p.

Singh, C, 1991, Modern techniques of Raising Field crops. Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
Singh, S.S. 1996. Principles and Practices of Agronomy 3rd Edition (Reprint). Kalyani Publishers, New Delhi.

Department of Animal Science

Level-1, Semester-1

Course No. AS113

Course Title: Elements of Animal Science

Credit hours: 2

Introduction: concept, terminology of livestock and poultry. Population of livestock and poultry and their role in the economy and in the farming system of Bangladesh.

Livestock feeds and feeding: Feed nutrients and their function in the animal body. Classification of feeds. Feeding value of common concentrates, fodder's, crop residues and agri-industrial by products. requisites of good quality ration for livestock.

Breeds of livestock: cattle, buffalo, sheep, goat and poultry. Judging of livestock: Cattle, sheep and goat.

Housing of livestock: Selection of site for livestock farm, types of houses and their specification, existing system of housing livestock in Bangladesh.

Breeding: Principles of livestock and poultry breeding.

Impact: Economic impact of animal diseases on livestock and poultry production.

References:

Banerjee, G.C. 1982. A text book of Animal Husbandry 5th ed. Oxford and IBH Pub. Co., New Delhi.
Cole, H.H. 1962. Introduction to livestock production. W.H Freeman and co. San francisco.
Miller, W.C. and Robertson, D.S. 1959. Practical Animal Husbandry. 7th ed. Ohver and Boyd. London.
Gillespie, J.R. 1983. Modern Livestock and Poultry Production, 2nd Ed. Delmar Publishers inc. USA.
Hossain, M.M. and Akhter. S. 1999. Practical Animal Science, Department of Animal Science, BAU, Mymensingh, Bangladesh.

Course No. AS114

Course Title: Elements of Animal Science

Credit hour : 1

Approaching and handling of livestock and poultry. Identification of different body parts of livestock and poultry. Identification of different breeds of cattle, buffalo and poultry. Judging of livestock for draft and milk purpose. Identification of different types of feeds and preparation of feeds for livestock. Demonstration of different types of house for livestock and poultry. Record keeping of dairy and poultry farm.

References:

Banerjee, G.C. 1982. A text book of Animal Husbandry 5th ed. Oxford and IBH Pub. Co., New Delhi.
Cole, H.H. 1962. Introduction to livestock production. W.H Freeman and co. San francisco.
Miller, W.C. and Robertson, D.S. 1959. Practical Animal Husbandry. 7th ed. Ohver and Boyd. London.
Gillespie, J.R. 1983. Modern Livestock and Poultry Production, 2nd Ed. Delmar Publishers inc. USA.
Hossain, M.M. and Akhter. S. 1999. Practical Animal Science, Department of Animal Science, BAU, Mymensingh, Bangladesh.

Department of Fisheries Biology and Genetics

Level-1, Semester-1

Course No. FBG113

Course Title: Elements of Fisheries

Credit hours: 3

Introduction to the course, rationale and outcomes.

Fish, fishery and fisheries. Fish as food. Role of fisheries in the economy of Bangladesh.

Resource availability: Physical and biological resources. Classification of living fishes upto sub-class level.

Fishes and fisheries organisms of economic importance. Exotic fishes: advantages and disadvantages.

Identification of basic problems in the field of fisheries with special reference to freshwater aquaculture, coastal aquaculture, open water fisheries management, conservation of fisheries resources, harvesting, transportation, marketing capital and finance. Resource use conflicts.

Basic principles of fish culture: Types. site selection. Pond construction. Pond preparation Pre-stocking management eradication of undesirable aquatic plants and animals, liming fertilization etc. Stocking management and Post stocking management (feeding, follow-up fertilization, disease control, stock management etc.)

Common fish diseases: Symptoms exhibited by diseased fish. Prevention and control of fish diseases.

Exploration and exploitation of sea fishes.

Conservation of fisheries resources. Fish conservation laws.

References:

Grover, J.H. M. A. Islam, W. A. Shah, M. A. H. Rana and H. A. Chowdhury. 2000. Low-cost, Environment, Friendly and Sustainable Freshwater Aquaculture Technologies. Training Manual for Extension Personnel. ICLARM, Dhaka, Bangladesh. 101 pp.

