



**DEPARTMENT OF ECONOMICS
NORTH SOUTH UNIVERSITY
MS IN ECONOMICS**

The Department of Economics introduced Master of Science (MS) in Economics program in 1994 to provide high level graduate training to students who want to study economics after completion of a four year undergraduate program. The MS in Economics program is a 30-credit program reflecting current programs in leading US universities. This program has been accredited by ACBSP, USA in November 2015. It is the first US accredited graduate program in economics in Bangladesh. Accreditation is a recognition of global standards maintained by the department in terms of faculty quality, curriculum, student assessment and other relevant aspects of quality.

This program provides a solid background in advanced economics and gives the students the ability to independently use economic theory and empirical methods to analyze economic problems. It primarily aims at providing a solid preparation for a career as a professional economist in government, international organizations or business, but it also serves as an excellent preparatory degree for doctoral programs abroad.

The program aims to provide balanced and rigorous training in modern theories and techniques in economics at the graduate level.

By the end of the program, students are expected to be able to read and understand the leading economics journals, develop economic models of their own from which to derive original results and offer a critique of underlying theories.

Students are introduced to key concepts, ideas, tools and techniques via core and elective courses, and have the opportunity to combine and practice their skills in writing a research paper or a thesis. A thesis is equivalent to 6 credits. Since the research paper is worth 3 credits, students require an additional course to fulfill the 30-credit requirement if they decide to complete MS in Economics without a thesis.

Students with a four-year bachelor's degree or a three-year Honors degree in economics or in a related discipline from any recognized university are eligible to apply for admission.

Graduate Student Advisor

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A. Core Courses (12 Credits)

Course ID	Course Title	Credits
ECO 501	Mathematical Economics	3
ECO 502	Econometric Method	3
ECO 503	Microeconomic Theory	3
ECO 504	Macroeconomic Theory	3

B. Elective Courses (12 Credits)

Course ID	Course Title	Credits
ECO 613	International Trade Theory and Policy	3
ECO 614	International Finance	3
ECO 621	Financial Economics	3
ECO 622	Banking and Financial Institutions	3
ECO 631	Development Economics	3
ECO 642	Economics of Natural Resources	3
ECO 650	Environmental Economics	3
ECO 651	Panel and Limited Dependent Variable	3
ECO 653	Time Series Analysis and Forecasting	3
ECO 682	Contemporary Economic Ideas	3
ECO 684	Monetary Economics	3
ECO 686	Game Theory	3
ECO 687	Agricultural Economics	3
ECO 689/ DEV 567	Project Analysis and Evaluation	3
ECO 692	Special Topics in Economics	3

The elective courses are offered on the basis of availability of experts and demand of the students for such courses.

ECO 682 is compulsory for students with no coursework background in economic thought.

A student may be allowed to take not more than one course from the following: DEV 571, DEV 572, DEV 573, DEV 574, DEV 575, DEV 576, DEV 577, FIN 637, FIN 642, FIN 643,

FIN 644, FIN 646, FIN 647, FIN 650, REM 602 or other DEV courses approved by the department.

C. Research Courses (6 Credits)

Course ID	Course Title	Credits
ECO 695	Research Based Term Paper	3
ECO 583 or ECO 6XX	Advanced Methods in Social Science Research	3
OR		
ECO 699	Thesis	6

A student who has taken a similar course at undergraduate level may be exempted from ECO 583 and allowed to take another 600 level ECO course instead.

FOUNDATION COURSES (9 Credits) Minimum CGPA requirement 2.75

A student with insufficient coursework in Economics at undergraduate level may be required to do up to 9 credits of the following foundation courses depending on his/her background:

Course ID	Course Title	Credits
ECO 511	Microeconomic Analysis	3
ECO 512	Macroeconomic Analysis	3
ECO 514	Quantitative Techniques for Economic Analysis	3

