

UNIVERSITY OF DHAKA



**Syllabus of the Department of
Economics**

for

B.S.S. Honours Course

for the

Sessions: 2012-2013 to 2014-2015

**Published by
THE UNIVERSITY OF DHAKA
BANGLADESH**

2016

**Price: Tk. 24.00
(Taka Eighty four) only.**

University of Dhaka

Department of Economics

BSS (Hons.) in Economics

Sessions: 2012-2013 to 2014-2015

ECON 101: Principles of Microeconomics (Compulsory), Semester 1	4
ECON 102: Principles of Macroeconomics (Compulsory), Semester 2	5
ECON 103: Mathematics I: Linear Algebra and Calculus (Compulsory), Semester 1	6
ECON 104: Mathematics II: Optimization Techniques (Compulsory), Semester 2	8
ECON 105: Statistics I (Compulsory), Semester 1	9
ECON 106: Statistics II (Compulsory), Semester 2	10
ECON 107: Introduction to Computer Analysis and Communication (Compulsory), Semester 1	11
ECON 109: Business and Finance (Compulsory), Semester 2	13
ECON 201: Intermediate Microeconomics I (Compulsory), Semester 3	15
ECON 202: Intermediate Microeconomics II (Compulsory), Semester 4	18
ECON 203: Intermediate Macroeconomics I (Compulsory), Semester 3	20
ECON 204: Intermediate Macroeconomics II (Compulsory), Semester 4	21
ECON 205: Mathematical Economics (Compulsory), Semester 3	22
ECON 206: Economy of Bangladesh (Compulsory), Semester 3	25
ECON 207: Statistical Methods (Compulsory), Semester 4	26

ECON 208: Agricultural Economics (Optional), Semester 4	27
ECON 210: Introduction to Accounting (Optional), Semester 4	28
ECON 211: Introduction to Political Science (Optional), Semester 3	30
ECON 212: Introduction to Sociology (Optional), Semester 3	31
ECON 213: Introduction to Psychology (Optional), Semester 4	33
ECON 214: Introduction to Philosophy (Optional), Semester 4	35
ECON 301: Econometrics I (Compulsory), Semester 5.....	36
ECON 302: Econometrics II (Compulsory), Semester 6.....	38
ECON 303: Real Analysis (Optional), Semester 5	39
ECON 304: Dynamic Optimization (Optional), Semester 6	40
ECON 305: International Trade (Compulsory), Semester 5	42
ECON 306: Development Economics (Compulsory), Semester 5	44
ECON 307: Population Economics (Optional), Semester 5	46
ECON 308: Public Economics (Compulsory), Semester 6.....	48
ECON 309: Labor Economics (Optional), Semester 6.....	49
ECON 310: International Finance (Optional), Semester 6...	51
ECON 311: Health Economics (Optional), Semester 6.....	53
ECON 312: Software Applications for Economic Analysis (Optional), Semester 6.....	54
ECON 314: Development Patterns and Economic Systems (Optional), Semester 5	55
ECON 316: Monetary Economics (Optional), Semester 5	57

ECON 401: Advanced Microeconomics I (Compulsory), Semester 7	59
ECON 402: Advanced Microeconomics II (Optional), Semester 8	61
ECON 403: Advanced Macroeconomics I (Compulsory), Semester 7	63
ECON 404: Advanced Macroeconomics II (Optional), Semester 8	64
ECON 405: Advanced Econometrics I (Optional), Semester 7	65
ECON 407: Industrial Economics (Optional), Semester 7...	67
ECON 408: Advanced Econometrics II (Optional), Semester 8	68
ECON 409: Environmental Economics (Optional), Semester 7	69
ECON 410: Natural Resource and Energy Economics (Optional), Semester 8	71
ECON 412: Research Methodology (Optional), Semester 7	73
ECON 413: History of Economic Thought (Optional), Semester 8	75
ECON 414: Economic Organization of Family and Firm (Optional), Semester 8	76
ECON 415: Behavioral Economics (Optional), Semester 8	78
ECON 416: International Business (Optional), Semester 7	79
ECON 418: Urban Economics (Optional), Semester 8	80
ECON 419: Comprehensive and Viva Voce (Compulsory), Semester 8	81
ECON 420: Thesis (Optional), Semester 8 [for selected students only]	81

ECON 101: Principles of Microeconomics (Compulsory), Semester 1

Topics

- 1. Basic Concepts of Economics:** Scarcity, Choice and Opportunity Costs.
- 2. Demand:** The Law of Demand, the Demand Curve, Individual and Market Demand, Factors Affecting the Demand Curve, Shifts vs. Movement along the Demand Curve, Elastic and Inelastic Demand.
- 3. Supply:** The Law of Supply, the Supply Curve, Factors Affecting the Supply Curve, Shifts vs. Movement along the Supply Curve, Elasticity of Supply.
- 4. Market Equilibrium:** Interaction of Demand and Supply, Effect of a Shift in Demand or Supply or both, Effect of a Tax or a Subsidy, Price Controls.
- 5. Consumer Behavior:** Utility and Choice, Marginal Utility, Diminishing Marginal Utility, Equimarginal Principle, Indifference Curves and their Properties, Budget Sets, Equilibrium of the Consumer with Indifference Curves and Budget Sets, Income and Substitution Effects, Deriving the Demand Curve from the Indifference Curves and Budget Sets, Complements and Substitutes, Consumer surplus.
- 6. Production:** Concept of a Production Function, Total, Average and Marginal Product, the Law of Diminishing Returns, Returns to Scale.
- 7. Costs:** Fixed and Variable Cost, Total, Average and Marginal cost, Short Run and Long Run Costs.
- 8. Revenues:** Total, Average and Marginal Revenue.
- 9. Decision of a Firm:** Isoquants, Isocosts and the Least Cost Combination, Equating Marginal Revenue with Marginal Cost.

10. **Market Structure:** Perfectly Competitive Markets, Monopoly, Oligopoly (Game Theory), Monopolistic Competition.
11. **Factor Markets:** Input Hiring Decision. Competitive Factor Markets, Monopsony, Capital Theory, Concept of Net Present Value, Project Appraisal.
12. **Intertemporal Choice.**
13. **Market Failures:** Externalities, Public Goods, Natural Monopoly.
14. **Information Economics:** Moral Hazard and Adverse Selection.

References

1. Samuelson, P. A. and W. D. Nordhaus (2004). *Economics*, 18th Edition, McGraw-Hill/Irwin.
2. Pindyck, R. S. and D. L. Rubinfeld (2012). *Microeconomics*, 8th Edition, Pearson Education.
3. Hirschleifer, J., Glazer, A. and D. Hirshleifer (2005). *Price Theory and Applications*, 5th Edition, Cambridge University Press.

ECON 102: Principles of Macroeconomics (Compulsory), Semester 2

Topics

1. **Macroeconomic Variables:** National Income, Employment, Interest and Price.
2. **Measuring the Total Activity of an Economy:** GDP, Real vs. Nominal GDP, Price Deflators.
3. **GDP and its Components:** Consumption, Investment, Government Expenditure, Net Exports.
4. **Determination of Income, Employment, Interest and Price in the Classical Model:** The Quantity Theory of Money; Neutrality and Dichotomy.

5. **Criticisms of the Classical Model:** The Great Depression.
6. **The Keynesian Theory of Income, Employment, Interest and Price:** the IS-LM Framework.
7. **Monetary and Fiscal Policies in the Keynesian Model.**
8. **Theories of Consumption.**
9. **Capital Theory and Investment.**
10. **Money:** Demand and Supply.
11. **Government:** Debate over Government Debt, the Ricardian Proposition, Lags in Government Policy.
12. **Critique of the Keynesian Model:** the Monetarists' View, the Rational Expectations School.
13. **Economic Fluctuations:** Keynesian Explanations; Equilibrium Business Cycles, the Real Business Cycle Theory.
14. **The New Keynesians:** Menu Costs, Coordination Failures, Staggered Prices.

References

1. Mankiw, G. N. (2012). *Macroeconomics*, 8th Edition, Worth Publishers, Inc.
2. Barro, R. J. (1997). *Macroeconomics*, 5th Edition, the MIT Press.

ECON 103: Mathematics I: Linear Algebra and Calculus (Compulsory), Semester 1

Topics

1. **Economic Models:** Variables, Constants, Parameters, Equations, Identities, the Real Number System, the Concept of Sets and Operations on Set, Equations, Functions, Types of Functions, Graphs, Slopes and Intercepts.

2. **The Derivative:** Rules of Differentiation, First Derivative, Second Derivative and convexity, Higher Order Derivatives, Limits, Partial Differentiation, Maxima and Minima.
3. **Calculus of Multivariable Functions:** Functions of Several Variables and Partial Derivatives.
4. **Exponential and Logarithmic Functions:** Exponential Functions and Logarithmic Functions.
5. Differentiation of Exponential and Logarithmic Function: Rules of Differentiation.
6. Differentials: Total Differential, Rules of Differentials, Total Derivative.
7. **Linear models and Matrix Algebra:** Matrices and Vectors, Matrix Operations, Kronecker Products, Commutative, Associative and Distributive Laws, Identity and Null Matrices.
8. **Matrix Inversion:** Determinants and Non-singularity, Minors and Cofactors, Properties of a Determinant, Properties of Transposes, Inverses and their Properties, Inverse Matrix and Solution of Linear Equation System, Cramer's Rule for Matrix solutions, Economic Applications.
9. **Integral Calculus:** The Indefinite Integral: Rules of Integration, Integration by Substitution, Integration by Parts, Economic Applications.
10. **Integral Calculus:** The Definite Integral: The Fundamental Theorem of Calculus, Properties of Definite Integral, Area between Curves, Improper Integrals, Economic Application, Domar Growth Model.

References

1. Dowling, E. T. (2001). *Theory and Problems of Introduction to Mathematical Economics*, Schaum's Outline Series, 3rd Edition, McGraw-Hill.

2. Chiang A C. and K. Wainwright (2005). *Fundamental Methods of Mathematical Economics*, 4th Edition, McGraw-Hill.
3. Hoy, M., et al (2011). *Mathematics for Economics*, 3rd Edition. The MIT Press, Cambridge, Massachusetts.
4. Simon, C. P. and L. Bloom (1994). *Mathematics for Economists*, W.W. Norton and Company.

ECON 104: Mathematics II: Optimization Techniques (Compulsory), Semester 2

Topics

1. **Unconstrained Optimization:** First Order Conditions, Second Order Conditions, Maxima, Minima.
2. **Economic Applications:** Economic Applications, Optimization of Cobb-Douglas Production Functions, Profit Maximization.
3. **Constrained Optimization:** First and Second Order Conditions, Lagrange Multiplier, Economic Applications, Constrained Optimization of CES Production Function.
4. **Economic Application:** Economic Applications, Constrained Optimization of CES Production Function, Utility Maximization, Cost Minimization, Indirect Utility Functions.
5. **Special Determinants and Matrices and their Use in Economics:** The Jacobian, the Hessian, Higher-order Hessian, The Bordered Hessian for Constrained Optimization, the Characteristic Root Test.
6. **Nonlinear Programming:** Nature of Nonlinear Programming, Kuhn-Tucker Conditions, Economic Applications.

References

1. Dowling, E. T. (2001). *Theory and Problems of Introduction to Mathematical Economics*, Schaum's Outline Series, 3rd Edition, McGraw-Hill.
2. Chiang A C. and K. Wainwright (2005). *Fundamental Methods of Mathematical Economics*, 4th Edition, McGraw-Hill.
3. Simon, C. P. and L. Bloom (1994). *Mathematics for Economists*, W.W. Norton and Company.

ECON 105: Statistics I (Compulsory), Semester 1

Topics

1. **Introduction to Statistics:** Applications, Data, Data Sources, Descriptive Statistics, Statistical Inference.
2. **Descriptive Statistics:** Tabular and Graphical Methods: Summarizing Data, Data Analysis, Cross tabulations, Scatter Diagram.
3. **Descriptive Statistics:** Numerical Methods: Measures of Location, Measures of Variability, Measures of Relative Location, Measures of Association.
4. **Simple Linear Regression:** Simple Linear Regression Model, Least Squares Method, Coefficient of Determination, Model Assumptions, Testing for Significance.
5. **Index Numbers:** Price Relatives, Aggregate Price Indices, Consumer & Producer Price Index, Deflating, Splicing, Base Shifting.
6. **Time Series and Forecasting:** Different Types of Pattern, Moving Average and Exponential Smoothing, Seasonality and Trend.
7. **Introduction to Probability:** Experiments, Outcomes, Counting Rules, Events, Conditional Probability, Bayes' Theorem.

References

1. Anderson, D. R., et. al. (2006). *Statistics for Business and Economics*, Cengage Learning.
2. Newbold, P., Carlson, W. L. and B. Thorne (2006). *Statistics for Business and Economics*, Prentice Hall.
3. Jain, D. and B. Jhunjhunwala (2006). *Business Statistics*, Tata McGraw-Hill.
4. Gupta, S. P. and M. P. Gupta (2005). *Business Statistics*, Sultan Chand and Sons.

ECON 106: Statistics II (Compulsory), Semester 2

Topics

1. **Discrete Probability Distributions:** Random Variables, Expected Value and Variance, Binomial Probability Distribution, Poisson Probability Distribution.
2. **Continuous Probability Distribution:** Uniform, Normal and Exponential Probability Distribution.
3. **Advanced Probability and Distribution Theory:** Conditional Expectation, Bivariate Probability Distribution, Marginal and Joint Distribution, Independence, Covariance.
4. **Sampling and Sampling Distribution:** Sample Random Sampling, point Estimation, Sampling Distribution of Sample Mean, Sampling Distribution of Sample Proportion.
5. **Interval Estimation:** Interval Estimation of Population Mean, Determining the Sample Size, Interval Estimation of Population Proportion.
6. **Statistical Inference about Means and Proportions with Two Populations:** Estimation, Hypothesis

Testing and Inference about the Difference between the Means of Two Population.

7. **Inferences about Population Variances:** Inferences about Population Variance and Variances of Two Populations.
8. **Hypothesis Testing:** Developing Null and Alternative Hypothesis, Type I and Type II Error, Hypothesis Test for a Population Mean, Decision Making.