Heen, E. and R. Kreuzer. 1962. Fish in Nutrition. Fishing News Books Ltd., London. 447 pp.

Hora, S. L. G. Tamas and C. Seagrave. 1992. carp and Pond Fish Culture. Fishing News Books. Blackwell Scientific Publications Ltd. Oxford, UK. 224 pp.

Jhingran, V.G.1977. Fish and Fisheries of India. Hindustan Publishing Corporation (India) Delhi. 954 pp.

Kurian, C.V. and V.O. Sebastian. 1976. Prawns and Prawn Fisheries of India. 2nd. rev. ed. Hindustan Publishing Corporation. Delhi. 280 pp.

Pillay, T. V. R. 1991. Aquaculture Principles and Practices. Fishing News Books, Blackwell Scientific Publication Lid. Oxford. UK. 575 pp.

Rabindran ,K.(ed). 1985. Harvest and post-harvest Technology of Fish. Society of Fisheries Technologists. India.

Rahman, A.K.A. 1989. Freshwater Fishes of Bangladesh. Zoological Society of Bangladesh Dhaka.

Rahman, M.S. 1992. Water quality Management in Aquaculture. BRAC Prokashana, Dhaka.

Sarig, S.1981. The Prevention and Treatment of Diseases in Warm water Fishes Under Sub tropical

Conditions with Sspecial Emphasis on Intensive Fish Farming In: Sniexzko, S.F.and H.R. Axelord (eds.)

Diseases of Fishes. TFH Publications.

Department of Language

Level-1, Semester-1

Course No. LAN111

Course Title: English Language

Credit hours: 2

Textual study and comprehension of a few selective BBC talks.

Socio-linguistic rules to perform language function in English.

Basic grammatical structures:

Type and constructional forms of sentences; sequence of tense; Voice; Verbs, verb patterns and verb modifiers;

Syntax including transformation and combination of sentence and framing of WH questions.

Nouns, determiners and adjectives; Adverbials; Prepositional phrases; Headword, Infinitive phrases; Participle phrases; Apositives.

Principles and methods of composition: Abstract or Summary, Paragraphs, Letters, Reports.

References:

- Close, R.A. 1988. The English We Use (24th Indian Edition). Longman, Calcutta.
- Leech, T. and Svartvik, J. 1996. A communicative grammar in English (2nd Edition) Longman, London and New York.
- Hornby, A.S. 1998. Guide to Patterns and Usage in English (2nd Edition). Oxford University Press, Delhi.
- Pyle, K.A. and Munoz, M.A. 1992. Chiffs TOEFL Preparation Guide (62 Revised Edition) BPB Publications, New Delhi.
- Chowdhury, M.Y.A. and Hossain, M.M. 2002. Advanced Learners Degree General English. Advanced Publication, Banglabazar, Dhaka.
- Hornby, A.S.1996. Oxford Advanced Learners Dictionary of Current English (ed.J. Crowler, 5th Edition) Oxford University Press, London.
- Begum, J.1988. A Text Book of Modern Functional English. Globe Library (Pvt.) Ltd. Dhaka.
- McArthur, T. 1978. A Rapid Course in English for Students of Economics (Ed.R. Mackin). Oxford University Press, London.

Department of Horticulture

Level-1, Semester-2

Course No. Hort123

Course Title: Elements of Crop Science-II (Horticultural Crops) (Theory)

Credit hours: 2

Introduction to Horticulture: Definition, branches, importance and scope of horticulture.

Common horticultural crops of Bangladesh

Common fruits, vegetables and ornamental plants of Bangladesh and their classification. Role of fruits and vegetables in human diet. Economic importance of fruits, vegetables and ornamental plants of Bangladesh.

Nursery management practices

Definition, types, objectives, establishment and management of nursery and its structures, cost and profit analysis aspects of a modern nursery.

Propagation of horticultural crops

Definition, importance, advantages and disadvantages, methods and techniques.

Methods of production of the following horticultural crops and estimation of their cost of production

Banana, Papaya, Pineapple, Mango, Potato, Tomato, Cauliflower, Pumpkin, Rose and Tube rose.