Description of Courses

Core Courses

ECO 501: Mathematical Economics

This course addresses the applications of calculus and linear algebra in Economics. The discussion will include mathematical concepts like optimization, linear algebra, matrix, comparative statics in utility and/or profit maximization, input output modeling, envelope theorem, and duality. Topics also include optimization with inequality constraints, production functions, consumer demand theory, competitive market theory, behavior under uncertainty, risk aversion, intertemporal choices, general equilibrium, and welfare theorems. **(Prerequisite: ECO 245 and ECO 301 or equivalents, 3 credits).**

Books:

- 1) Structure of Economics: A Mathematical Analysis, Eugene Silberberg, McGraw-Hill Publishing Company, 2001
- 2) Mathematics for Economics, Carl P. Simon and Lawrence Blume, W.W. Norton & Company, 2009

Supplementary Text:

- 1) Fundamental Methods of Mathematical Economics, Alpha C. Chiang

ECO 502: Econometric Method

This is the first graduate course in Econometrics. The first half of the course is mostly theoretical. The later segment of the course is applied, in the sense that it deals with real data sets and real problems. Computer work is an integral part of the course. An important way in which econometrics differs from statistics is that econometrics focuses on links between economic theory and statistical analysis. In particular, this course will emphasize the kinds of inferences that can and cannot be drawn from statistical analysis, particularly from cross-section data. Understanding when to use particular methods and what conclusions you can draw is as important as understanding how to do the analysis. Students are required to use EViews, STATA or SAS to solve data related assignments. Topics include: review of basics of multiple linear regression and matrix algebra, classical linear regression model, heteroskedasticity, endogeneity and instrumental variables estimation, simultaneous equations system, selection issues and probit models, and introduction to panel data regression. **(Prerequisite: ECO 514 or ECO 372 or equivalents, 3 credits).**

Books:

- 1) Econometrics, Fumio Hayashi, Princeton University Press, 1st edition, 2000

Supplementary Text:

- 1) Econometric Analysis of Cross Section and Panel Data, Jeffrey M Wooldridge, MIT Press, 1st edition, 2002

ECO 503: Microeconomic Theory

The course is about analyzing problems in microeconomic theory at the beginning graduate level. Students successfully completing the course are able to comfortably work standard problems in microeconomic theory using calculus based techniques and methods. Topics to be covered may include the theory of the consumer, theory of the firm, market equilibrium, general equilibrium, welfare measurement, market structures, risk and uncertainty and information economics. **(Prerequisite: ECO 511 and ECO 501/ECO 301 or equivalents, 3 credits).**

Books:

- 1) Microeconomic Analysis, Hall Varian, W. W. Norton and Company, 3rd edition, 1992
- 2) Advanced Microeconomic Theory, Geoffrey A Jehle and P.J. Reny (Alternative for few chapters), Financial Times/Prentice Hall, 3rd edition

Supplementary Text:

- 1) Microeconomics with Calculus, B. R. Binger and E. Hoffman, Addison Wesley, 2nd edition, 1998

ECO 504: Macroeconomic Theory

This is a graduate level course on macroeconomics providing an advanced treatment of macroeconomic theory and policy. In this course, students develop analytical skills in solving and constructing macroeconomic models. The advanced topics covered include topics such as: the Solow growth model, infinite horizon and overlapping generations models, endogenous growth model, the real business cycle model, unemployment and inflation. The course entails extensive use of calculus, algebra and graphs. **(Prerequisite: ECO 512 or ECO 501/ECO 304 or equivalents, 3 credits).**

Books:

1) Romer, David. 2019. *Advanced Macroeconomics*. 5th Edition. McGraw-Hill Irwin.

Supplementary Text:

- 1) Introduction to Economic Growth, Charles I. Jones, W. W. Norton & Company, Inc., 1998
- 2) Economic Growth, David N. Weil, Pearson - International Edition, 3rd edition, 2013
- 3) Macroeconomics, Stephen D. Williamson, Pearson, 5th edition, 2014

Elective Courses

ECO 613: International Trade Theory and Policy

This course offers advanced treatment of trade models as well as incorporates new developments in international trade theory. Topics include preliminaries of two sector models, advanced treatment of Heckscher-Ohlin-Samuelson model and HOV, many goods and factors, trade in intermediate inputs and wages, increasing returns and Gravity Equations, gains from trade and regional agreements. This course also applies the theory of international economics to the problems of policy design such as import tariffs and dumping, import quotas and export subsidies, political economy of trade policy, trade and endogenous growth, multinationals and organization of the firm, trade and environment, trade and labor standard, and WTO. **(Prerequisite: ECO 328 or equivalents, 3 credits).**

