

# B. SC. in Economics

**B. SC. in Economics will be offered  
from AUTUMN 2007.**

**Students interested in pursuing this  
(be it either “Major” or “Minor”)**

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## Foundation Courses 39 - 41 Credits

<b>Economics Department Core Courses</b>		<b>51 credits</b>
(Compulsory)		(Each course 3 credits; 3×15 = 45+6)
<b>Course No.</b>	<b>Course Title</b>	<b>Credits</b>
ECN 201	Principles of Microeconomics	3
ECN 202	Principles of Macroeconomics	3
ECN 203	Mathematics for Economics	3
ECN 220	Economy of Bangladesh	3
ECN 301	Intermediate Microeconomics	3
ECN 302	Intermediate Macroeconomics	3
ECN 308	International Trade	3
ECN 309	International Finance	3
ECN 310	Money and Banking	3
ECN 320	Econometrics	3
ECN 330	Development Economics	3
ECN 350	Environmental Economics	3
ECN 401	Microeconomic Theory	3
ECN 402	Macroeconomic Theory	3
ECN 485	Research Methodology	3
ECN 490	Research Project/ Thesis	6
<b>Electives (5 courses)</b>		<b>15 credits (Each course 3 credits; 3×5=15)</b>
<b>Course No</b>	<b>Course Title</b>	
ECN 303	Agricultural Economics	3
ECN 335	Political Economy of Development	3
ECN 340	Public Finance	3
ECN 351	Labor Economics	3
ECN 360	History of Economic Thoughts	3
ECN 380	Urban and Regional Economics	3
ECN 382	Health Economics	3
ECN 385	Industrial Organization	3
ECN 420	Applied Econometrics	3
ECN 425	Mathematical Economics	3
ECN 430	Welfare Economics	3
ECN 435	Game Theory	3
ECN 440	Gender and Development	3
ECN 445	Technology and Economic Development	3
ECN 450	Project Analysis	3
<b>Minor</b>		<b>15 credits</b>

Students for Minor in Economics can choose from ECN202, ECN220, ECN301, ECN302, ECN330, ECN310, ECN320, ECN335, ECN445 and ECN450.

## *DETAILED COURSE LIST*

### **Economics Department Core Courses**

#### **ECN 202 Principles of Macroeconomics (3 credits)**

Basic concepts of Economics. Macroeconomics, concepts, tools and techniques are introduced in this course. National income and other related concepts. Measurements and use, aggregate demand and supply, consumption and saving, investment. Demand and supply of money, and demand and supply of labor. Theories of national income determination in a closed economy. Business cycles, unemployment and inflation, fiscal, monetary and income policies. National income determination in an open economy, internal and external balance. Economic growth. Introduction to different schools of macroeconomics with respect to the determination of output, employment, unemployment, interest rates, inflation. Introduces basic models of macroeconomics and illustrates principles with the experience of different economies.

#### **ECN 203 Mathematics for Economics (3 credits)**

Maxima and minima, production function, profit maximization and cost minimization. Utility and demand function, lagrange multipliers and methods for constrained optimization. Topics covered are; extreme values of a function of two variables; optimization with equality constraints; linear models and matrix algebra. Applications of matrix algebra in economics and business. Introduction to integral calculus and differential equations. Topics from dynamics and linear programming are also discussed. (*Prerequisite: MAT 101*)

#### **ECN 220 Economy of Bangladesh (3 credits)**

Topics covered are growth and structural change in Bangladesh in the areas of population, labor force, growth in GDP, per capital income. Structure composition GDP and macroeconomic performance since independence are also included. Issues in the agriculture sector are discussed where topics are the structure and growth of agricultural sector and its importance in the Bangladesh Economy; agricultural asset distribution, agricultural credit, micro-finance, co-operative strategies for development and changes in agricultural policies. In the industrialization area topics are growth of and development of Industries in the categories of large, small and cottage Industries, public and private industries, experiences with nationalization, denationalization and privatization, trade liberalization and industrialization, foreign exchange and industrial growth, foreign direct investment in Bangladesh. In the external sector trade and debt issues are covered. In addition in this area, exports, imports and Policies issues are considered with focus on the balance of payments and foreign exchange reserves, external aid and debt situation, impact of trade openness. Other areas covered are the fiscal policy in Bangladesh, the budget, tax and Non-tax revenues, expenditure. Recent developments in poverty, income

distribution and human resource development are also covered, where focus are the main Indicators, factors behind poverty and inequality, policy in relation to poverty and development. (Prerequisite: ECN 201, ECN 202)