Harvesting and handling of horticultural crops

Harvesting, grading, packaging, processing, transportation and marketing of horticultural produces. Extension of shelf life.

References:

- Bose, T.K. and L.P. Yadav1989. Commercial Flowers. Naya Prokash.
- Bose, T.K. and S.K. Mitra. 1990. Tropical and Subtropical. Naya Prokash, Calcutta. India.
- Bose, T.K.M.G. Som. 1990. Vegetable Crops in India. Naya Prokash, Calcutta.
- Bose, T.K.S.K. Mitra and M.K. Sadhu. 1990. Propagation of Tropical and sub-tropical crops. Naya Prokash. Calcutta, India.
- Katyal, S.L. and K.L. Chadha. 1996. Vegetable Growing in India. Oxford & IBH Pub. Co. Pvt.Ltd., New Delhi.
- Randhawa, G.S. and A. Mukhapadhyay. 1994. Floriculture in India. Allied Pub. Ltd. New Delhi.
- Rashid,M.M. 1999. Shabji Biggan (Bangladesh) (2nd ed). Rashid Pub. House, Dhaka.
- Ryugo, K. 1988. Fruit Culture, its Science and Arts. John Wiley and Sons. New York.
- Swarup, V. 1979. Garden Flower. National Book Trust, New Delhi.

Course No. Hort124

Course Title: Elements of Crop Science-II (Horticultural Crops) (Practical)

Credit hour: 1

Identification of common horticultural crops. Identification and use of nursery equipments.
Methods of planting horticultural crops. Propagation of horticultural crops by vegetative means.
Estimation of cost of production of fruits and vegetables.

References:

- Bose, T.K. and L.P. Yadav. 1989 Commercial Flowers. Naya Prokash.
Bose, T.K. and S.K. Mitra. 1990. Tropical and Subtropical. Naya Prokash, Calcutta. India.
Bose, T.K.M.G. Som. 1990. Vegetable Crops in India. Naya Prokash, Calcutta.
Bose, T.K.S.K. Mitra and M.K. Sadhu. 1990. Propagation of Tropical and sub-tropical crops. Naya Prokash. Calcutta, India.
Katyal, S.L. and K.L. Chadha. 1996. Vegetable Growing in India. Oxford & IBH Pub. Co. Pvt.Ltd., New Delhi.
Randhawa, G.S. and A. Mukhapadhyay. 1994. Floriculture in India. Allied Pub. Ltd. New Delhi.
Rashid, M.M. 1999. Shabji Bigger (Bangladesh) (2nd ed). Rashid Pub. House, Dhaka.
Ryugo, K. 1988. Fruit Culture, its Science and Arts. John Wiley and Sons. New York.
Swarup, V. 1979. Garden Flower. National Book Trust, New Delhi.

Department of Farm Power and Machinery

Level-1, Semester-2

Course No. FPM 127

Course Title: Elements of Agricultural Engineering

Credit hours: 2

Operation, performance and maintenance of heat engines, tractors, power tillers, ploughs, harrow, planter, drills, harvester, and thresher. Water management different types of irrigation and drainage systems, their operations, performance and maintenance, operation, performance and maintenance of different types of pump turbine, centrifugal and reciprocating. Artificial drying of grains and principles of storage of grains, fruits, and vegetables.

Course No. FPM 128

Course Title: Elements of Agricultural Engineering

Credit hour: 1

Heat engines systems (basic parts).
Technical and operational aspects of tractors and power tillers.
Technical and operational aspects of tractor-drawn implements-ploughs, harrows, planter, seed drills, harvesters and threshers.
Operation of different types of pumps.

References:

- Principles of Agricultural Engineering.
Vol.1 and 2, By A.M.Michael and T.P. OJha, Jain brother, New Delhi, 2nd ed.

Department of Computer Science & Mathematics

Level-3, Semester-2

Course No. CSM391

Course Title: Computer Applications in Social Sciences

Credit hours: 2

Introduction to computing systems, operating systems, Software and Hardware.

Introduction of programming language: C/C++ language: data types, operators and expressions, I/O statements, control structures, composite data structures, functions and disc I/O.