Books:

- 1) International Trade Theory and Evidence, James R. Markusen, James R. Melvin, William H. Kaempfer and Keith E. Maskus, McGraw-Hill, 1995
- 2) Advanced Trade Theory, Robert C. Feenstra, Princeton: Princeton University Press, 2004

Supplementary Text:

- 1) International Trade Theory and Policy, Gandolfo and Giancarlo, Springer, 2nd edition, 2001
- 2) Handbook on International Trade Policy, William A. Kerr and James D. Gaisford, Edward Elgar, 2007
- 3) Handbook of Trade Policy for Development, Arvid Lukauskas, Robert M. Stern and Gianni Zanini (eds.) Oxford University Press, 2013
- 4) A Practical Guide to Trade Policy Analysis, WTO-UN, 2006

ECO 614: International Finance

This course offers an advanced treatment of the financial and macro aspects of international economics. Topics include : various concepts and measurements of exchange rates, traditional and modern theories of exchange rate determination, expectations and exchange rate dynamics, effectiveness of devaluation, monetary approach to balance of payments, Krugman's model of balance of payments crisis, hedging exchange rate risk - futures, options and currency swaps, multinational corporations and foreign direct investment, international financial markets, role of international financial institutions, financial crisis, and objective analysis of recent issues in international financial system, common currency etc. **(Prerequisite: ECO 204, ECO 328 or equivalents, 3 credits).**

Books:

1) Lecture Notes, Schmitt-Grohe, Uribe and Woodford International, 2016

Supplementary Text:

- 1) Foundation of International Macroeconomics, Maurice Obstfeld and Kenneth S. Rogoff, MIT Press, 1966
- 2) International Macroeconomics and Finance: Theory and Empirical Methods, Nelson C. Mark, Blackwell Publishers, 2001

ECO 621: Financial Economics

This course addresses the basic and some of the advanced issues of financial economics ranging from discussions on basic concepts of financial economics like expected utility theorem, choice under uncertainty, pure exchange economies, preference representation and risk aversion and also the characteristics, valuation techniques and macroeconomic implications of basic financial assets, like bonds, equities and different types of financial derivatives. Other topics include risk, arbitrage, law of one price, Capital Asset Pricing Model (CAPM), financial markets, emerging financial markets, efficient market hypothesis, explaining anomalies in theory, behavioral finance, and real options. **(Prerequisite: ECO 204 or equivalents, 3 credits).**

Books:

- 1) Financial Theory and Corporate Policy, Thomas E. Copeland, J. Fred Weston and Kuldeep Shastri, Pearson New International edition, 2013
- 2) Principles of Financial Economics, Stephen F. LeRoy and Jan Werner, Cambridge University Press, 2nd edition, 2014

ECO 622: Banking and Financial Institutions

This course addresses the basic aspects of financial institutions. Topics include discussions on all standard financial institutions with an emphasis on commercial banks. Discussion includes mutual funds, insurance companies, leasing firms, credit unions and nonprofits, investment banks, hedge funds, commercial bank operation, balance sheet and off-balance sheet activities, bank performance, agency problem and compensation package, bank regulation, interaction with central banks, lending and deposit operation, risk management and hedging. **(3 credits).**

Books:

- 1) Introduction to Banking, Barbara Casu, Claudia Girardone and Philip Molyneux, Pearson, 2nd edition, 2015.
- 2) Contemporary issues in Banking, Chartered Banker, 2014

Supplementary Text:

- 1) The Economics of Money, Banking and Financial Markets, Frederic S. Mishkin, Global Edition, 11th edition update, 2016
- 2) Money the Financial System and the Economy, R. Glenn Hubbard, Pearson-Addison Wesley, 6th edition, 2008
- 3) The Economics of Banking, Kent Matthews and John Thompson, 2nd edition, 2008