References

1. Anderson, D. R., et. al. (2006). *Statistics for Business and Economics*, Cengage Learning.
2. Newbold, P., Carlson, W. L. and B. Thorne (2006). *Statistics for Business and Economics*, Prentice Hall.
3. Jain, D. and B. Jhunjhunwala (2006). *Business Statistics*, Tata McGraw-Hill.
4. Gupta, S. P. and M. P. Gupta (2005). *Business Statistics*, Sultan Chand and Sons.
5. Gujarati, D. (2004). *Basic Econometrics*, 4th Edition, McGraw-Hill.

ECON 107: Introduction to Computer Analysis and Communication (Compulsory), Semester 1

Topics

1. **Introduction:** History & Generation of Computer, Classification of Computer, Components of Computer System and Application of Computer.
2. **Number Systems and Logic Gates:** Binary, Octal and Hexadecimal Number System, 2's Complement System; Codes: ASCII, BCD, EBCDIC and Unicode, Parity Bit.

3. **Input/Output:** Keyboard, Mouse, Monitor, Printer Types, OMR, OCR, MICR, Scanner and Other Input Output Devices.
4. **Computer Hardware:** CPU, Motherboard, Expansion Slots and Cards, Main Memory- RAM, ROM; Secondary Memory- Cache Memory, Floppy Disk, Hard Disk, CD ROM.
5. **Software:** Basic Classification of Software- System Software, Application Software, Operating Systems: MS-DOS, Windows, Linux, Application Packages: MS Word, MS Excel.
6. **Internet and Networking:** LAN, MAN ,WAN, Network Devices: Bridge, Router, Hub, Switch, Gateway, Modem, NIC, Transmission Media, Network Topology, Client-Server Technology, OSI Model, TCP/IP Protocol, Internet Application, Email, IRC, FTP, WWW, VOIP, WAP.
7. **E-Commerce:** E-commerce and E-Business, E-Commerce Types: B2B, B2C, C2B, C2C; E-commerce Security, Encryption, Digital Signature, E-Payments: Debit Card, Credit Card, EFT, E-cash, E-check; Privacy, Intellectual Property Rights, Copyright Law, Trade Mark Law, Patent Law.
8. **English Language Communications:** The Ability to Use Tools, Programs and Software Designed Specifically for the Study of the English Language and Its Literature. Practical Activities to Learn How to Communicate in English Using Web-based Platforms. Activities in English to Learn How to Look for Information Using the University's Electronic Resources.
9. **Laboratory Work:** Assemble of Computer, Installation of Software (OS, MS Office and others), Operating System Commands, Application Packages (MS Word, MS Power Point).

References

1. Sinha, P. K. (2004). *Computer Fundamentals*, BPB Publications.
2. Norton, P. (2005). *Introduction to Computer*, McGraw-Hill.
3. Kosiur, D. (1997). *Understanding Electronic Commerce*, Microsoft Press, Washington.
4. Bajaj, K. K. and D. Nag (1999). *E Commerce-The Cutting Edge of Business*, TATA McGraw-Hill Publishers.
5. Brook-Hart, Guy (2008). *Complete First Certificate*. Cambridge: Cambridge University Press.

ECON 109: Business and Finance (Compulsory), Semester 2

Topics

1. **Introduction to Corporate Finance:** Corporate Finance, the Balance Sheet Model of the Firm, Capital Structure Corporate Securities as Contingent Claims, the Corporate Firm, Agency Cost, Set-of-Contracts Perspectives, Managerial Goals, Separation of Ownership and Management, Financial Markets.
2. **Accounting Statements and Cash Flow:** the Balance Sheet, the Income Statement, Financial Cash Flow.
3. **Value and Capital Budgeting:** the Financial Market Economy, Making Consumption Choices Over Time, the Competitive Market, Practicing the Principle of Lending and Borrowing, Investment Decision, Corporate Investment Decision.
4. **Net Present Value:** Future Value and Compounding, Present Value and Discounting,

Compounding Periods, Perpetuity, Growing Perpetuity, Annuity, Growing Annuity.

5. **How to Value and Stocks:** Pure Discount and Zero Coupon Bonds, Interest Rate and Bond Prices, Yield to Maturity, Present Value of Common Stocks, Dividend vs. Capital Gains, Valuation of Different Types of Stocks, Practice of Capital Budgeting, Estimation of Parameters in the Dividend-Discount model, Growth Opportunities, the Dividend-Growth Model and the NPVGO Model and Price-Earnings Ratio.
6. **Some Alternative Investment Rules:** Payback Period Rule, Discounted Payback Period Rule, the Average Accounting Return, the Internal Rate of Return, the Profitability Index.
7. **Risk and Return:** Definition and Measurement Using Probability Distribution, Risk and Return of a Portfolio. The Capital Asset Pricing Model (CAPM).
8. **Securities Market:** Basic Concepts of Security Issuance-Initial Public offerings (IPO). Classification: Market Participants; Bangladesh Context.
9. **Banking Firm & Management of Financial Institutions:** Bank Balance Sheet and General Principle of Bank Management; Managing Credit Risk; Off-Balance Sheet Activities; Financial Innovation.
10. **Central Banking:** Functions of Bangladesh Bank; Credit Control; Instruments of Monetary Management.
11. **Commercial Banking:** Types of Commercial Banking; Credit Creation; Commercial Banking Operation in Bangladesh.

12. **Negotiable Instruments:** Cheque; Bill of Exchange; Promissory Note; Endorsement.
13. **Economic Analysis of Banking Regulation:** Asymmetric Information and Bank Regulation; International Banking Regulation; Banking Sector Reform in Bangladesh.
14. **Financial Derivatives:** Basic Concepts; Interest Forward Contracts; Financial Futures Markets; Option Contracts; Interest Rate Swaps.

References

1. Stephen, R. A., Westerfield, R. W. and J. Jafee (2002). *Corporate Finance*, 6th Edition, McGraw-Hill.
2. Brigham E. F. and J.F. Liaison (1998). *Fundamentals of Fraternal Management*, the Dryden Press.
3. Mishkin, F. S. (2000). *The Economics of Money Banking, and Financial Markets*, Addison -Wesley.
4. Modigliani, F., P., Frank, J. Jones and F. J. Fabozzi (2009). *Foundations of Financial Markets and Institutions*, Prentice Hall.
5. Brealey, R.A., Myers, S.C. and A.J. Marcus (2007), *Principles of Corporate Finance*, 7th Edition, McGraw-Hill, Inc.

ECON 201: Intermediate Microeconomics I (Compulsory), Semester 3

Topics (Consumer and Producer Theory)

1. **Budget Constraint:** Idea of Budget Constraint, Composite Goods, Properties of the Budget Set, Changes in the Budget Line, the Numeraire, and Applications: Taxes, Subsidies and Rationing, the Food Stamp Program.

2. **Preferences and Utility:** Consumer Preferences, Assumptions about Preferences, Indifference Curves, Examples of Preferences, Perfect Substitutes, Perfect Complements, Bads, Neutrals, Satiation, Discrete Goods, Well-Behaved Preferences (Include Non-Convex Preferences), the Marginal Rate of Substitution, Other Interpretations of the MRS, Idea of the Utility Function, Constructing a Utility Function, Examples of Utility Functions: Perfect Substitutes, Perfect Complements, Quasilinear Preferences, Cobb-Douglas Preferences, Marginal Utility and the MRS.
3. **Choice:** Optimal Choice, Consumer Demand, Examples: Perfect Substitutes, Perfect Complements, Neutrals and Bads, Discrete Goods, Concave Preferences, Cobb-Douglas Preferences, Income Tax vs. Quantity Tax.
4. **Demand:** Normal and Inferior Goods, Income Offer Curves and Engel Curves, Ordinary Goods and the Giffen Goods, Price Offer Curve and the Demand Curve, Examples of Demand Curves: Perfect Substitutes and Complements, Discrete Good, Substitutes and Complements, Inverse Demand Function.
5. **Revealed Preference:** Idea of Revealed Preference, Principle of Revealed Preference, Recovering Preferences, Weak Axiom of Revealed Preference, Checking WARP, Strong Axiom of Revealed Preference, Checking SARP.
6. **Slutsky Equation:** The Substitution Effect, The Income Effect, Sign of the Substitution Effect, Total Change in Demand, The Law of Demand, Slutsky Substitution Effect vs. Hicks Substitution Effect, Compensated Demand Curves.
7. **Consumer's Surplus:** Constructing Utility from Demand, Interpretation of Consumer's Surplus,

Interpreting the Change in Consumer's Surplus, Compensating and Equivalent Variations, Producer's Surplus, Applications: Calculating Benefit-Cost Analysis and Rationing.

8. **Technology:** Inputs and Outputs, Technological Constraints, Examples of Technology: Fixed Proportions, Perfect Substitutes, Cobb-Douglas, Properties of Technology: Monotonicity and Convexity, Marginal Product, Technical Rate of Substitution, Diminishing Marginal Product, Diminishing TRS, The Long Run and the Short Run, Returns to Scale.
9. **Profit Maximization:** Idea of Profit, Organizational Structure of Firms, Fixed and Variable Factors, Short-run Profit Maximization and Comparative Statics, Long-run Profit Maximization, Inverse Factor Demand Curves, Relation of Profit Maximization with Returns to Scale, Weak Axiom of Profit Maximization (WAPM).
10. **Cost Minimization:** Concept of Cost Minimization, Revealed Cost Minimization, Returns to Scale and the Cost Function, Long-run and Short-run Costs, Fixed/Quasi-fixed Costs and Sunk Costs, Average Costs, Marginal Costs, Relationship Between Marginal Costs and Variable Costs, Marginal Cost Curves for Multiple Plants, Long-run Costs, Discrete Levels of Plant Size, Long-run Marginal Costs.

References

1. Varian, Hal R. (2009), *Intermediate Microeconomics: A Modern Approach*, 8th Edition, Norton, W. W. & Company, Inc.
2. Nicholson, W. and C. Snyder (2009), *Intermediate Microeconomics and Its Application*, 11th Edition, Cengage Learning.
3. Pindyck, R. S. and D. L. Rubinfeld (2012). *Microeconomics*, 8th Edition, Pearson Education.

ECON 202: Intermediate Microeconomics II
(Compulsory), Semester 4

Topics (Market Structure and General Equilibrium)

- 1. Firm Supply:** Market Environments, Pure Competition, Supply Decision of a Competitive Firm (With Exceptions of "Giffen Good" Case and the Shutdown Condition), Inverse Supply function, Profits and the Producer's Surplus, Long-run Supply Curve of a Firm, Long-run Average Cost Curves.
- 2. Industry Supply:** Short-run Industry Supply, Industry Equilibrium in the Short Run, Industry Equilibrium in the Long Run, the Long-run Supply Curve, Zero-profit Situation, Fixed Factors and Economic Rents, Rental Rates and Prices.
- 3. Monopoly:** Monopoly Profit-maximizing Price and Output, Linear Demand Curve and Monopoly, Markup Pricing, Inefficiency of Monopoly, Deadweight Loss of Monopoly, Natural Monopoly, Causes of Monopoly, Monopoly Behavior: Price Discrimination, First-Degree Price Discrimination, Second-Degree Price Discrimination, Third-Degree Price Discrimination, Bundling, Two-part Tariffs, Monopolistic Competition, Location Model of Product Differentiation
- 4. Factor Markets:** Monopoly in the Output Market, Monopsony, Upstream and Downstream Monopolies.
- 5. Oligopoly:** Strategy Choices, Cournot Model, Bertrand Model, Stackelberg Model, Upstream and Downstream Monopolies, Price Leadership Model, Many Firms in Cournot Model, Collusion, Punishment Strategies, Product Differentiation Models, Contestable Markets Model, Comparison of Solutions.

6. **Game Theory:** Payoff Matrix of a Game, Nash Equilibrium, Mixed Strategies, The Prisoners' Dilemma, Repeated Games, Tit-for-Tat Strategy vs. Trigger Strategy, Sequential Games, Game of Entry Deterrence, Mixed Strategies, Games of Coordination, Battle of the Sexes, Prisoner's Dilemma, Assurance Games, Games of Competition, Games of Coexistence, Games of Commitment.
7. **General Equilibrium Analysis:** (a) *Exchange:* Edgeworth Box, Pareto Efficient Allocations, Walras' Law, The Existence of Equilibrium, Equilibrium and Efficiency, First Welfare Theorem, Second Welfare Theorem. (b) *Production:* The Robinson Crusoe Economy, Production and the First Welfare Theorem, Production and the Second Welfare Theorem, Production Possibilities, Comparative Advantage, Pareto Efficiency, Decentralized Resource Allocations.
8. **Welfare:** Aggregation of Preferences, Arrow's Impossibility Theorem, Social Welfare Functions, Welfare Maximization, Bergson-Samuelson Welfare Functions, Fair Allocations, Envy and Equity.

References

1. Varian, Hal R. (2009), *Intermediate Microeconomics: A Modern Approach*, 8th Edition, Norton, W. W. & Company, Inc.
2. Nicholson, W. and C. Snyder (2009), *Intermediate Microeconomics and Its Application*, 11th Edition, Cengage Learning.
3. Pindyck, R. S. and D. L. Rubinfeld (2012). *Microeconomics*, 8th Edition, Pearson Education.

ECON 203: Intermediate Macroeconomics I (Compulsory), Semester 3

Topics

- 1. Introduction/Basic Concepts of Macroeconomics:** What is Macroeconomics? How Do We Aggregate? Macroeconomic Markets, Macroeconomic Issues and Trade-offs; Tinbergen's Rule; Stocks and Flows; Statics, Comparative Statics and Dynamics.
- 2. National Income Accounting:** The Circular Flow of Income and Expenditure; GDP, Real GDP and Nominal GDP; Price Index, Purchasing Power Parity, Human Development Index.
- 3. Basic Model of Income Determination (Fixed Price):** The Autarky Economy Without Government; Consumption and Saving Functions; the Multiplier; the Autarky Economy with Government.
- 4. Money, Interest and Income: Equilibrium in the Commodity Market:** The IS curve; Equilibrium in the Money Market: the LM Curve.
- 5. Equilibrium in Commodity and Asset Markets:** Commodity and Money Market Interactions; Effectiveness of Monetary and Fiscal Policies; the Classical Case; Liquidity Trap.
- 6. Extended Model of Income Determination (Flexible Price and Open Economy):** Aggregate Demand Curve. The Open Economy; Foreign Exchange Market; Balance of Payments. IS-LM-BP Model; Fiscal and Monetary Policies under Fixed and Flexible Exchange Rate Regimes; Perfect Mobility of Capital; Mundell-Fleming Model; Interest Rate Parity. Aggregate Demand in an Open Economy.