**ECN 301 Intermediate Microeconomics (3 credits)**

This course provides students with a thorough introduction to microeconomic theory. This unit covers; introduction to microeconomic modeling; elementary theory of markets; consumer theory: preferences, budgets and demand, expected utility theory and inter-temporal choice. In addition, topics also include producer theory (technology, cost functions, profit maximization, firm supply, monopoly); general equilibrium and exchange; welfare economics (theorems, externalities and public goods, surplus); and an introduction to asymmetric information. (Prerequisite: ECN 201 and ECN203)

**ECN 302 Intermediate Macroeconomics (3 credits)**

This course focuses on Keynesian macroeconomics, the open-economy, IS-LM framework and aggregate demand-aggregate supply framework as a basic for advanced macroeconomic analysis. It will also touch upon the principles of monetary and fiscal policy as well as problems of implementation, alternate theories of aggregate supply, new classical macroeconomics and implications of imperfect information, new Keynesian macroeconomics and implications of labor market rigidities, and explaining and correcting inflation and unemployment. Moreover, the course also looks at models of long run economic growth, assessment of evidence on economic growth and its implications, flexible-price macroeconomic model, assessment of evidence whether prices and wages are flexible or sticky, the sticky price macroeconomic model, and analysis of macroeconomic policy making. (Prerequisite: ECN 202)

**ECN 308 International Trade (3 credits)**

The relevance of international economics. The role of trade. The role of International Monetary relation. Law of comparative advantages and absolute advantage. Trade under different conditions: opportunity cost, constant cost and increasing cost, the Heckscher-Ohlin model. The main propositions of H-O model. The Rybezynski Theorem. The Stolper- Samulson model. The Factor Price Equidisation theorem The Leontif paradox. The specific factor model. Monopolistic competition and international trade. Lindens thesis. Technological gap and product cycle. Growth and trade: the source of economic growth. The effects of growth on small country. The concept of terms of trade. Growth in the world economy. Types of tariff. The practical equilibrium analysis of tariff. The general equilibrium of tariff. Measuring the cost of protection. The optimal tariff. The infant industry argument ? Non Economic argument for protection. Export taxes and subsidies. Quantitative restrictions. International cartel, dumping and voluntary restrictions, customs unions and economic integration (Prerequisite: 301 and 302).

**ECN 309 International Finance (3 credits)**

Analysis of the impact of international trade and payments on price formation, allocation of resource, economic welfare, and the level of economic activity in trading countries. Balance of payments. Definitions. International consumption smoothing. Nominal and real exchange rates.

Interest rate parity. Elasticity approach to the trade balance. Macroeconomic policy in an open economy. Exchange rate determination under flexible and sticky price and exogenous and endogenous expectations. Exchange rate regimes and speculative attacks. Optimal currency areas. The international monetary system. Capital mobility; equilibrium on the balance of international payments. (*Prerequisite: ECN 301 and 302*)

### **ECN 310 Money and Banking (3 credits)**

This course focuses on the study of financial markets and institutions, in particular the study of money and banking. In addition, recent developments in theory and practice are also considered. The primary objective of this course is to help students obtain a better understanding of these and other important financial issues facing private citizens and policy-makers both in Bangladesh and abroad. Economic tools and concepts will be developed to help students organize their thinking about financial assets and markets, and about the varied roles of key financial market participants. This course involves discussions on the development of contemporary system of money, banking, and financial institutions. The course also analyzes central bank policy, capital markets, speculative markets, and portfolio theory. The topics considered include, but are not limited to, the money, bond/debt, stock/equity, and domestic/foreign currency markets; the role of adverse selection and moral hazard in determining what types of financial instruments exist and how financial markets and institutions are organized, the micro-credit movement; and the operation of the central bank in regulating financial institutions and in controlling inflation and unemployment. (*Prerequisite: ECN 201, ECN 202*)