ECO 631: Development Economics

This is an advanced course on economic growth and development. It offers an analytical exposition of selected topics in growth theory and development economics. It covers neoclassical and new growth theories and their relevance to understand the dynamics of developing economies. The course also provides a modern treatment of some of the traditional theories of growth and development. Finally, it covers some current applied issues in development. The course assumes a prior knowledge of a first course in development economics as well as a sound understanding of intermediate level micro and macroeconomics. It entails an extensive use of calculus, algebra and graphs. **(Prerequisite: ECO 350 or equivalents, 3 credits).**

Books:

- 1) Understanding Poverty, Abhijit V. Banerjee, Roland Benabou and Dilip Mookherjee, editors, Oxford University Press, March 2006
- 2) Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty, Abhijit V. Banerjee and Esther Duflo, Public Affairs, 2012
- 3) The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics, William R. Easterly, MIT Press, 2002
- 4) Empirical Development Economics, Routledge Måns Söderbom, Francis Teal, Markus Eberhardt, Simon Quinn, Andrew Zeitlin, 2014

ECO 642: Economics of Natural Resources

The course covers discussions on resource allocation under externality, intertemporal equilibrium, ecological and environmental models, production of depletable resources, optimal depletion of exhaustible resources, taxation of exhaustible resources, price movements in resource market, and laws and rules related to conservation of natural resources of Bangladesh. **(Prerequisite: ECO 301 and ECO 245 or equivalents, 3 credits).**

Books:

1) Natural Resource Economics: Notes and Problems, Jon M. Conrad and Colin W. Clark, Cambridge University Press, 1987

Supplementary Text:

- 1) Resource and Environment Economics, Anthony C. Fisher, Cambridge University Press, 1981
- 2) Economic Theory and Exhaustible Resources, P.S. Dasgupta and G.M. Heal, Cambridge University Press, 1979
- 3) Resource Economics, Jon M. Conrad, Cambridge University Press, 1999
- 4) Environmental Economics in Theory and Practice, Nick Hanley, Jason F. Shogren and Ben White, Oxford University Press, 1997
- 5) The Economics of Natural Resource Use, John M. Hartwick and Nancy D. Olewiler, Addison Wesley, 2nd edition, 1998

ECO 650: Environmental Economics

This course deals with economics of pollution, taxation and optimal pollution standards, taxes and subsidies, marketable permits for emission trading, pollution-control policy in mixed economy, global pollution policy and a set of case studies and policies on environment in the developing countries. **(Prerequisite: ENV/ECO354 or equivalents, 3 credits).**

Books:

1) Environmental and Natural Resource Economics: A Contemporary Approach, Jonathan M. Harris, Houghton Mifflin Company, 2006

Supplementary Text:

- 1) Environmental and Natural Resource Economics, Tom Tietenberg and Lynne Lewis, Pearson, Eight edition, 2009
- 2) Natural Resource Economics: An Introduction, Barry Field, Waveland Press, 2001
- 3) Environmental and Natural Resource Economics, Frank A. Ward, Pearson Education Ltd., 2006

ECO 651: Panel and Limited Dependent Variable

The course covers advantages and disadvantages of panel data, different kinds of static panel estimation such as fixed-effects, random-effects, and random coefficient model, dynamic panel data model such as Arellano-Bond, rationale for nonlinear model, binary choice model such as logit, probit, and tobit estimation, latent variable, sample selection, and Heckman's two step method. **(Prerequisite: ECO 502 or equivalents, 3 credits).**

Books:

1) Econometric Analysis of Panel Data, Badi H. Baltagi, Wiley, 5th edition, 2013

ECO 653: Time Series Analysis and Forecasting

The course covers topics such as dynamic regression models, univariate time series models such as AR, MA, and ARMA, trend and difference stationary models, time series models of heteroscedasticity such as ARCH, GARCH, EGARCH, Kalman filter, stationary dynamic systems such as VAR, impulse response function, non-stationary dynamic systems, unit root, cointegration, and error correction model. Basics of forecasting, modeling and forecasting trend, modeling and forecasting seasonality, characterizing cycles, modeling cycles: MA, AR, and ARMA models, forecasting cycles, forecasting with regression models, evaluating and combining forecasts, unit roots, stochastic trends, ARIMA forecasting models, and forecasting macro economy of Bangladesh are also covered. **(Prerequisite: ECO 502 or equivalents, 3 credits).**