Text

1. Taslim, M. A. and A. Chowdhury (1995). *Macroeconomic Analysis for Australian Students*, Prentice Hall, Sydney.

References

2. Dornbusch, R., Fischer, S. and R. Startz (2007). *Macroeconomics*, McGraw-Hill Higher Education.
3. Froyen, R. T. (1998). *Macroeconomics: Theories & Policies*, Pearson Education.
4. Parkin, M. & R. Bade (2012). *Macroeconomics, Canada and the Global Environment*, 8th Edition, Pearson Higher Education Canada.

ECON 204: Intermediate Macroeconomics II (Compulsory), Semester 4

Topics

1. **The Labour Market:** Demand for Labour; Supply of Labour; Classical Model; Imperfect Foresight Models; Adaptive Expectations, Complete Money Illusion and New Keynesian Models.
2. **Aggregate Supply:** Classical Model and Imperfect Foresight Models.
3. **Inflation:** Demand-Pull and Cost-Push Inflation; the Phillips Curve, Expectations-Augmented Phillips Curve; Costs of Inflation; Control of Inflation.
4. **Unemployment:** Definition. Frictional, Structural and Cyclical Unemployment, the Beveridge Curve; Hidden Unemployment; Long-term Unemployment; Hysteresis. Theories of Unemployment: Efficiency Wage Theory; Insider-Outsider Theory; Implicit Contract Theory.
5. **Consumption Function:** The Life-Cycle Theory of Consumption and the Permanent Income Theory of Consumption; Some Implications of the Theories.
6. **Demand for Money:** Definition and Functions of Money; Transactions, Precautionary and Speculative

Demand for Money. Transactions Demand for Money: the Inventory-Theoretic Approach (Baumol-Tobin). Speculative Demand for Money: Portfolio Balance Theory.

Text

1. Taslim, M. A. and A. Chowdhury (1995). *Macroeconomic Analysis for Australian Students*, Prentice Hall, Sydney.

References

2. *Macroeconomics*, McGraw-Hill Higher Education.
3. Froyen, R. T. (1998). *Macroeconomics: Theories & Policies*, Pearson Education.
4. Parkin, M. and R. Bade (2012). *Macroeconomics, Canada and the Global Environment*, 8th Edition, Pearson Higher Education Canada.

ECON 205: Mathematical Economics (Compulsory), Semester 3

Topics

1. **Sets, Number system and Functions:** Sets and Subsets, the Real Number and their Properties, Some Properties of Point Sets in Two Dimensional Space, Open Interval, Closed Interval, Bounded Interval, Convexity Property, Functions and their Domain and Range, One-to-One Function, Inverse Function, Composite Function, Linear Functions, Quadratic Functions, Rectangular Hyperbola, Power, Exponential and Logarithmic Function, Quasiconcavity, Quasiconvexity.
2. **Limits, Continuity of Functions and their Economic Application:** Definition of a Sequence,

Limit of a Sequence, Present Value Calculations, Compounding, Discounting, Continuity of Functions; Application of Continuous and Discontinuous Functions in Economics, Intermediate-Value Theorem and the Existence of Equilibrium.

3. **Derivatives and its Uses in Economics (Single Variable Case):** Derivatives, Differential, Conditions of Differentiability, Application of the Derivatives in Economics, Derivative of the Logarithmic Function and Elasticity, L'Hôpital's Rule, Optimization of Functions of One Variable, Maximum and Minimum Functions, Inflection Point, Optimization of Economic Functions.
4. **Derivatives and its Uses in Economics (Multivariable Case):** Partial Differentiation, Implicit Differentiation, Level Curves and Level Sets, Marginal Rate of Substitution and Marginal Rate of Technical Substitution, Homogeneous Functions, Elasticity of Substitution, Multiproduct Monopoly, Price Discrimination, Second-Order Condition using the Hessian, Constrained Optimization with Lagrange Multiplier, Second-Order Condition using Bordered Hessian.
5. **Comparative Static Analysis:** The Meaning of Equilibrium, Partial Market Equilibrium (Linear and Non-linear Model), General Market Equilibrium, Equilibrium in the National Income Analysis, Comparative Static Analysis in IS-LM Model.
6. **System of Linear Equations:** Solving Systems of Linear Equations- Graphing Solutions, Solution by Substitution and Elimination, Solution by Row Operations, Matrices, Solving Equations with Inverse Matrix and Cramer's Rule, Input- Output Analysis.

7. **Integration and their Economic Applications:** Indefinite Integral, Rules of Integration, Definite Integral, Properties of Integrals, Area under a Curve, Consumer Surplus, Producer Surplus, Improper Integrals, the Substitution Rule of Integration, Integration by Parts.
8. **Linear Programming:** A Graphic Approach, the Extreme Point Theorem, Slack and Surplus Variable, Mathematical Expressions of Economic Problem, the Simplex Algorithm (Maximization and Minimization).
9. **Non-Linear Programming:** The Nature of Non-Linear Programming, Graphical Solution, Kuhn-Tucker Conditions.

References

1. Hoy, M., et al (2011). *Mathematics for Economics*, 3rd Edition. The MIT Press, Cambridge, Massachusetts (Text).
 2. Simon, C. P. and L. Bloom (1994). *Mathematics for Economists*, W.W. Norton and Company (Text).
 3. Dixit, A. K. (1990). *Optimization in Economic Theory*, 2nd Edition Oxford University Press, Oxford.
 4. Dowling, E. T. (2001). *Theory and Problems of Introduction to Mathematical Economics*, Schaum's Outline Series, McGraw-Hill, 3rd Edition.
 5. Chiang, A. C. and K. Wainwright (2005). *Fundamental Methods of Mathematical Economics*, McGraw-Hill, 4th Edition.
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ECON 206: Economy of Bangladesh (Compulsory), Semester 3

Topics

- 1. Introduction:** Economic History of Pre-British Period, Economic History of British Period, Economic History of Pakistan Period, Economic Performance of Bangladesh under Different Political Regimes
- 2. Growth and Structural Change:** Population Growth, Labour Force and its Distribution, Growth in GDP and Per Capital Income, Structure and Composition of GDP, Macroeconomic Changes Since Independence
- 3. Agriculture Sector:** Definition, Structure and Growth of Agriculture and its Importance in the National Economy, The Resource Base and the Production Organization, Factors Behind Growth, Agricultural Asset Distribution, Agricultural Credit Performance, Co-Operative Strategies for Development, Changes in Agricultural Policies.
- 4. Industrialization:** Definition, Structure and Growth of Industries, Categories of Industries: Large, Small and Cottage Industries, A Comparison of Different Industries, The Public and Private Sectors, Experiences with Nationalization, Denationalization and Privatization, The Liberalization Regime, Foreign Exchange Regimes and Industrial Growth, Problems and Prospects of Foreign Direct Investment (FDI).

References

1. Khan, A.R. and M. Hossain, eds. (1989), *The Strategy of Development in Bangladesh*, Macmillan, London.

2. Centre for Policy Dialogue, *Independent Review of Bangladesh Development* (IRBD), (different issues from 1995 to 2001), University Press Limited, Dhaka.
3. Islam, S., eds. (1992). *History of Bangladesh: 1704-1971, Vol. 2, (Economic History)*, Asiatic Society of Bangladesh, Dhaka.
4. Abdullah, A., eds. (2001). *Bangladesh Economy 2000: Selected Issues*, BIDS, Dhaka.
5. Bayes, A. and A. Muhammad, eds. (1998). *Bangladesh at 25: An Analytical Discourse on Development*, University Press Ltd., Dhaka.

ECON 207: Statistical Methods (Compulsory), Semester 4

Topics

1. **Asymptotic Theory:** Convergence in Probability, Convergence in Distribution, Law of Large Numbers, Central Limit Theorem, Law of Iterated Expectation.
2. **Introduction to Statistical inference:** Basic Concepts, Nature of Statistical Inference, Sampling Distributions, Properties of Sampling Distribution, Derivation of Sampling Distributions.
3. **Theoretical Derivation of Sampling Distribution:** Sampling Distribution of Sample Proportion of Successes – Binomial Distribution, Normal Distribution – the Limiting Case of Binomial Distribution, Sampling Distribution of Sample Mean.
4. **Hypothesis Testing:** Design and Evaluation of Tests, Test Criterion, Type I and Type II Errors, Power of a Test, Quality of a Test.

5. **Distribution of Selected Test Statistics:** Tests for the Equality of Two Means, Estimation of the Population Variance, Chi-Square Distribution, t Distribution, Tests Concerning the Mean and Variance of a Non-normal Distribution, The F Distribution, Goodness of Fit Test.
6. **Properties of Estimators:** Small Sample Properties, Asymptotic/Large Sample Properties.
7. **Methods of Estimation:** Least Square Estimation, Maximum Likelihood Estimation, Best Linear Unbiased Estimation, Confidence Interval.

References

1. Kmenta, J. (1986). *Elements of Econometrics*, 2nd Edition, Macmillan, New York.
2. Anderson, D. R., et. al. (2006). *Statistics for Business and Economics*, Cengage Learning.
3. Newbold, P., Carlson, W. L. and B. Thorne (2006). *Statistics for Business and Economics*, Prentice Hall.
4. Wooldridge, J. M. (2005). *Introductory Econometrics: A Modern Approach*, 3rd Edition, South-Western College Pub.

ECON 208: Agricultural Economics (Optional), Semester 4

Topics

1. **Price Analysis:** Supply and Demand.
2. **Price Analysis:** Imperfect Competition.
3. **Understanding Agricultural Prices and Markets.**
4. **Agricultural Prices.**
5. **The Food Marketing Channel.**
6. **Empirical Agricultural Price Analysis.**
7. **International Agricultural Trade.**

8. **Agribusiness Marketing Strategies.**
9. Managing Price through Futures Markets.
10. **Strategic Price Setting.**
11. **Creative Pricing Schemes.**
12. Consumer Behavior and Research.
13. **Contractual Arrangements in Agriculture.**
14. The Issues in Agrarian Reform.

References

1. Norwood, B. and J. Lusk (2008). *Agricultural Marketing and Price Analysis*, Pearson Prentice-Hall.
2. Hudson, D. (2006). *Agricultural Markets and Prices*, Wiley-Blackwell.
3. Kolhs, R. and J. Uhl (2002). *Marketing of Agricultural Products*, 9th Edition, Pearson Prentice-Hall.
4. Schrimper, R. (2001). *Economics of Agricultural Markets*, Pearson Prentice-Hall.

ECON 210: Introduction to Accounting (Optional), Semester 4

Topics

1. **Accounting: the Language of Business:** Purpose & Native of Accounting Information – Uses & Users of Accounting Information.
2. **Conceptual Framework for Financial Accounting: First Level:** Basic Objectives; Second Level: Qualitative Characteristics of Accounting Information – Relevance, Reliability Comparability & Consistency; Basic Elements of Financial Statements; Third Level: Operational Guidelines – GAAP, Basic Assumptions, Principles & Constraints.

3. **The Accounting Process:** Double-Entry Recording Process, Accounting Equation – Effects of Transaction on the Accounting Equation.
4. **The Accounting Cycle:** Steps of Accounting Cycle – Identification & Recording of Transactions & Other Events – Journalizing Posting, Preparation of a Trial Balance.
5. **Accounting System & Special Journals:** Control Accounts & Subsidiary Ledger Special Journals, Advantage of Special Journal – General Journals.
6. **Preparation of Worksheet:** Unadjusted Trial Balance; Adjustments Estimated Items; Inventory & Related Accounts, Closing Entries. Post Closing Trial Balance Reversing Entries, Using Worksheet to Prepare Financial Statement.
7. **Financial Statement for Merchandising Operations:** Accounting for Merchandising Operation Inventory Calculation Preparation of Income Statements – Single – Step & Multiple – Step Preparation of Balance Sheet.
8. **Reporting & Analyzing Inventory:** Classifying Inventory Determining Inventory Quantities Inventory costing, Statement Presentation & Analysis.

References

1. Weygandt, J.J, Kimmel, P.D. and D. E. Kieso (2013). *Accounting Principles*, 11th Edition, Wiley.
2. Pyle, W. W. and K. D. Larson (1990). *Fundamentals of Accounting Principles*, 12th Edition, Mc-Graw Hill, Inc.
3. Needles, B. E. Jr, et. al. (2011). *Principles of Accounting*, 11th Edition, Cengage Learning.

ECON 211: Introduction to Political Science (Optional), Semester 3

Topics

- 1. What is Political Science?** : Overview, How Should We Define Politics? What is Power?
- 2. Modern State:** What is the Modern State?, How Is It Different from a Nation?, How Does It Differ from Government?, Are States Becoming Obsolete?, Are There Alternatives?, Do We Really Need States?, What Do States Do for Us?
- 3. Government:** What Makes a Government Policy Just?, Are There Universal Human Rights?, What Makes a Government Policy Efficient?, What is Democracy?, What is Autocracy? What Are the Characteristics of Military States?, One Party States; Monarchies, Are Democracies Better for All States?, What is Political Authority?, What is Political Legitimacy?, What are the Demands for Democratic Citizenship?, What is Social Capital?, What is Political Culture?, What is Political Socialization?
- 4. Elections and Voting:** What Do Elections Do for Us?, What Is a Better Voting System?, Who Votes?, What Influences Voter Choices?, Do We Need Political Parties?, How Do Two-Party Systems Differ from Multi-Party Systems?, What Are Interest Groups?
- 5. Types of Government:** Parliamentary Government, Presidential Government, Which System is Better?