Data Structure and representation

Editing, Coding and Code Plan.

Arranging data according to a standard plan.

Software and its classifications.

Introduction to Data Base management systems and its application.

Spread sheet analysis.

Application of packages: (SAS, SPSS, MSTAT, MICROSTAT)

References:

Turbo C/C++ Programming, B. Schild, 3rd edition, BP Publications, New Delhi.

SAS Manual,

SPSS Manual

MSTAT Manual

MICROSTAT Manual

Level-3, Semester-2

Course No. CSM392

Course Title: Computer Applications in Social Sciences

Credit hours: 2

Compute operations in DOS and Windows environment; familiarity with the use of applications software: text processing, electronic sheet, presentation materials preparation, statistical analysis; program development based on theory classes and terminal use.

References:

Turbo C/C++ Programming, B. Schild, 3rd edition, BP Publications, New Delhi.

SAS Manual

SPSS Manual

MSTAT Manual

MICROSTAT Manual

Department of Agricultural Extension Education

Level-3, Semester-2

Course No. AgExt323

Course Title: Agricultural Extension

Credit hours: 3

Introduction: Definition of extension and its scope for rural development; Philosophy and Principles of Extension work; The need for agricultural education research and extension; Historical development of Agricultural Extension Work in Bangladesh, U.S.A Japan, the Philippines and India.

Extension Organization: Essentials of an extension organization; personnel serving in an extension organization Administrators, Supervisors, Specialists and Field extension workers; Qualifications, and duties of different categories of personnel serving in the extension organization.

Principles and Psychology of Learning: Learning and its definition; Principle and Laws of learning; Elements in the learning process; Motivation and Maslow's need theory.

Teaching Methods in Extension: Definition of teaching; Different kinds of extension teaching methods individual teaching methods, group teaching methods and mass teaching methods; Indirect method of extension

teaching; Importance of visual aids in extension teaching and characteristics of good visual aids in Bangladesh situation.

Communication Process in Extension: Communication Process; Communication model and its elements; Adoption and diffusion process in extension; Different categories of adopters and their characteristics; Factors affecting the adoption and diffusion process.

Leadership in Extension Work: Meaning and importance of leadership in extension work; kinds of leadership- democratic and authoritarian; The role of professional and local leaders in extension work; Selection and training of local leaders; Recognition of local leaders.

Programme Planning and Evaluation in Extension: Definition of programme building and its need for conducting extension work; Principles and steps in extension programme building; The principles of cooperation and coordination in programme building; principles, type and procedures for evaluation of programmes.

Rural Youth in Extension Programme: The present condition of rural youth in Bangladesh: The need for involving the rural youth in extension programme; Involving the rural youth for the agricultural vis-a-vis the economic development of the country.

Problems of Agricultural Extension Work in Bangladesh: The current extension programmes and approaches in Bangladesh; Problems of conducting extension work under the current situations; Models of extension work.

Office Management: Meaning features and Function of office management; Factors in increasing efficiency in office management.

References:

Bhuiya, M. H 1988. Krishi Samprasaran Parichiti, Dhaka Jamuna Printers.

Bhuiya, M.H and M. A. M. Maih. 1998 Extension Psychology, Krishi Lekhak Forum, Dhaka: Colourline Printers.

Dahama, O.P. Bhatnagar 1980. Education and Communication for Development 2nd. edn. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.

Kamath, M.C. (editor) 1961. Extension Education in Community Development. Directorate of Extension. New Delhi: Ministry of food and Agriculture, Govet of India.

Kashem, M.A. 1992. Samparasaran Bijnan (Extension Science). Dhaka: The Bangladesh Packing Press.

Kelsey, L.D. C.C Heame 1963. Cooperative extension Work. 3rd edition, Comstock Publishing Associates, New York: Ithaca.

Ray, G.L 1996. Extension Communication and Management. 3rd edn. Calcutta: Naya Prokash.

Samanta R.K. (ed). 1990. Development Communication for Agriculture. New Delhi: B.R. Publishing Corporation.

Van den Ban, A.W and H.S Hawkins. 1996. Agricultural Extension. 2nd ed. London: Blackwell Science Ltd.