Books:

- 1) Applied Econometric Time Series, Walter Enders, Wiley, 4th edition
- 2) Economic Forecasting, Graham Elliott and Allan Timmermann, Princeton University Press, 2016

ECO 682: Contemporary Economic Ideas

This is an advanced level course designed to study contemporary economic ideas, methodology and issues. The course is expected to cover the development in microeconomics, macroeconomics, heterodox economics, evolutionary economics, and new institutionalism. Besides these, the course is also designed to deal with contemporary issues including Islamic economic thought. Lastly, but not the least, students have a lecture on the philosophy of economics. **(3 credits).**

Books:

- 1) A History of Economic Theory and Thought, Robert B. Ekelund, Robert F. Hebert, McGraw-Hill International Edition, 3rd edition, 1990
- 2) History of Economic Thought, Harry H. Landreth and David Colander, South-Western College Publications, 4th edition, 2001

ECO 684: Monetary Economics

Empirical evidence on money and output, money in a general equilibrium framework, money and transactions, money and public finance, money and output in the short run, money and the open economy, the credit channel of monetary policy, discretionary policy and time inconsistency, monetary policy operating procedures, interest rates and monetary policy are discussed in this course. **(Prerequisite: ECO 304 or equivalents, 3 credits).**

Books:

- 1) The Economics of Money, Banking and Financial Markets, Frederic S. Mishkin, Addison Wesley, 7th edition

Supplementary Text:

- 1) Monetary Economics, Jagdish Handa, Routledge, 2nd edition
- 2) Monetary Theory and Policy, Carl E. Walsh, The MIT Press, 3rd edition

ECO 686: Game Theory

Static games of complete information: normal form representation of games, dynamic games of complete information, dynamic games of complete and perfect information: two-stage games of complete but imperfect information, sub game perfection, repeated games, dynamic games of complete but imperfect information, static games of incomplete information: static Bayesian games and Bayesian Nash equilibrium, dynamic games of incomplete information: introduction to perfect Bayesian equilibrium, and signaling games are covered in this course. **(Prerequisite: ECO 301 or equivalents, 3 credits).**

Books:

There is no required textbook for this course. Lecture notes and journal papers will be provided through google classroom or email.

Supplementary Text:

- 1) An Introduction to Game Theory, Martin J. Osborne
- 2) A Primer in Game Theory, Robert Gibbons

ECO 687: Agricultural Economics

This is an applied microeconomics course with a focus on food and agricultural industries, broadly defined. This course begins with a treatment of production economics, followed by consumer choice theory to lay the foundations for market analysis. Land market with a focus on land valuation is covered. A closer look is taken at the agricultural household model where production and consumption are linked, i.e. the household is both a consumer and a producer. Responses of the agricultural household to public policy under varying assumptions about their risk presence are studied. Trade and macroeconomic issues in agriculture are discussed. Economic analysis to understand the problems of natural resource management (and what steps can be taken toward solving these problems) is carried out. Problems associated with nonrenewable resources, energy, forests, fisheries, and biodiversity are explored. **(Prerequisite: ECO 301 or equivalents, 3 credits).**

Books:

- 1) Agricultural Production Economics, David L. Debertin, Amazon Createspace, 2nd edition, 2012
- 2) Natural Resource Economics: An Introduction, Barry Field, Waveland Press, 2nd edition, 2008

ECO 689: Project Analysis and Evaluation

This course deals with project choice, institutional framework, and cost-benefit analysis. It also covers measuring the profitability of a project under different goals, framework of project proposal, logical

framework analysis, and project monitoring with special reference to project proposal system used in Bangladesh. **(Prerequisite: ECO 101 and ECO 104 or equivalents, 3 credits).**

Books:

1) Projects–Planning, Analysis, Selection, Financing, Implementation and Review, Prasanna Chandra, Tata McGraw-Hill Publishing Company Ltd., 6th edition, 2007