References

1. Downs, A. (1957). *An Economic Theory of Democracy*, N. Y. Harper, New York.
2. Heilbroner, R. L. (1999). *The Worldly Philosophers. The Lives, Times, and Ideas of the Great Economic Thinkers*, Simon and Schuster, New York.

3. Weber, M. (2003). *The Protestant Ethic and the Spirit of Capitalism*, Minoela, Dover Publications, New York.
4. Shively, W. P. (2008). *Power and Choice*, 11th Edition, McGraw-Hill.

ECON 212: Introduction to Sociology (Optional), Semester 3

Topics

1. **Sociology.** The Sociological Perspective. The Origins of Sociological Thinking. The Development of Modern Sociology. Contemporary Theoretical Perspectives: Structural Functionalism and Conflict paradigms.
2. **Sociological Research.** Why is Sociological Research Necessary? The Sociological Research Process. Quantitative and Qualitative Research. Theory, Hypothesis, Concepts, Variable, Indicator and Operational Definition. Techniques of Data Generation. Validity, Reliability, Generalizability and Ethical Issues in Sociological Research.
3. **Culture.** Culture and Society in a Changing World. Components of Culture. Cultural Relativity and Ethnocentrism. High Culture and Popular Culture. Multiculturalism and Subculture. Technology, Cultural Change and Diversity.
4. **Socialization.** Why is Socialization Important? Nature vs. Nurture. Agents of Socialization. Sociological Theories of Human Development. Socialization through the Life Course.
5. **Crime and Deviance.** Deviance, Crime and Juvenile Delinquency. Functionalist Perspectives on Crime and Deviance. Symbolic Interactionism Perspective

- on Crime and Deviance. Conflict Perspectives on Crime and Deviance. The Criminal Justice System.
6. **Social Inequality and Stratification.** Systems of Stratification. Forms of Social Stratification: Caste, Estate and Class. Theories of Social Stratification: Marxian, Weberian and Davis –Moore Theories. Closed vs. Open Society; Social Mobility. Stratification System in Bangladesh.
 7. **Ethnic Relations and Race.** Race and Ethnicity. Prejudice. Discrimination. Racism. Sociological Perspectives on Race and Ethnic Relations. Minorities. Immigrant and Minority.
 8. **Families and Intimate Relationships.** Families in Global Perspective. Theoretical Perspectives on Families: Functionalist and Critical Theories. Divorce; Causes and Consequences of Divorce. Alternative Families: One Parent Family, Cohabitation, Gay and Lesbian Couples.
 9. **Population and Urbanization. Demography:** The Study of Population. Population Growth in a Global Context. Urbanism, Urbanization and Chicago School. Perspectives on Urbanization and the Problems of Third World Mega Cities.
 10. **Collective Behaviour, Social Movements, and Social Change.** Collective Behaviour. Social Movements. Social Movement Theories. Social Change in the Future.

References

1. Macionis, J. J. (2004). *Sociology*. Pearson, Toronto.
2. Giddens, A. (2009). *Sociology*. Polity Press, Cambridge.

**ECON 213: Introduction to Psychology (Optional),
Semester 4**

Topics

- 1. Introduction to Psychology:** Why Study psychology? What are the Different Approaches to Psychology?
- 2. Introduction/Scientific Basis of Psychology Research Methods:** The Nature of Psychology, the History of Psychology, Subfields of Psychology, How Psychologists View Behavior, Methods Used by Psychologists to Study Behavior, Psychology's Perspectives, Neuronal Structure, Organization of the Central Nervous System, Organization of the Peripheral Nervous System, Methods of Studying the Brain and Nervous System, Endocrine Function, Genetics and Behavior.
- 3. Motivation/Emotion Theories of Personality:** Maslow and the Hierarchy of Needs, Hunger, Obesity, Thirst, Motivational Theories, Emotion, Theories of Emotion, Romantic Love in Western Culture, Personality and Personality Theories, Psychoanalytic Perspective, Trait Perspective, Social Perspective, Humanistic Perspective, Measurement of Personality.
- 4. Social Psychology:** Attitudes, Social Perception, Interpersonal Attraction, Obedience to Authority, Group Behavior, Conformity, Environmental Psychology.
- 5. Memory:** What is Learning?, Classical Conditioning, Operant Condition, Skinner and Reinforcement, Schedules of Reinforcement , Types of Learning, Behavior Therapy, Memory, Short Term Memory, Long Term Memory, Factors Affecting Learning, the Biology of Memory.

6. **Physiology:** Biological Bases of Behavior, Sensation and Perception: Neurons, the Brain's Building Blocks, Nervous Systems, Parts of the Brain, Endocrine System, Sensation vs. Perception, Vision - Structure and Function of the Eye, Theories of Color Vision, Depth Perception, Principles of Perceptual Organization, Visual Illusions, Hearing, Structure and Function of the Ear, Theories of Hearing, Smell, Taste and Touch, Kinesthetic and the Vestibular Sense.
7. **States of Consciousness:** Nature of Consciousness, Stages of Sleep, Functions of Sleep, Dreams, Sleep Disorders, Meditation, Hypnosis, Alcohol and its Effects, Causes of Alcoholism, Treatment of Alcoholism, Drug States.
8. **Stress, Abnormal Psychology, and Treatments:** Definition of Stress, Type A Behavior vs. Type B Behavior, General Adaptation Syndrome, Effects of Chronic Stress, Coping Techniques, Defining Abnormal Behavior, Classifying Abnormal Behavior, Anxiety Disorders, Dissociative Disorders, Somatoform Disorders, Mood Disorders, Schizophrenic Disorders, Personality Disorders, Psychosexual Disorders, Suicide, DSM-V, Historical Overviews, Psychoanalysis, Behavioral Therapy, Group Therapy, Biological Therapies, Cognitive Therapy.

References

1. Plotnik, R. (2002). *Introduction to Psychology*, 6th Edition, Wadsworth-Thomson Learning, Belmont, California.
2. Axline, V. M. (1986). *Dibs In Search Of Self*, Ballantine Books, New York.
3. Frankl, V. E. (2008). *Man's Search For Meaning*, Rider & Co., New York.

4. Hock, R. R. (2002). *Forty Studies that Changed Psychology*, Prentice Hall, New Jersey.
5. Stacey, P. (2004). *The Boy Who loved Windows*, Cambridge, De Capo Press, Massachusetts.

ECON 214: Introduction to Philosophy (Optional), Semester 4

Topics

1. **Epistemology:** the Problem of the External World—Rationalism (Descartes), Empiricism (Locke, Berkeley, Hume), Criticism (Kant), Epistemological Idealism, Realism, Dialectical Materialism. The Problem of Induction: **Hume, Russell, Keynes.**
2. **Metaphysics:** Idealism vs. Materialism, Dualism, Personal Identity, Kant's view of Metaphysics, Logical Positivists' Attack on Metaphysics.
3. **Philosophical Anthropology (Philosophy of Man):** Philosophy of Mind—the Substance Theory, the Bundle theory, the Materialistic theory, the Behaviouristic theory, the Mind-Body Problem.
4. **Ethics:** Free Will (Determinism vs. indeterminism), Utilitarianism, Consequentialism vs. Deontology, Moral Relativism.

References

1. Copi, I.M. & J.A. Gould (1972). *Readings on Logic*, 2nd Edition, Macmillan Publishing & Co., Inc., New York.
2. Frankena, W.K. (1995). *Ethics*, Prentice-Hall, New Delhi.

3. Morton, A. (2004). *Philosophy in Practice: An Introduction to the Main Questions*, 2nd Edition, Blackwell Publishing, Oxford.
4. Lille, W. (1966). *An Introduction to Ethics*, Methuen and Co., London.
5. Mill, J. S. (2007). *Utilitarianism*, Dover Publications, New York.

ECON 301: Econometrics I (Compulsory), Semester 5

Topics

1. **Review of Mathematical Tools, Probability Distributions and Statistical Inference:** Basic Mathematical Tools, Probability Distributions, Point and Interval Estimation, Properties of Estimators, Hypothesis Testing and Confidence Intervals.
2. **Nature of Econometrics and Economic Data:** What is Econometrics? Why a Separate Discipline? Methodology of Econometrics, Economic Data.
3. **Two-Variable Regression Analysis:** Introduction, the Concept of Population Regression Function (PRF), Stochastic Specification of PRF, the Significance of the Stochastic Disturbance Term, Sample Regression Function (SRF).
4. **Two-Variable Regression Model:** The Method of Ordinary Least Squares (OLS), Classical Linear Regression Model, Standard Errors of Least-Squares Estimates, Properties of Least Squares Estimators, The Gauss-Markov Theorem, The Coefficient of Determination.
5. **The Normality Assumption: Classical Normal Linear Regression Model (CNLRM):** The

Probability Distribution of Disturbance u_i , The Normality Assumption, Properties of OLS Estimators Under the Normality Assumption, Probability Distributions Related to the Normal Distribution: The t, Chi-square, and F Distribution.

6. **Two-Variable Regression: Interval Estimation and Hypothesis Testing:** Interval Estimation, Confidence Intervals for Regression Coefficients, Hypothesis Testing, The Problem of Prediction, Reporting and Evaluating the Results of Regression Analysis.
7. **Extensions of the Two-Variable Linear Regression Model:** Regression through the Origin, Scaling and Units of Measurement, Functional Forms of Regression Models, Log-Linear Regression Models, Semi-Log and Reciprocal Models.
8. **Multiple Regression Analysis:** K-Variable Linear Regression Model (in Matrix form), OLS Estimation, Coefficient of Determination and Adjusted R Square, Testing of Hypothesis.

References

1. Gujarati, D. (2004). *Basic Econometrics*, 4th Edition, McGraw-Hill.
2. Judge, G. G., et. al. (1980). *Theory and Practice of Econometrics*, John Wiley and Sons, Inc.
3. Wooldridge, J. M. (2005). *Introductory Econometrics: A Modern Approach*, 3rd Edition, South-Western College Pub.
4. Kmenta, J. (1986). *Elements of Econometrics*, 2nd Edition, Macmillan, New York.
5. Maddala, G.S. (1992). *Introduction to Econometrics*, 2nd Edition, Prentice Hall.

**ECON 302: Econometrics II (Compulsory),
Semester 6**

Topics

- 1. Multicollinearity:** The Nature of Multicollinearity, Estimation in the Presence of Perfect Multicollinearity, Estimation in the Presence of High but Imperfect Multicollinearity, Consequences of Multicollinearity, Detection of Multicollinearity, Remedial Measures, Exercise with STATA.
- 2. Heteroskedasticity:** The Nature of Heteroskedasticity, OLS Estimation in the Presence of Heteroskedasticity, The Method of Generalized Least Squares (GLS), Consequences of Heteroskedasticity, Detection of Heteroskedasticity, Remedial Measures, and Exercise with STATA.
- 3. Autocorrelation:** Introduction, Estimation in the Presence of Autocorrelation, Properties of OLS Estimators in the Presence of Autocorrelation, Detecting Autocorrelation, Remedial Measures, Exercise with STATA.
- 4. Dummy variable regression models:** Nature of Dummy Variables, Model with a Single Dummy Variable, Regression with a Mixture of Quantitative and Qualitative Regressions: the ANCOVA Models, Some Illustrative Examples of Regressions on Dummy Variables, The Structural Stability of Regression Models/ Comparing two Regressions with Dummy Variable Approach, Interaction Effects Using Dummy Variables, Use of Dummy Variables in Seasonal Analysis, **Exercise with STATA.**
- 5. Specification Errors:** Model Specification Criteria, Types of Specification Errors, Consequences of Model Specification Errors, Tests of Specification Errors, **Exercise with STATA.**

References

1. Gujarati, D. (2004). *Basic Econometrics*, 4th Edition, McGraw-Hill.
2. Judge, G. G., et. al. (1980). *Theory and Practice of Econometrics*, John Wiley and Sons, Inc.
3. Wooldridge, J. M. (2005). *Introductory Econometrics: A Modern Approach*, 3rd Edition, South-Western College Pub.
4. Maddala, G.S. (1992). *Introduction to Econometrics*, 2nd Edition, Prentice Hall.
5. Hamilton, L. C. (2012). *Statistics with STATA: Version 12*, 8th Edition, Cengage Learning.

ECON 303: Real Analysis (Optional), Semester 5

Topics

1. **Preliminaries:** Sets and Functions, Mathematical Induction, Finite and Infinite Sets.
2. **The Real Numbers:** The Algebraic and Order Properties, Absolute Value and Real Line, the Completeness Property.
3. **Sequences and Series:** Limit Theorems, Monotone Sequence, the Cauchy Criterion.
4. **Limits:** Limits and Functions, Limit Theorems.
5. **Continuous Functions:** Continuous Functions, Uniform Continuity, Monotone and Inverse Functions.
6. **Implicit Functions and their Derivatives:** Implicit Functions, Level Curves and their Tangency, Systems of Implicit Functions.
7. **Elements of Logic:** Necessity and Sufficiency, Theorems and Proofs.

8. **Elements of Set Theory:** Notation and Basic Concepts, Convex Sets, Relations and Functions.
9. **A Little Topology:** Continuity, Some Existence Theorem.
10. **Real Valued Functions:** Related Set, Concave Functions, Quasiconcave Function.

References

1. Mattuck, A. (1998). *Introduction to Analysis*, Prentice Hall.
2. Fitzpatrick, P. M. (2004). *Advanced Calculus*. 2nd Edition, Brooks Cole.
3. Bartle, R. and D. R. Sherbert (2011). *Introduction to Real Analysis*, 4th Edition, Wiley.
4. Jehle, G. and P. J. Reny (2011), *Advanced Microeconomic Theory*, 3rd Edition, Prentice Hall.