### **ECN 320 Econometrics (3 credits)**

This course provides an introduction to multiple linear regression methods, including the use in estimating and testing the validity of models in economics, finance and business. The topics covered include the classical assumptions underlying the linear model; the properties of the ordinary least squares estimator; probability distributions and their application to interval estimation and hypothesis testing; the generalized least squares estimator; an introduction to the problems of heteroscedasticity, serial correlation, multicollinearity, structural breaks and stochastic regressors. (*Prerequisite: STAT 211 and ECN203*)

### **ECN 330 Development Economics (3 credits)**

This course examines theoretical and empirical issues in economic development, focusing on the nature of development; the role of history and expectations in development process; interconnections between economic inequality and development; population, education and human capital issues; household, family and gender concern; the rural - urban migration; markets in agriculture; credit markets, insurance and savings; political economy of development. The objective of the course is to provide students with the necessary knowledge and skills to interpret academic literature on development and to draw implications for policy. (*Prerequisite: ECN 301 and ECN 302*)

**ECN 340 Public Finance (3 credits)**

This course explores the relationship between the public and private sectors from the perspective of public finance. Economic analysis of governmental activity; public goods and externalities; collective choice; cost-benefit analysis; public welfare programs; theory of taxation; efficiency, incidence; effect on distribution of income, deficit financing, government and redistribution and public choice. Personal and corporate taxes including VAT; taxation of property estates.

*(Prerequisite: ECN 201, ECN202)*

**ECN 350 Environmental Economics (3 credits)**

The course starts with a discussion of growth, environmental restriction and sustainability. The basic economic concepts of government regulations and market failure, externality, public goods and (common) property are explained. This forms a basis for discussing and comparing various policy instruments such as command-and-control regulation, taxes, tradable permits and the criteria by which to judge various policy instruments when they are actually implemented in complex real world situation. Some time is also spent on natural resource accounting, cost-benefit analysis and on discussing the various complex issues of valuing environmental services, the use of shadow prices etc. *(Prerequisite: ECN 201 and ECN 202)*

**ECN 401 Microeconomic Theory (3 credits)**

This course is designed to deal with relatively advanced topics in microeconomics that are not covered at the early stage of the undergraduate program. This course aims to help students to bridge the gap between undergraduate and postgraduate economics. It is therefore strongly recommended for all students who are considering continuing to a taught Masters course in Economics. The course will attempt to develop students' capacity for strategic reasoning via the translation of economic stories into simple models, spelling out every step of each argument in detail. More specifically, this course offers a rigorous introduction to the graduate-level microeconomic theory. In addition to the discussion of the theoretical construct of graduate-level microeconomic models, the broad objective of the course is to lay the foundation for empirical applications in microeconomics. In order to accomplish this broad objective, the course discusses theory of the firm, consumer behavior, market structure, theory of public goods and externalities, welfare economics, and information economics. *(Prerequisite: ECN 301)*

**ECN 402 Macroeconomic Theory (3 credits)**

This course lays a foundation of advanced macroeconomic analysis; incorporating theory, data and computational methods. Emphasis is given to real-world issues, focusing on how economists use macro models and data to improve decision-making in the public sector. Specifically, the course involves discussions on neoclassical and endogenous growth models, real business cycle and new Keynesian theories of economic fluctuations, monetary theory, macroeconomic policy, and open-economy macroeconomics. Topics also include; consumption: life-cycle and permanent-income hypothesis; Inflation: causes and effects of inflation, disinflation, seignorage, dynamic inconsistency, hyperinflation; debts and deficits: the government budget constraint, Ricardian equivalence, fiscal policy and output stabilization. In the course also cover additional topics such as basics of monetary policy *(Prerequisite: ECN 302)*

**ECN 485      Research Methodology (3 credits)**

This course provides an introduction to the fundamentals of social research by comparing the approaches of several different research methods. Focusing on research design, data collection, data analysis, and the ethics of research, the students will explore the strengths and weaknesses of the different methods. The ultimate goals of the course are (1) to have developed the ability to critically evaluate various forms of social research from a methodological standpoint and (2) to be able to conceptualize and design a research project at the end of the course.

*[Prerequisite: ECN 320]*

**ECN 490      Research Project/ Thesis (6 credits)**

Students will write a research essay by end of the undergraduate program to demonstrate skills learned in the program. This will be individual supervision by faculty members; student will propose their research title and supervisors name to the department for approval at least three months in advance. The length of the essay should be approximately 50 pages.