Supplementary Text:

- 1) Economic Analysis of Agricultural Projects, EDI series in Economic Development, EDI, J.P Gittinger, World Bank, 1982
- 2) Guidelines for Project Evaluation, United Nations, UN, New York, 1972
- 3) Handbook on Impact Evaluation: Quantitative Methods and Practice, S. R. Khandaker, G.B. Koolwal and H.A. Samad, The World Bank, 2010

ECO 692: Special Topics in Economics

This is a general topic course to meet the special demand for students which may change from semester to semester depending on the need of students and the availability of expert. **(3 credits).**

Research Courses

ECO 583: Advanced Methods in Social Science Research

The main objective of this course is to lay the philosophical and methodological foundations of development research, both qualitative and quantitative. The course focuses on the bivariate and the multivariate analysis such as multiple regressions, analysis of variance and experimental designs, canonical correlation, multiple classification analysis and path analysis in the context of development research. Furthermore, stochastic statistical method such as Markov Chain Analysis and Cohort Analysis are covered. For qualitative methods, the course begins with a critical appraisal of participatory method and focus group discussions, and focuses on thick narratives, case study method, and content analysis. Other recent methodologies used in development research are also covered. **(Prerequisite: ECO 173 or equivalents, 3 credits).**

Books:

1) Introduction to Multivariate Analysis, C. Chatfield and A.J. Collins, London: Chapman & Hall, 1989

Supplementary Text:

- 1) Research Methodology: Methods and Techniques, C.R. Kothari and Gaurav Garg, New Delhi: New International Publishers, 3rd edition, 2014
- 2) An Introduction to Research Methods, M. Nurul Islam, Dhaka: Mullick & Brothers, 2nd edition, 2011

ECO 695: Research Based Term Paper

Students willing to complete MS without thesis must submit a supervised research paper in the field of his/her choice with prior approval of the Chairman of the Department. This will be graded by the supervisor. **(3 credits).**

ECO 699: Thesis

A thesis must be an original research of publishable quality. A thesis supervisor guides the student to complete the research. A thesis must be defended in person by the student in front of a Thesis Examination Committee consisting of 3 to 5 members. Thesis defense is open to all interested persons. A student with minimum CGPA of 3.5 is eligible for taking Thesis with prior approval of the Chairman of the department. **(6 credits).**

Foundation Courses

ECO 511: Microeconomic Analysis

Theory of choice and its application to consumer and producer behavior, theory of production and cost, output and input markets and their structure, equilibrium and efficiency, market failure, and introduction to general equilibrium are explored in this course. **(3 credits).**

Books:

1) Intermediate Microeconomics, Hal R. Varian, W.W. Norton & Company, 9th edition

Supplementary Text:

1) Microeconomics, D. Besanko and R. Braeutigam, International Student Version, Wiley, 2011

ECO 512: Macroeconomic Analysis

Mainstream models in macroeconomics such as classical models and Keynesian model, introduction to neo-classical and neo-Keynesian economics, consumption and investment analysis, IS-LM models of closed and open economies, AD-AS model, inflation and unemployment, basic growth theory and macroeconomic policy debates are discussed in this course. **(3 credits).**

Books:

1) Macroeconomics, Roger A. Arnold, Cengage Learning, 12th edition. 2016

Supplementary Text:

1) Economics (Chapters 21-31), Parkin and Michael, Pearson-Global edition, 11th edition, 2014

2) Macroeconomics, Gregory N. Mankiw, Macmillan-International Edition, 8th edition, 2013

ECO 514: Quantitative Techniques for Economic Analysis

Probability and probability distribution, sampling distribution, estimation, hypothesis testing, simple and multiple regression, and additional topics in regression (such as multicollinearity, heteroscedasticity, autocorrelation, non-linearity etc.) are discussed. **(3 credits)**.

Books:

- 1) Statistics for Management and Economics, Gerald Keller, South-Western College Publication, 10th edition, 2014
- 2) Introductory Econometrics, Jeffrey M. Wooldridge, South-Western College Publication, 5th edition, 2012