ECON 304: Dynamic Optimization (Optional), Semester 6

Topics

1. **Introduction:** Dynamic & Static Mathematics, Dynamic Optimization & Static Optimization, Classical Mathematics & Modern Mathematics, Optimal Timing & Finding the Rate of Growth, Application and Rationale.
2. **Mathematics for Economic Dynamics:** Continuous & Discrete time, Differential & Difference Equations, Order of Equations, Linear Equations. Autonomous Equations, Constant & Variable Terms, Steady State, Convergence & Divergence.
3. **First order Differential Equation:** Types, Solution Procedures for Each Type, Integrating Factor

- Method, Initial and Boundary Conditions, Steady State and Convergence, Solow Growth Model, Fishery Model, Aggregate Growth Model with Technological Change, Exact Differential Equations, From Non-exact to Exact through Integrating Factor.
4. **Second order Differential Equation:** Types, Solution Procedures for Each Type, Distinct & Equal Roots, Complex Roots & Transformations into Trigonometric Functions, Steady State, Stability Condition and Convergence.
 5. **Systems of Differential Equations:** Solution Procedures- Substitution Method, Distinct, Equal & Complex Roots, Determining Constants, The Direct Method (with Matrix), Transformation of Non-Linear Equations into Linear Equations and Vice Versa.
 6. **Phase Diagram and Qualitative Analysis:** Linear Differential Equation and Phase Diagram, Non-Linear Differential Equation and Phase Diagram, Isocline, Trajectory Analysis of the Stability, Stability & Coefficient Matrix.
 7. **First Order Difference Equations:** Types, Solution Procedures for Each Type, Initial and Boundary Conditions, Steady State and Convergence, Dynamic Stability of Equilibrium (Stability Conditions), Phase Diagram and Qualitative Analysis.
 8. **Second order Difference Equations:** Types, Solving Methods for Each Type, Characteristic Roots, Initial and Boundary Values, Stability Conditions, Steady State and Convergence.
 9. **Simultaneous Difference Equations:** Solution Procedures- Substitution & Direct Methods, Distinct, Equal Roots, Initial & Boundary Conditions, Steady States & Stability.

10. **Dynamic Optimization:** Rationale, Application, Methods.
11. **Calculus of Variation and Optimal Control Theory:** The Nature of Optimal Control, The Maximum Principle/Setting up the Hamiltonian, Control and State Variables, Solution Procedure, Necessary and Sufficient Conditions, an Interpretation of λ and the Hamiltonian, Current Valued Hamiltonian, Conditions Revisited for Current Valued Hamiltonian. Initial & Boundary Conditions, Fixed vs. Free End Point Problems, Inequality Constraints, Usage of Transversality Condition, Infinite Time Horizon, Constraints on Control Variable.

References

1. Chiang, Alpha (1992). *Elements of Dynamic Optimization*, McGraw-Hill.
2. Leonard, D. and N. v. Long (1992). *Optimal Control Theory and Static Optimization in Economics*, Cambridge University Press.
3. Peressini, A. L., et. al. (1993). *The Mathematics of Nonlinear Programming*. Springer.
4. Hoy, M., et al (2011). *Mathematics for Economics*, 3rd Edition. The MIT Press, Cambridge, Massachusetts.
5. Shrone, R. (2002). *Economic Dynamics: Phase Diagrams and their Economic Application*, Cambridge University Press.

ECON 305: International Trade (Compulsory), Semester 5

Topics

1. **International Trade Theories:** Introduction to International Trade, Absolute Advantage Theory,

Opportunity Cost Theory, Labor Productivity and Comparative Advantage: The Ricardian Model, Factor Endowments and Heckscher-Ohlin Model, Leontief Paradox, Factor Price Equalization Theorem.

2. **Determination of Equilibrium in International Trade:** The Offer Curve.
3. **Balance of Payment:** Introduction to the Concept of BOP.
4. **International Trade Policy:** Import Substitution vs. Export Promotion, Tariffs vs. Non-tariff Barriers, Free Trade vs. Protectionism, Preferential Trading Arrangements, Concept of Trade Creation & Trade Diversion, Terms of Trade, Economic Integration, Regional Trade Agreements, The Roles of WTO in International Trades.
5. **Trade Policies in the Context of Bangladesh:** A Review of the Evolution of Trade Policies in Bangladesh (Export Policy, Import Policy).

Texts

1. Krugman, P., Obstfeld, M. and M. Melitz (2011). *International Economics: Theory and Policy*, 9th Edition, Addison- Wesley.
2. Sodersten, B. and G. Reed (1994). *International Economics*, 3rd Edition, Palgrave MacMillan.

References

3. Chacholiades, M. (1989). *International Trade Theory and Policy*. McGraw-Hill Inc.
4. Raihan, S. (2007). *Dynamics of Trade of Liberalization in Bangladesh: Analysis of Policies and Practices*, Pathak Shamabesh.
5. Raihan, S. and A. Razzaque, eds. (2007). *WTO and Regional Trade Negotiation Outcomes: Quantitative Assessments of Potential Implications on Bangladesh*, Pathak Shamabesh.

ECON 306: Development Economics (Compulsory), Semester 5

Topics

- 1. Economic Development:** Overview: Income and Growth, Income Distribution in Developing Countries, Human Development, Some Structural Features.
- 2. Poverty and Under-Nutrition:** Poverty: First Principles, Empirical Observations, Functional Impact of Poverty.
- 3. Human Capital:** Educational and Health Systems and their Roles in Development, Child Labor, the Gender Gap.
- 4. Rural and Urban:** The Structural Viewpoint, Rural-Urban Interaction, the Lewis Model, Rural-Urban Migration.
- 5. Market for Land:** Ownership and Tenancy, Land Rental Contracts, Land Ownership, Principal Agent Theory and Applications.
- 6. Market for Labor:** Labor Categories, a Familiar Model, Poverty – Nutrition and Labor Market, Permanent Labor Market.
- 7. Market for Credit:** Rural Credit Markets, Theories of Informal Credit Market, Interlinked Transactions, Alternative Credit Policies, Microfinance.
- 8. Insurance:** Basic Concepts, the Perfect Insurance Model, Limits to Insurance, Information and Enforcement.
- 9. Bargaining Within Families:** Income is Not Spent in the Same Way by Women and by Men: Evidence from Developed and Developing Countries.

Competition within the Family is Not Limited to Sharing the Resources. This Leads to Lower Productivity and Lower Welfare for All Members in the Family.

10. **Formal and Informal Institutions:** Collective Action: Social Networks: No Policy Happens in the Void. What Role Do Informal Institutions and Norms Play? Social Norms as an Obstacle to the Demographic Transition: Formal Institutions – Differences, Importance for Economic Performance. The Mechanics of Why Institutions Matter.
11. **Environment and Development:** Deforestation and Macroeconomic Environment, Tragedy of the Commons, Externalities, Natural Resource Degradation and Economic Policies, Climate Change and Development.

References

1. Ray, D. (1998). *Development Economics*, Oxford University Press.
2. Bardhan, P. and Udry, C. (1999). *Development Microeconomics*, Oxford University Press.
3. Todaro, M. and Smith, S. (2011). *Economic Development*, 11th Edition, Pearson Education, Addison Wesley.
4. Ghatak, S. (2005). *Introduction to Development Economics*. 3rd Edition, Routledge.
5. Meier, G. M. and J. E. Rauch (2005). *Leading issues in economic development*, 8th Edition, Oxford University Press.

ECON 307: Population Economics (Optional), Semester 5

Topics

- 1. Introduction:** Meaning of Population Analysis, Distinction between Formal Demography and Population Studies, Levels of Population Analysis, Sources and types of Population data.
- 2. Basic Demographic Methods:** Proportion, Percentage, Rates and Ratios, Rates of Population Growth, Doubling Time, the Balancing Equation.
- 3. Age and Sex Composition:** Definition and Importance of Age and Sex Composition, Construction of Population Pyramid, Measures of Sex Composition Analysis.
- 4. Basic Measures of Fertility:** Basic Concepts, Crude Birth Rate, General Fertility rate, Age Specific Marital Fertility Rate, Total Fertility Rate, Crude Rate of Natural Increase, Mean Length of Generation, Stable Population and Stationary Population.
- 5. Economic Analysis on Fertility:** Models of Fertility, the Cost of Children and the Use of Demographic Variables in Consumer Demand, Demand for Children in Low Income Countries-Effect of Females' Education on Demand for Children, Population Growth and Poverty, Population Growth and Agriculture.
- 6. Population Policies:** Content and Trends.
- 7. Economics of Family:** Theories of the Family, the Formation and Dissolution of Families, Intra-household Distribution, Inter-generational and Inter-household Economic Links.
- 8. Basic Measures of Mortality:** Basic Concepts, Different Observed and Adjusted Rates, Crude

Death Rate, Age and Cause Specific Death Rate, Infant Mortality Rate, Neonatal Mortality Rate, Prenatal Mortality Rate, Maternal Mortality Rate and Maternal Death Rate.

9. **Migration:** Basic Concepts, Sources of Data, Measurement of Migration, Direct Measurement of Migration and Retrospective Questionnaire, Life Time Migration.
10. **Migration and Economic Development:** Internal Migration, Economic Impact of International Migration: Developed and Developing Country Perspectives, Population Growth, Migration (Skilled and Unskilled) and Economic Development.
11. **Population Aging and Economy:** Demographic Composition, and the Economy: The Economics of Individual and Population Ageing, Age Composition, Demographic Dividend and Economic Development.
12. **Population Transition and Economy:** Demographic Transition.

References

1. Carmichael, G. (2001). *An Introduction to Demographic Analysis*, the Australian National University: Canberra.
2. Hinde, A. (1998). *Demographic Methods*, Oxford University Press Inc., New York.
3. Newell, C. (1988). *Methods and Models in Demography*, Guilford Press, New York.
4. Rosenzweig, M. R. and O. Stark, eds. (1997). *Handbook of Population and Family Economics*, Vol. 1, North Holland.

**ECON 308: Public Economics (Compulsory),
Semester 6**

Topics:

- 1. Introduction to Public Economics:** Nature of Economic Effects of Policies, Positive & Normative Analysis, Criteria for Policy Evaluation, Market Efficiency: General Equilibrium in Competitive Market and Efficiency.
- 2. Theory of Public Goods and Externalities:** Characteristics of Public Goods -Pure and Impure Public Goods, Publicly Provided Private Goods, Pareto Efficient Conditions in the Presence of Public Goods, Efficiency Conditions for Private and Public Goods, Private Provision of Public Goods, Externality and Public Sector Intervention, Types of Externalities and Inefficiency, Externalities and Coase Theorem, Other Types of Market Failure.
- 3. Principles of Expenditure Analysis:** Allocative and Distributive Effects, Non-Marketed Goods, Fixed Quantity Subsidy vs. Excise Subsidy.
- 4. Theory of Public Choice/ Collective Decision Making:** Voting Rules and Resource Allocation.
- 5. Principles of Tax Analysis:** Desirable Characteristics of a Tax System, General Factors Affecting Incidence of Various Taxes, Partial vs. General Equilibrium Analysis of Incidence of Taxation, The Efficiency Costs of Taxation, Elasticity and Incidence, Different Bases for Taxation, The Concept and Measurement of Welfare Cost of Taxation.
- 6. Optimal Commodity Taxation.**
- 7. Taxation and Saving:** Background: Capital Income, Wealth and Saving Behavior, the Optimal

Taxation of Capital, Tax Policy, Rates of Return and Saving.

8. **Taxation and Firm Behavior:** Taxation of Corporate Capital, Taxation and Financial Policy.
9. **Taxation of Labor Income:** Theory of Income Taxation, Empirical Analysis of Taxation and Labor, Tax Rates and Taxable Income.
10. **Cost-Benefit Analysis:** Private Cost-Benefit Analysis, Social Cost-Benefit Analysis, Measuring Non-monetized Costs and Benefits.
11. **Deficit Finance:** Deficit and Debts, Incidence of Deficit Finance, Choice between Tax and Borrowing.
12. **Public Finance:** Bangladesh Perspective: Recent Trend of Revenue and Expenditure, Analysis of Budget.

References

1. Stiglitz J. E. (1988). *Economics of Public Sector*, Norton & Company.
2. Gruber, J. (2005). *Public Finance and Public Policy*. Worth Publishers, New York.
3. Rosen, H. (2005). *Public Finance*, McGraw-Hill.
4. Atkinson A.B. and J.E. Stiglitz (1980). *Lectures on Public Economics*, McGraw-Hill.
5. Browning. E.K. and J.M. Browning (1994). *Public Finance and the Price System*, McMillan & Company.

ECON 309: Labor Economics (Optional), Semester 6

Topics

1. **Introduction to Labor Economics:** Some Basic Concepts: Labor Force Participation-- Concept,

Measurements, Trends; the Earnings of Labor
How the Labor Market Works; the Demand for
Labor; the Supply of Labor; the Determination of
Wage.

2. **Labor Demand:** Profit Maximization and Labor Demand; Short-Run Labor Demand When Both Product and Labor Markets are Competitive Labor Demand in the Competitive Markets When Other Inputs Can be Changed; Labor Demand When Product Market is Not Competitive; Labor Market Effects of Employee Payroll Taxes and Wage Subsidies; Labor Demand Elasticities.
3. **Labor Supply:** the Neoclassical Theory of Labor Supply and the Analysis of Labor/ Leisure Choice Labor Supply Model with Household Production and Within Family; Life-Cycle Aspect of Labor Supply; Empirical Aspects of Labor Supply.
4. **Education and Human Capital:** the Theory of Human Capital; Education, Training and Life Cycle Earnings; Demand for Higher Education Education as a Signaling Device; Returns to Education.
5. **Unions and Collective Bargaining:** Union Membership, Structure, and Objectives Constraints on the Achievements of Union Objectives; Activities and Tools of Collective Bargaining; the Right-to Manage Model; Efficient Contracts Model; the Effects of Union on Wages Employment, Productivity and Profits.
6. **Unemployment:** Types of Unemployment Methodologies for Making Employment Projections, Using both Aggregate and Sectoral Models; Labor Force and Un- and Underemployment Bangladesh.

7. **Inequality in Earning:** Measuring Inequality; Underlying Causes of Inequality; Lorenz Curves and Gini Coefficients: Empirical Evidence from Bangladesh.
8. **Institutions and Labor Market:** Concept and Historical Evolution of Active Labor Market Policies (ALMPs) and Its Various Elements; Relative Importance of ALMPs and their Relevance for Developing Countries, like Bangladesh; Introduction to Labor Market Institutions; Case For and Against Interventions in the Labor Market; Minimum Wage and its Effects; the Effects of Employment Protection.