*[Prerequisite: ECN320 and 485]*

**Elective Courses**

**ECN 303      Agricultural Economics (3 credits)**

This course will cover the rationale for government intervention in the agri-food sector, policy objectives and instruments of government intervention, international trade, agricultural protectionism and WTO; and world food safety and food security. Other topics to be covered will include characteristics and determinants of agricultural demand and supply, economic analysis of rural households, government support mechanisms, economics of food safety and security, economics of share-cropping, sustainable resource use and environmental protection.

*(Prerequisite: ECN 201 and ECN202)*

**ECN 335      Political Economy of Development (3 credits)**

Economic development under colonialism, the colonial legacy, population, trade and development, land reform, the Green Revolution, industrialization strategies, distribution of the gains from development and growth. Political economy of institutions and research methodology in political economy is also discussed. Each topic is discussed in the context of a developing country. Comparative analyses of different economies are considered.

**ECN 351 Labor Economics (3 credits)**

This course is an introduction to the study of labor economics. It provides an overview of labor supply and labor demand models, with extensions to models of taxes and tax credits, welfare, and social security. The focus then shifts to models of wage determination and extensions such as the effects of minimum wage, performance-based pay, unions, and discrimination. The course will be

equally devoted to both theoretical and empirical analysis of these issues. Topics broadly covers; demand for labor, overview of labor market and elasticity, supply of labor, labor unions, human capital theory, labor mobility and wage differentials, international labor mobility (*Prerequisite: ECN 301*)

**ECN 360 History of Economic Thought (3 credits)**

The purpose of the course is to give the students an overview of the growth and development of the economic thought. Topics covered: Introduction to different schools of thought, Ancient and Medieval Economic Thought, Mercantilism, Harbingers of Adam Smith, Adam Smith: Value Theory, Growth and Income Distribution, Political Economy and Ideology; Malthus and Ricardo: Population and Scarcity, the theory of Value and Distribution, Accumulation and Gluts; Karl Marx: Value Theory, Accumulation, Growth and Crises. Developments and formations of modern economics in light of economic history; recent development is economic thoughts such as rational expectations, experimental economics and role of game theory in economics.

**ECN 380 Urban and Regional Economics (3 credits)**

This course is an extension of microeconomic foundations of regional and urban economics to recent advances in economic growth and development, economic structure, land-use, public finance, housing, social welfare, environmental quality, and transportation. It will also analyze the urban growth and development, and regional economic development within the framework of economic theory. The discussion centers on urban and regional growth, urban problem areas and urban-regional policy issues, analysis of the underlying concepts and characteristic features of modern economic systems.

**ECN 382 Health Economics (3 credits)**

This course covers the application of economic principles to the study of health. Topics include the demand for health care and its supply; issues in health care finance, including uncertainty, insurance, and the rationale for public and private provision; the extent to which welfare economics can be applied to health, including definitions of inequality and the links between inequalities in income and health; health services for the poor and the role of government and health in the context of a developing country; overview of the national health system and recent development in Bangladesh health system; and evaluation of health care treatments with focus on cost effectiveness and cost utility analysis. (*Prerequisite: ECN 201*)

**ECN 385 Industrial Organization (3 credits)**

This course is a relatively advanced undergraduate course in Industrial Organization. In this course we will consider variations in the market structures away from extremes of perfect

competition and monopoly. Topics include; overview of course; competition policy: history, welfare measures, competition law; monopoly; static games and Cournot competition; Bertrand competition; Dynamic Games and First and Second Movers; Collusion; product differentiation; limit pricing and entry deterrence; bundling: theory and policy issues; advertising; research and development; mergers. (*Prerequisite: ECN 301 and EN 302*)

**ECN 420 Applied Econometrics (3 credits)**

The aim of this course is to develop students' ability to apply economic principles and reasoning to the analysis of economic policy. Students will be equipped to demonstrate their understanding of the concepts involved in the measurement of economic data; apply and understand applied econometrics and discuss current economic policy in Bangladesh and how to use macroeconomic modeling in this context. Relevant computer-based techniques will be used to demonstrate econometrics and data analysis. Topics covered include applied regression tools, including simple and multivariate regression analysis; linear, non-linear, and qualitative dependent variable models, distributed lags, seemingly unrelated regression, model specification and validation tests. (*Prerequisite: ECN 371*)