References

1. Borjas, G. (2002). *Labor Economics*, 2nd Edition, McGraw-Hill, Boston.
2. Bosworth, D., P. Dawkins and T. Stromback (1997). *Economics of the Labor Market*, Financial Times Press.
3. Cahue, P. and A. Zylberberg (2004). *Labor Economics*, MIT Press.
4. Ehrenberg, R. and R. Smith (2008). *Modern Labor Economics: Theory and Public Policy*, 10th Edition, Addison Wesley.
5. Berg, J. and D. Kucera, eds.(2008). *In Defence of Labour Market Institutions*, International Labour Office, Geneva.

ECON 310: International Finance (Optional), Semester 6

Topics

1. **International Finance Theory:** Foreign Trade and National Income: National Income Accounting,

Balance of Payments and its Components, Exchange Rates and Foreign Exchange Market, The Asset Approach to Exchange Rate Determination, Demand and Supply of Foreign Exchange: Fixed and Flexible Exchange Rates, Interest Rates, Expectations and Equilibrium, Inflation and Exchange Rate Dynamics, Purchasing Power Parity and the Long Run Exchange Rate Model, General Model of Long Run Exchange Rate, International Exchange Rate Differential and the Real Exchange Rate.

2. **International Financial Policy:** International Monetary System, Macroeconomic Policy and Co-ordination under Floating Exchange Rate, Optimum Currency Area and the European Experience, The Global Capital Market, performance and policy problems, International Investments, Financial Crisis in Developing Countries.
3. **International Finance: Bangladesh Context:** Assessing Investment Climate in Bangladesh.

Text

1. Krugman, P., Obsfeld, M. and M. Melitz (2011). *International Economics: Theory and Policy*, 9th Edition, Addison- Wesley.

Additional References

2. Caves, R. E., J. A. Frankel and R. W. Jones (2006). *World Trade and Payments - An Introduction*, 10th Edition, Addison-Wesley.
3. Dornbusch, R. (1980), *Open Economy Macroeconomics*, Cambridge University Press.
4. Melvin, M. and S. Norrbin (2012). *International Money and Finance*, 8th Edition, Academic Press
5. Sodersten, B. and G. Reed (1994). *International Economics*, 3rd Edition, Palgrave MacMillan.

ECON 311: Health Economics (Optional), Semester 6

Topics

- 1. Introduction to Health Economics:** Subject Matter of Health Economics, Application of Economics to Health and Health Care, Is Health Care Different?, Economic Rationale for Government Intervention in Health Care Markets and an Introduction to Regulation.
- 2. Health Production:** The Determinants of Health, Production Function of Health.
- 3. Demand for Health:** The Demand for Health, Labor-Leisure Trade-Offs, Investment/Consumption Aspects of Health, the Demand for Health Capital, an Integrated Framework of Grossman Model.
- 4. Asymmetric Information and Agency, Supplier Induced Demand:** Asymmetric Information, the Agency Relationship, the Need to Consider SID, Common Representation of SID, Price Rigidities and SID, Target Income Model of SID, Disutility of Discretion Model of SID, Profit Maximizing Model of SID, Health, Health Care and Advertising, Optimum Level of Advertising.
- 5. Health Care Financing:** Risk and Insurance, Demand for Insurance, Supply of Insurance, the Case of Moral Hazard, Coinsurance and Deductibles, Provider Payment Mechanisms, the Concept of Universal Health Coverage, Health Care Financing Strategy of Bangladesh 2012-2032.
- 6. Equity, Efficiency:** Efficiency and Competitive Markets, Promoting Competition in the Health Sector, Principles of Equality and Equity in Health and Health Care Need and Need-based Distribution.
- 7. Economic Evaluation:** The Importance of

Economic Evaluation, Different Types of Economic Evaluation, Cost Effectiveness Analysis, Cost Utility Analysis, Cost Benefit Analysis, Calculating QALY and DALY.

References

1. Folland, S., Goodman, A.C. and M. Stano (2004). *The Economics of Health and Health Care*, Macmillan.
2. Jacob, P. (1991). *The Economics of Health and Medical Care*, Aspen Publishers inc.
3. McGuire, A., Henderson, J. and G. Mooney (1988). *The Economics of Health Care: an Introductory Text*. London, Routledge and Kegan Paul.
4. Killingsworth, J., et. al. (1999). *Unofficial Fees in Bangladesh: Price, Equity and Institutional Issues*, Health Policy and Planning, 14 (2), pp 152-163.
5. Health Economics Unit (2001). *Financing the Health and Population Sector-Resource Projections*, Health Economics Unit, MOHFW, Research Report 23.

ECON 312: Software Applications for Economic Analysis (Optional), Semester 6

Topics

Section 1: SPSS

1. Introduction to SPSS
2. Data Storage, Analysis and Program Writing in SPSS.
3. Regression and Other Analysis in SPSS.
4. Laboratory Work with SPSS.

Section 2: STATA

5. Introduction to Stata
6. Data Storage, Analysis and Program Writing in Stata
7. Regression and Other Analysis in Stata.
8. Laboratory Work with STATA.

Section 3: MATLAB

9. Introduction to MATLAB.
10. Problem Solving in MATLAB.
11. Laboratory Work with STATA.

References

1. SPSS Handouts.
2. STATA Handouts.
3. MATLAB Handouts.

ECON 314: Development Patterns and Economic Systems (Optional), Semester 5

Topics

1. **Subject Matter and Methodology:** Concept of Economic System and Socio-Economic Formation (Five systems), Classical, Physical, Neo-classical, and Radical Schools (An Excursion), Interrelationship between Production, Exchange, Distribution and Consumption (PEDC), Concept of Production Relations and Mode of Production, Economic Categories and Economic Laws.
2. **Primitive Communal Economy:** Anthropological History of Human Being, The Food-Gathering Economy, Two Stages in the Development (Appropriation and Reproductive Economies),

Development of Productive Forces (Division of Labor), Principal Economic Law and Production Relations, Economic Law and Production Relations, Contradictions of the Primitive-Communal Economy, Erosion and Disintegration of Primitive Economy.

3. **Economy of Slavery:** Origin of Slave Economy, Objective Basis and Different types of Slavery, Slavery as a Global System, Productive Forces and Large-Scale Production (Latifundia and Ergasteria); Principal Economic Law and Production Relations under Slavery, Usury and Trade Capital under Slavery, Contradictions and Erosion of the Slavery Economic System.
4. **Feudal Economic System:** Dual Origin of Feudalism, Different Types of Feudal Bondage, Productive Forces under Feudalism, Principal Economic Law and Agricultural Rents under Feudalism, Usury and Trade Capital under Feudalism, Contradiction of Feudalism and its Disintegration.
5. **Capitalist Economic System:** Pre-Monopoly Capitalism: Commodity and Money, Theory of Value (Classical and Radical Views), Conversion of Money into Capital. General Theory of Capital, Theory of Surplus Value: Absolute and Relative Surplus Value, Wage: Essence and Forms, Law of Accumulation. Metamorphosis and Circuit of Capital, Composition of capital: Constant and Variable, Fixed and Circulatory, Theory of Reproduction (Simple and Extended), Transformation of Surplus Value into Profit, Rent and Interest.
6. **Economy of Societies of the Middle Ages:** English Manorial System; Medieval Crafts and Guilds;

Enclosure Movement and the Agrarian Revolution in England, A Brief survey of the Economic Conditions Prior to the Meiji Restoration in Japan, Orientation, Feudalism-Example of the Indian Subcontinent.

7. **Economic of Modernization:** The Capitalist Path: Development of Indian economy: Colonial and Post-colonial Periods, Industrial Revolution in England-Causes and Consequences, Comparative Economic Situation of UK Germany Italy, Holland and Spain in the Early 19th Century, Industrialization Process in Japan-the Special Role of Agriculture, Small Scale and Cottage Industry, Foreign Trade, Zaibatsu Government.

References

1. Fustfeld D. R. (2001). *The Age of the Economist*, Prentice Hall.
2. Sergeevich, S., A. Motylev and A. S. Illyn (1986). *What is Political Economy?*, Progress Publishers, Moscow.
3. Kozlov, G. A. (1977). *Political Economy: Capitalism*.
4. Burkitt, B. (1984). *Radical Political Economy: An Introduction to the Alternative Economics*.
5. Abalkin, L. and Y. Sdobnikov (1984). *Political Economy*. Central Books Ltd.

ECON 316: Monetary Economics (Optional), Semester 5

Topics

1. **Introducing the Macroeconomy:** Aggregate Markets, IS-LM model, Aggregate Demand and

Supply, Policy Neutrality vs. Policy Effectiveness, Synthesis.

2. **Money and the Monetary System:** Definition and Functions of Money, Measures of Money, the Banking system.
3. **The Demand for Money:** The Demand for Money, Transaction Demand, Speculative Demand, Precautionary Demand, Quantity Theory.
4. **Supply of Money:** the Role of the Central Bank, Central Bank and Commercial Banks' Interaction, Creation and Destruction of Money.
5. **Money and Inflation:** Demand Pull and Cost Push Inflation, The Phillips Curve, Short Run and Long Run Phillips Curve Expectations, Inflation of an Open Economy.
6. **Money and Output:** Money Neutrality and Flexible Prices, Rigidities, Rational Expectations and Policy Ineffectiveness.
7. **Costs of Inflation:** Anticipated and Unanticipated Inflation, Seigniorage, Inflation Tax and Welfare Costs.
8. **Monetary Policy and Tools of Monetary Policy:** Goals of Monetary Policy, Use of Targets: Intermediate and Operating Targets, Supply and Demand for Reserves, Reserve Requirements, Open Market Operations, Discount Window, Moral Suasion.
9. **The Role of Nominal Anchor:** Monetary Targeting, Exchange Rate Targeting, Inflation Targeting, Taylor's Rule.
10. **Transmission Mechanism of Monetary Policy:** Interest Rate Channels, Asset Price Channels, Credit View.
11. **Exchange Rate Regime:** Fixed, Flexible and Managed Float, Role of Central Bank in Fixed and

Managed Exchange Rate Regimes, Reserve Currencies, Exchange Market Intervention and the Money Supply, Sterilized and Unsterilized Intervention, Capital Flows.

12. **Effectiveness of Monetary Policy and Exchange Rate Regimes:** Trilemma: Fixed Rate, Flexible Rate, Capital Flows.
13. **Exchange Rate and Price Level:** The Law of One Price, Purchasing Power Parity, Evidence.
14. **Monetary Policy of Bangladesh.**

Texts

1. Lewis, M. K. and P. D. Mizen (2000). *Monetary Economics*, Oxford University Press.
2. Mishkin, F. S. (2000). *The Economics of Money Banking, and Financial Markets*, Addison -Wesley.
3. Walsh, C. E. (2010). *Monetary Theory and Policy*, 3rd Edition, the MIT Press.

ECON 401: Advanced Microeconomics I (Compulsory), Semester 7

Topics

1. **Utility maximization:** Consumer Preferences, Consumer Behavior, Indirect Utility Function, Roy's Identity, Money Metric Utility Function, Cobb-Douglas Utility Function, CES Utility Function.
2. **Choice:** Comparative Statics, the Slutsky Equation, the Cobb-Douglas Slutsky Equation, Properties of the Demand Function, Comparative Statics Using the First-Order Conditions, Duality in Consumption, Revealed Preference, Generalized Axiom of Revealed Preference, Sufficient Conditions for

- Maximization, Comparative Statics using Revealed Preference, the Discrete Version of the Slutsky Equation, Recoverability.
3. **Demand:** Homothetic Utility Functions, Aggregating Across Goods, Hicksian Separability, Aggregating Across Consumers, Inverse Demand Functions, Continuity of Demand Functions.
 4. **Uncertainty:** Expected Utility, Uniqueness of Expected Utility Function, Arrow-Pratt Measure of Risk Aversion, Global Risk Aversion, Jensen's Inequality, Relative Risk Aversion, Mean-Variance Utility, State Dependent Utility, Subjective Probability Theory.
 5. **Technology:** Specification of Technology, Activity Analysis, Monotonic Technologies, Convex Technologies, Technical Rate of Substitution, Elasticity of Substitution, Returns to Scale, Homogenous and Homothetic Technologies.
 6. **Profit Maximization:** Concept of Profit Maximization, Properties of Demand and Supply Functions, Comparative Statics using First-Order Conditions and Algebra, Recoverability.
 7. **Profit Function:** Properties of the Profit Function, Supply and Demand Functions from the Profit Function, the Envelope Theorem, Comparative Statics Using the Profit Function.
 8. **Cost Minimization:** Calculus Analysis of Cost Minimization, Second-Order Conditions, Cost Function for the Cobb-Douglas Technology, the CES Technology, Leontief Technology, Linear Technology, Conditional Factor Demand Functions, and Algebraic Approach to Cost Minimization.
 9. **Cost Function:** Long-run and Short-run Cost Curves, Factor Prices and Cost Functions, Envelope Theorem for Constrained Optimization.

Text

1. Varian, H. (1992). *Microeconomic Analysis*, 3rd Edition, W. W. Norton & Company, New York

References

2. Mas-Colell, A., M. Whinston and J. Green (1995). *Microeconomic Theory*, Oxford University Press.
3. Gravelle, H. and R. Reese (2004), *Microeconomics*, 3rd Edition, Prentice Hall Financial Times.
4. Jehle, G. and P. J. Reny (2011), *Advanced Microeconomic Theory*, 3rd Edition, Prentice Hall.
5. Nicholson, W. and C. Snyder (2012). *Microeconomic Theory: Basic Principles and Extensions*, 11th Edition, South-Western Cengage Learning.

ECON 402: Advanced Microeconomics II (Optional), Semester 8

Topics

1. **Monopoly:** Determination of Monopoly Output, Comparative Statics, Welfare and Output, Quality Choice, Price Discrimination: 1st Degree, Second Degree and 3rd Degree.
2. **Monopolistic Competition:** Determination of Monopolistically Competitive Industry Price and Output in the Short Run and in the Long Run, Product Differentiation.
3. **Game Theory:** Description of a Game, Economic Modeling of Strategic Choices, Solution Concepts, Nash Equilibrium, Mixed Strategies, Repeated Games, Refinements of Nash Equilibrium,

- Sequential Games, Sub-game Perfection, Games with Incomplete Information.
4. **Oligopoly:** Cournot Equilibrium, Bertrand Equilibrium, Quantity Leadership, Price Leadership, Conjectural Variations, Collusion, Repeated Oligopoly Games, Sequential Games, Limit Pricing.
 5. **Equilibrium Analysis:** the Core of an Exchange Economy, Convexity, Uniqueness of Equilibrium, General Equilibrium Dynamics, Tatonnement Processes, Nontatonnement Processes.
 6. **Welfare:** Compensation Criterion, Welfare Functions.
 7. **Information:** the Principle-Agent Problem, Full Information: Monopoly Solution, Full Information: Competitive Solution, Hidden Action: Monopoly Solution, Hidden Action: Competitive Solution, Hidden Information: Monopoly, Hidden Information: Competitive Solution, Adverse Selection, Lemons Market, Signaling: Educational Signaling.

Text

1. Varian, H. (1992). *Microeconomic Analysis*, 3rd Edition, W. W. Norton & Company, New York.
2. Nicholson, W. and C. Snyder (2012). *Microeconomic Theory: Basic Principles and Extensions*, 11th Edition, South-Western Cengage Learning.

Other References

3. Mas-Colell, A., M. Whinston and J. Green (1995). *Microeconomic Theory*, Oxford University Press.
4. Gravelle, H. and R. Reese (2004), *Microeconomics*, 3rd Edition, Prentice Hall Financial Times.
5. Jehle, G. and P. J. Reny (2011), *Advanced Microeconomic Theory*, 3rd Edition, Prentice Hall.

ECON 403: Advanced Macroeconomics I (Compulsory), Semester 7

Topics

- 1. Macroeconomy in the Long Run:** Solow Growth Model, The Accumulation of Capital, Golden Rule of Capital, Population Growth, Technological Progress, Slowdown of Productivity Growth, Unemployment, Efficiency-Wage Model, Shapiro-Stiglitz Model, Implicit Contracts, Insider-Outsider Model, Hysteresis, Search and Matching Models, Large vs. Small Open Economies, International Flows of Capital and Goods, Saving and Investment, Exchange Rates.
- 2. Macroeconomy in the Short Run:** Introduction to Economic Fluctuations, Time Horizons, Aggregate Demand and Supply, Stabilization, Keynesian Theories of Fluctuations, Aggregate Demand in IS-LM Framework, Explaining Fluctuations with IS-LM, the Great Depression, Aggregate Demand in Open Economy, Mundell-Fleming Model, Small Open Economy under Floating Exchange Rates and Fixed Exchange Rates, Rational Exchange Rate Expectations, Models of Aggregate Supply, Sticky-Wage Model, Worker-Misperception Model, Imperfect-Information Model, Sticky-Price model, Phillips Curve.
- 3. Micro Foundation of Macroeconomic Theories:** Keynesian Consumption Function, Intertemporal Choice, Life-Cycle Hypothesis, Permanent-Income Hypothesis, Rational Expectations and Random Walk Consumption, Consumption and Risky Assets.

Text

1. Romer, D. (2001). *Advanced Macroeconomics*, 3rd Edition, McGraw-Hill Companies.

Other References

2. JEP (1988). Symposium: *The Slowdown in Productivity Growth*, The Journal of Economic Perspectives, 2 (Fall 1988), pp.3-98.
3. Prakash, L. and P. Swagel (2001). *Sources of Inflation in Developing Countries*, IMF Working Paper, WP/01/198, International Monetary Fund.
4. World Bank and Asian Development Bank. (2003). *Bangladesh: Public Expenditure Review*, Dhaka.
5. Osmani, S.R., et. al. (2003). *The Macroeconomics of Poverty Reduction: The Case Study of Bangladesh*, United Nations Development Programme, The Asia-Pacific Regional Programme on Macroeconomics of Poverty Reduction.

ECON 404: Advanced Macroeconomics II (Optional), Semester 8

Topics

1. **Micro Foundation of Macroeconomic Theories (Continued):** Investment, Business Fixed Investment, Investment with Adjustment Costs, Tobin's q, Investment with Uncertainty, Financial Market Imperfections
2. **Macroeconomic Policies:** Fiscal Policy, Government Debt and Budget Deficit, Traditional vs. Ricardian View, Fiscal Sustainability, Fiscal Deficit and Inflation, Top-Down Budgeting, Inflation and Monetary Policy, Inflation, Money Growth and Interest Rates, Monetary Policy and Term Structure of Interest Rates, Dynamic Inconsistency of Low-Inflation Monetary Policy, Seignorage and Inflation, Inflation in Developing Countries, Macroeconomic Policy Debates, Should

Policy be Active or Passive, Should Policy be Conducted by Rule or by Discretion, Making Policy in an Uncertain World, Inflation Targeting, Central Bank and Financial Stability.

3. **Macroeconomics of Bangladesh:** Public Investment, Public Expenditure, Macroeconomic Effects of Fiscal Policy, Macroeconomics of Poverty Reduction, Macroeconomic Effects of Removing Tariffs, Review and Exercise.

Text

1. Romer, D. (2001). *Advanced Macroeconomics*, 3rd Edition, McGraw-Hill Companies.

Other References

2. JEP (1988). *Symposium: The Slowdown in Productivity Growth*, The Journal of Economic Perspectives, 2 (Fall 1988), pp.3-98.
3. Prakash, L. and P. Swagel (2001). *Sources of Inflation in Developing Countries*, IMF Working Paper, WP/01/198, International Monetary Fund.
4. World Bank and Asian Development Bank. (2003). *Bangladesh: Public Expenditure Review*, Dhaka.
5. Osmani, S.R., et. al. (2003). *The Macroeconomics of Poverty Reduction: The Case Study of Bangladesh*, United Nations Development Programme, The Asia-Pacific Regional Programme on Macroeconomics of Poverty Reduction.

ECON 405: Advanced Econometrics I (Optional), Semester 7

Topics (Analysis of Cross-Section Data and Nonlinear Econometrics)

1. **Large Sample Properties of OLS:** Asymptotic Properties– Consistency, Asymptotic Normality, Asymptotic Efficiency.
2. **Maximum Likelihood Estimation:** the Likelihood Function and Identification of Parameters, Properties of MLE Estimators, Asymptotically Equivalent Test Procedures.
3. **Instrumental Variables:** Motivation, Multiple Instruments and 2SLS, IV and Measurement Errors, Identification Problem.
4. **Systems of Regression Equations:** Seemingly Unrelated Regression (SUR) Model – Generalized Least Squares (GLS), Feasible Generalized Least Squares (FGLS).
5. **Simultaneous Equation Models:** Endogeneity and Causality, Identification, Methods of Estimation.
6. **Nonlinear Specifications:** Limited Dependent Variables and Maximum Likelihood Estimation, Binary Choice, Logit, Probit, Tobit Models, Sample Selection Models.

Texts

1. Wooldridge, J. M. (2012). *Introductory Econometrics*, 5th Edition, Cengage Learning.

Additional References

2. Spanos, A. (2003). *Probability Theory and Statistical Inference: Econometric Modeling with Observational Data*, Cambridge University Press.
3. Greene, W. H. (2003). *Econometric Analysis*, 5th Edition, Prentice Hall.
4. Wooldridge, J. M. (2002). *Econometric Analysis of Cross-Section and Panel Data*, MIT.
5. Cameron, A. C. and P. K. Trivedi (2010). *Microeconometrics using STATA*, Revised Edition, Stata Press.

ECON 407: Industrial Economics (Optional), Semester 7

Topics

- 1. Introduction:** Introduction to Industrial Economics, Structure, Conduct and Performance.
- 2. Type of Business Organization:** Public vs. Private Sector Ownership. Types of Public and Private Sector Ownership.
- 3. Firm and Industry:** Plant, Firm and Industry and their Interrelationship, Objectives of a Firm, Objective Conflicts, Stigler's Hypothesis of Survivor's Technique, Cost Curve of a Firm.
- 4. Market Structure:** Characteristics of Markets, Monopoly and Price Discrimination, Price Discrimination and the Existence of the Industry.
- 5. Barriers to Entry: Condition to Entry:** (i) Absolute Cost Advantage, (ii) Economies of Scale, (iii) Product Differentiation, (iv) Limit pricing; Condition to Entry.
- 6. Industrial Concentration: Types of Concentration:** (i) Average Concentration, (ii) Market Concentration; Measurement of Market Concentration: (i) Concentration Curve, (ii) Concentration Ratio, (iii) Lorenz Curve, (iv) Hirschman-Herfindahl Index, (v) Lerner Index.
- 7. Integration:** Concept and Types of Integration: Vertical, Horizontal and Merger -(i) Merger and Economies of Scale, (ii) Vertical and Conglomerate Merger; Stigler's Life-Cycle Hypothesis and Vertical Integration, Vertical Integration and Monopoly, Vertical Integration and Barriers to Entry, Merger and Barriers to Entry.
- 8. Diversification:** Typology of Diversification - (i) Lateral Diversification: Convergent Lateral Diversification, Divergent Lateral Diversification,

- (ii) Diagonal Diversification, (iii) Conglomerate Diversification; Measurement of Diversification - (i) Diversification Curve, (ii) Specialization Ratio, (iii) Berry's Index, (iv) Herfindahl Index; Objectives of Diversification, Diversification and Competition.
9. **Location of Industry:** Significance of the Location of Industry, Advantage and Disadvantage, Factors of Location of Industry - (i) Historical, (ii) Natural, (iii) Economic, (iv) Political, (v) Others; A Weber's Theory of Least Transportation Cost, Location of Industry and Regional Development: Agglomeration and Deglomeration Factors, Measurement of the Location Shift Analysis, Location Quotient, Shift Analysis, Strategy of a Balanced Industrial Development, Growth Pole Theory of F. Perroux and Regional Industrial Development.

References

1. Needham, D. (1970). *Economic Analysis and Industrial Structure*, Holt, Rinehart & Winston of Canada Ltd.
2. Clarke, R. (1991). *Industrial Economics*, Wiley-Blackwell.
3. Shepherd, W. J. and J. M. Shepherd (2003). *The Economics of Industrial Organization*, 5th Edition, Waveland Press.
4. Carlton, D. W. and J. M. Perloff (2004). *Modern Industrial Organization*, 4th Edition, Prentice Hall.

ECON 408: Advanced Econometrics II (Optional), Semester 8

Topics (Time Series and Panel Data)

1. **Introduction to Time Series:** Introduction, Stochastic Processes, Stationarity, Models for Trends and Detrending.

2. **Stationary Time Series Models:** ARMA Models, ACF, PACF, Lag Operators, Linear Difference Equations.
3. **Multivariate Models: Vector Autoregression;** Impulse Response Functions, Variance Decomposition, Identification, Exogeneity, Causality.
4. **Time Series Models for Integrated Processes:** Regressions with Integrated Regressors, Testing for Unit Roots.
5. **Stochastic Processes with Unit Roots:** Multiple Time Series with Unit Roots, Cointegration, Estimation and Cointegrating Vectors.
6. **Models for Panel Data:** Fixed Effects, Within and Between Group Estimators, Random Effects.

References

1. Wooldridge, J.M. (2002). *Econometric Analysis of Cross-Section and Panel Data*, MIT
2. Greene, W. H. (2003). *Econometric Analysis*, 5th Edition, Prentice Hall.
3. Hamilton, J. D. (2000). *Time Series Analysis*, Princeton University Press
4. Cameron, A. C. and P. K. Trivedi (2005). *Microeconometrics: Methods and Applications*, Cambridge University Press.
5. Wooldridge, J. M. (2012). *Introductory Econometrics*, 5th Edition, Cengage Learning.

ECON 409: Environmental Economics (Optional), Semester 7

Topics

1. **Analytical Foundation of Environmental and Resource Scarcity:** Defining Environmental and

- Resource Economics, the Concept of Resources and Resource Scarcity: The Neoclassical Economic Perspective.
2. **The Concept of Natural Resources:** An Ecological Perspective: Ecology: The Economics of Nature, the Ecosystem: Structure and Function, Ecodynamics: Succession, Equilibrium, Stability, Resilience, Complexity, the Laws of Matter and Energy, The Basic Lessons of Ecology.
 3. **Natural Resource Scarcity and the Limits to Economic Growth:** the Malthusian Growth Doctrine, the Neoclassical Growth Paradigm, the Ecological Economics School Perspective, and the Sustainable Economic Development.
 4. **The Origins of the Sustainability Problem:** Scoping and Defining Sustainability and Intergenerational Equity, Economic Growth with Depletable Resources and/or Pollution, Measurement of Sustainability and Income: Theory and Empirics, Environmental and Sustainability Policies, National Sustainability Policies in Practice.
 5. **Ethics and Environment:** Ethical Foundations for Environmental Economics, Principles of Discounting.
 6. **Fundamentals of the Economics of Environmental Resources:** the Economic Process and the Assimilative Capacity of the Natural Environment, Common Property Resources, Externalities and Market Failure, Internalizing the Externalities.
 7. **The Economic Theory of Pollution and Its Control:** the Determinants of the Optimal Level of Pollution and their Implications, Alternative Pollution Control Policy Measures and their implications for growth and equity.
 8. **Materials Policy:** Materials, and Solid Waste: Solid Waste and Waste Disposal, Waste and Recycling, a Comprehensive Materials Policy.

9. **Valuing the Environment:** Environmental Demand Theory, Measuring the Costs of Provision, Total Economic Value, Benefits of Improving an Environmental Amenity, Methods: Productivity Loss, Defensive, Mitigating, Travel Cost, Hedonic Pricing and Contingent Valuation, Valuation and Policy Relevance.

✓ 10. **Economics of Climate Change:** Kyoto Protocol, Compensation, Discounting and Uncertainty, Cost Assessment, Pricing (Taxes), Tradable Allowances (Cap and Trade), Distributional Considerations, Emissions Instruments vs. Technology Instruments, Flexibility of Policies, Sequestration, International Policy Initiatives and Coordination.

Readings

1. Field, B. C. and Field, M. K. (2006). *Environmental Economics*. McGraw-Hill/Irwin.
2. Kolstad, C. D. (2010). *Environmental Economics*. Oxford University Press.
3. Pearce, D. & Turner, R.K. (1990). *Economics of Natural Resources and the Environment*. Harvester Wheatsheaf.
4. Perman, R., et. al. (2011). *Natural Resource and Environmental Economics*, 4th Edition, Addison Wesley.
5. Tietenberg, T. and L. Lewis (2012). *Environmental & Natural Resource Economics*, 9th Edition, Addison Wesley.

ECON 410: Natural Resource and Energy Economics (Optional), Semester 8

Topics

1. **Energy Production and the Environment:** Historical Development of Energy Policy, the

Environmental Costs of Energy Production, Portfolio Theory and Energy Choices, Conventional Energy Alternatives, Alternative Energy Sources.

2. **The Use of Energy and the Environment:** Energy Policy and the Environment, Energy Use and Environmental Taxes, the Macroeconomic Impact of Fuel Taxes, Transition Fuels and the Future of Fuels, Energy and the Third World.
3. **Efficient and Optimal Use of Non-Renewable Resources:** the Economics of Mineral Extraction, Market Failures in the Extraction of Mineral Resources, Optimal Extraction Path, Profit-Maximization for a Mine, The Hotelling Model for a Perfectly Competitive Mining Industry, Monopoly in Mineral Extraction -- Price and Output Determination for a Mineral Industry in Monopoly, A Comprehensive Mineral Policy.
4. **Efficient and Optimal Use of Renewable Resources:** Fisheries, Water and Forests, Optimal Harvesting Schedule: Basic Model, Socially Optimal Harvesting, Public Policy towards Renewable Resources.
5. **Biodiversity and Habitat Preservation:** Natural Extinctions, Anthropogenic Causes of Species Extinction, Loss of Habitat, Competition from Nonnative Species, Open-Access Harvesting, Costs of Losses of Biodiversity, Policies for Maintaining Biodiversity and Protecting Habitat, Policies to Reduce Loss of Habitat, Problems with Nonnative Species and Open-Access Exploitation.

Readings

1. Field, B. C. and M. K. Field (2006). *Environmental Economics*. McGraw-Hill/Irwin.
2. Kolstad, C. D. (2010). *Environmental Economics*. Oxford University Press.

3. Pearce, D. & Turner, R.K. (1990). *Economics of Natural Resources and the Environment*. Harvester Wheatsheaf.
4. Perman, R., et. al. (2011). *Natural Resource and Environmental Economics*, 4th Edition, Addison Wesley.
5. Tietenberg, T. and L. Lewis (2012). *Environmental & Natural Resource Economics*, 9th Edition, Addison Wesley.

ECON 412: Research Methodology (Optional), Semester 7

Topics

1. **The Steps of Conducting a Research:** Formulating a Research Problem; Types of Research Questions; Conceptualizing a Research Design: Identifying Variables, Constructing Hypotheses, Writing a Research Proposal, Conducting a Study: Collection of Data, Structure of Model, Analyzing Data/Solving the Model, Writing a Research Report.
2. **Quantitative and Qualitative Methods of Conducting a Research:** Key Features of Each of the Methods, Qualitative Research Methods: Focus Group Discussion, Direct Observation, In-Depth Interviews, Quantitative Research Methods: Generation of Models, Theories and Hypotheses, Use of Statistics.
3. **Defining a Research Question:** Conceptualizing; Problem Formulation; Feasibility of Study; Literature Review.
4. **Surveys in Economic Research:** Key Issues of Conducting a Survey, Sampling Design (Probability

Sampling and Non-probability Sampling), and Questionnaire Design.

5. **Measurement:** Levels of Measurement; Reliability of Measurement; Survey Methods; Qualitative Measures; Unobtrusive Measures; Complex Survey Design and Related Issues; Instrumental Variables.
6. **Research Design:** Establishing Cause and Effect; Randomized Experiment; Quasi-experiment; Non-experiment; Matching Methods; Pre-Post Designs; Regression Discontinuity Design.
7. **Data Analysis:** Data Preparation; Descriptive Statistics; Inferential Statistics; Bootstrapping; Regression toward the Mean; Quantile Regression; Non-Parametric Regression.
8. **Longitudinal Research:** Trend Studies; Cohort Studies; Panel Studies; Difference-in-Differences.

References

1. Ethridge, D. (2004). *Research Methodology in Applied Economics*. 2nd Edition. Blackwell Publishing.
2. Kumar, R. (2005). *Research Methodology: A Step by Step Guide for Beginners*, 2nd Edition, Pearson.
3. Angrist, J. and J. Pischke (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.
4. Khandker, S. R., et. al. (2010). *Handbook on Impact Evaluation: Quantitative Methods and Practices*, the World Bank, Washington D.C.
5. Berg, B. L. and H. Lune (2011). *Qualitative Research Methods for the Social Sciences*, 8th Edition. Pearson, Boston, MA.

ECON 413: History of Economic Thought (Optional), Semester 8

Topics

- 1. Classical Political Economy:** The Origins of Wealth: Adam Smith, Ricardo and Rent, Malthus' Law of Population.
- 2. Marx's Economics:** Marx: The Labor Theory of Value, The Economics of Class and Exploitation, Wealth and Growth.
- 3. The Development of the Neoclassical theory, 1870-1930:** Utilitarianism and the Economics of Utility: Bentham. Scarcity and Allocation: The Neo-Classical Position: Marginal Productivity and Income Distribution: Clark.
- 4. Other Views: Institutionalists and Feminists:** Thorstein Veblen on Conspicuous Consumption. Thorstein Veblen's Critique of Marginal Utility Analysis. Early Feminist Economics: Charlotte Perkins Gilman.
- 5. Transformations of Neoclassical Economics, 1930-1980:** Gary Becker on Wage Inequality: Human Capital and Discrimination.
- 6. Challengers of Neoclassical Economics and of Capitalism: Neo-marxists, Feminists, and Marxist-feminists:** Monopoly Capital: Baran and Sweezy. Marxist-Feminist Economics. Capitalism, Socialism, and Democracy: The Radical View.
- 7. Twentieth-Century Debates on Race, Development, and the Environment:** Racism, Colonialism, and the Development of Underdevelopment. How Are Capitalist Development, Racial and International Inequality Connected?
- 8. Development Theory:** Early Mainstream Writing:

Rostow. Neo-Classical Theories of Economics and the Environment: Coase and Externality. Twentieth-Century Malthusians vs. Coase and the Neo-Classicists. Sen's Critique of Rational Economic Man.

References

1. Blaug, M. (1997). *Economic Theory in Retrospect*, 5th Edition, Cambridge University Press.
2. Negishi, T. (1989). *History of Economic Theory*, North Holland.
3. Ekelund, R. B. and R. F. Hebert (2007). *A History of Economic Theory and Method*, Waveland Press, Inc.
4. Schumpeter, J. (1994). *A History of Economic Analysis*, Oxford University Press.
5. Snowdon, B., et. al. (1994). *A Modern Guide to Macroeconomics: An Introduction to Competing Schools of Thought*, Edward Elgar Publishers.

ECON 414: Economic Organization of Family and Firm (Optional), Semester 8

Topics

Economics of Family

1. Why Family? Formation of Family, Appropriation of Rent from Public Good and Risk Sharing within Family.
2. Fertility and Demand for Children, Quality and Quantity Trade-Off, Demographic Transition with Growth & Development Implications.
3. Basic Theory of Time Allocation within Household and Introduction to Household Production Function, Treating Household as a Firm and its Interactions

with Market Incentives and Non-Market Motivations.

4. Assortative Matching in Marriage Market.
5. Bargaining and Intra-Household Allocation of Resources.
6. Implications of Altruism and Intergenerational Earning Dynamics, Human Capital Investment in Children.

Economics of Firm

7. Preamble: Introduction to Payoffs and Interdependent Actions.
8. Why Firm? Coasian Benchmark (with Contractible Actions and Efficient Bargaining).
9. Property Right Theories of Firm.
10. Transaction Cost Economics of Firm.
11. Model of Specialization and Market Size.
12. Introduction to Agency Problem: Performance and Pay, Individual Multi-tasking, Agency Problem in Teams.
13. On the Job Training, Human Capital Formation.
14. Employment Contracts as Relationships: Network within Firms, Tournaments & Super-star Rent, Relational Contract.

References

1. Becker, G. S. (1993). *A Treatise on the Family: Enlarged Edition*. Harvard University Press.
2. Browning, M., Chiappori, P. A., and Y. Weiss (2011). *Family Economics*. Unpublished Manuscript.
3. Ermisch, J. F. (2003). *An Economic Analysis of the Family*. Princeton University Press.
4. Gibbons, R., & J. Roberts (2012). *The Handbook of Organizational Economics*. Princeton University Press.

5. Kroszner, R. S. & L. Putterman (2009). *The Economic Nature of the Firm: A Reader*. Cambridge University Press.

ECON 415: Behavioral Economics (Optional), Semester 8

Topics

1. **Allais Paradox and Limits in Decision-Making.** The Concept of Rationality. Axiomatic Preferences and Evidence of Contradictions in Experimental Settings. Procedural Rationality.
2. **Prospect Theory and Departure from Expected Utility.** Endowment Effects. Framing Issues. Reference Dependent Preferences.
3. **Heuristics and Biases in Judgment and Quasi-Bayesian Model.**
4. **Mis-prediction of Future Outcomes:** Principles and Evidence, Modeling and Implications.
5. **Present Biased Preferences,** Hyperbolic Discounting, Procrastination, Self-control and Temptation.
6. **Social Preferences:** Self-image, Ego, Reciprocity, and Fairness in Distribution.
7. **Persistence of Habit** and Implications for Efficient Behavior.
8. An Introduction to Doing Experimental Economics in Both Control (i.e. Lab) and Field Settings.

References

1. Camerer, C. F., et. al., eds. (2004). *Advances in Behavioral Economics*, Princeton University Press.
2. Kahneman, D., and A. Tversky, eds. (2000). *Choices, Values and Frames*, Cambridge University Press.

3. Shleifer, A. (2000). *Inefficient Capital Markets: An Introduction to Behavioral Finance*. Oxford University Press.
4. Thaler, R. (1993). *Advances in Behavioral Finance*, Russell Sage Foundation.

ECON 416: International Business (Optional), Semester 7

Topics

1. International Capital Flows--MNCs, FDI and Technology Transfer.
2. Theories of the Firm.
3. Boundaries of the Firm--Transactions Cost Paradigm and the Knowledge Based View.
4. Innovation, Firm Boundaries, and the Division of Innovative Labor.
5. Overview of International Business Theory.
6. Debate on Globalization vs. Regionalization.
7. Born Globals and Emerging Giants.
8. Liabilities of Foreignness.
9. Regional Clusters and Multinationals.
10. The Hunt for FDI Spillovers.
11. International Joint Ventures.
12. Offshoring and Nearshoring.
13. Networks, Power and Culture.

References

1. Williamson, O. (1987). *The Economic Institutions of Capitalism*. New York: Free Press.
2. Chandler, A. D. (1990). *Scale and Scope: the Dynamics of Industrial Capitalism*. Belknap Press, Harvard University.
3. Chandler, A. D. (1977). *The Visible Hand: the Managerial Revolution in American Business*. Cambridge, Mass. Belknap Press.

4. Arora, A., et. al. (2001). *Markets for Technology: the Economics of Innovation and Corporate Strategy*. The MIT Press, Cambridge, Mass., London.

ECON 418: Urban Economics (Optional), Semester 8

Topics

1. An Introduction of Rapid Expansion of (Mega) Cities in the “Global South”.
2. Background of Urbanization (Part 1): Density and Distance.
3. Background of Urbanization (Part 2): Scale Economies and Agglomeration.
4. Background of Urbanization (Part 3): Factor Mobility and Migration.
5. Background of Urbanization (Part 4): Transport Costs and Specialization.
6. Spatial Relations Within and Across City Boundaries.
7. Urban Poverty, Livelihoods and Social Exclusion.
8. Urban Housing and Slums.
9. Urban Environmental sustainability.
10. Urban Local Governments and the Issue of Governance.
11. Urban Work and Employment.
12. Globalization and Expansion of Megacities in the “Global South”.
13. Urban Policies and Politics.

References

1. World Bank (2009). *Reshaping Economic Geography*, World Development Report (2009), The World Bank, Washington D.C.
2. Potter, R. B. and S. Lloyd-Evans (1998). *The City in the Developing World*, Prentice Hall, Harlow.

3. Benton-Short, et. al. (2007). *Cities and Nature*, Routledge.
4. Todaro, M. and S. Smith (2011). *Economic Development*, 11th Edition, Pearson Education, Addison Wesley.

ECON 419: Comprehensive and Viva Voce (Compulsory), Semester 8

Applicants for the BSS (Hons.) degree in Economics must appear for a 50-marks comprehensive examination and a 50-marks viva voce examination at the end of their 8th Semester. Equivalent grades will be assigned in the calculation of the students' CGPA calculations.

ECON 420: Thesis (Optional), Semester 8 [for selected students only]

An applicant for the BSS (Hons.) degree in Economics can do a thesis instead of a 4-credit hour regular course at the 8th semester. Only the students who have secured CGPA of 3.5 up to the 6th semester will be eligible for the thesis option. The eligible and interested student will have to apply to the Chairperson of Economics Department before the 8th Semester class officially begins (along with a supervisor's recommendation, taking responsibility for the proposed thesis). The thesis paper has to be submitted to the Chairman before the viva exam date of the 8th Semester. The thesis students' viva exam will include defense of the thesis he/she has submitted to the Chairman.

Only a full-time faculty of the Department (Assistant Professor and above) is eligible for being the supervisor of the thesis. The supervisor will only submit an

assessment report along with the student's submitted thesis to the Chairperson, Department of Economics. The supervisor will not be involved in grading of the thesis. The Chairperson, Department of Economics will assign two faculties (one internal, but not the supervisor; and one external, but not outside University of Dhaka) to blindly examine the thesis and grade it (out of 100 marks). An average of the two marks (and in cases of major discrepancy, mark from the third examiner) will decide the grade assigned to the thesis.