**ECN 425 Mathematical Economics (3 credits)**

The objective of this course in Mathematical Economics is to prepare students for future graduate level course work in the field of economics. Optimization problems: the n-variable case; optimization with equality constraints: the n-variable case; first and second order differential equations; first and second order difference equations. concavity and static optimization. Concave functions; homogeneous functions; constrained optimization and Kuhn-Tucker conditions; closed, convex and compact sets; quasi-concave functions; the envelope theorem; applications to consumer and producer theory; continuous time dynamics and dynamic optimization. Hamiltonians, maximum principle conditions and time dynamic optimization models. (*Prerequisite: MAT 101 and MAT 204*)

**ECN 430 Welfare Economics (3 credits)**

The course covers welfare theory, theory of public goods, cost benefit analysis, budgetary issues and legislation, public choice, taxation theory and practice, tax reform, the welfare state, efficiency, targeting and poverty traps, insurance markets, social insurance, pensions and the economics of the ageing population. It develops a theoretical framework to analyze both normative questions (what should the state do) and positive questions (what is the impact of state activity, what are the implications of alternative public choices). The philosophical and conceptual issues involved in 'reinventing government' are highlighted in the context of the evolving economy that has become global in character. The course draws on the rich source of innovative developments in state expenditure, project evaluation, taxation, privatization and accountability that are associated with the public sector and tax reforms from local, regional and international cases. (*Prerequisite: ECN 301*)

**ECN 435      Game Theory (3 credits)**

Game Theory is the study of how decisions should be made when there are two or more decision makers, each of whom is affected not only by his or her own choices, but also by the choices of others. In this course, the basic tools of game theoretic analysis will be introduced. Some of the many applications of game theory, primarily in economics and political science will be introduced. Here, emphasis will be on the conceptual analysis, keeping the level of math to a minimum. The course discusses the following main themes of models of imperfect competition, evolution of game theory and description of economic behavior, and repeated games and cooperative behavior. The students will focus on the Nash equilibrium, find the equilibrium outcomes of simple games including the use of backward induction, learn how to write down the extensive form or normal form representations for apply knowledge of game theory in various economic applications. (*Prerequisite: ECN 301*)

**ECN 440      Gender and Development (3 credits)**

The course will primarily focus on the main models used in gender and development theory and to compare the strengths and weaknesses of these models. It will discuss the background to the emergence of gender awareness in development theory and practice as well as define 'social development' and identify its origins in development theory and practice. Moreover, it will focus on the ways in which social development is currently understood by different agencies and how its contributions to interventions and policy are viewed. It also touches upon the factors determining the social development agenda and models, such as home production models. Students will also learn how to apply critically tools which have been designed for making the project planning process more participatory, such as stakeholder analysis, PRA and participatory indicators

**ECN 445 Technology and Economic Development**

Technological progress is one major determinant of modern economic growth. The course will begin with an overview of theories of economic growth and role of technology in the models. These will include the neoclassical models that dominated mainstream economic thinking until the mid-1980s, post-Keynesian alternatives, evolutionary theories of growth in the tradition of Schumpeter, and more recent contributions to the 'new growth theory'. Empirical experiences of growth from different countries will be introduced. This course also aims to discuss theoretical technology diffusion models and reasons for unequal access to Information and Communication Technologies (ICTs) within developing countries and between countries. Empirical studies that depict the pattern of the diffusion of ICTs in developing countries will also be explained along the economic contributions of new technologies in developing countries and the paradox of ICT and productivity. It also intends to focus on other technologies such as bio-technology, where the issues of genetically modified (GM) foods in developing countries will be addressed. In addition, this course covers specific topics related to sources and dynamics of technical innovation in different countries with specific reference to economic development. It aims to bring into discussion some critical issues such as the technology diffusion and international transfer, technology gap, catching up and leapfrogging, with special focus on the role of foreign direct investment (FDI) inflows as channel of technologies from the developed into the developing

world, and on the role of affiliates of multinational corporations (MNCs) as actors in the innovation systems and capability building in the host developing economies. (*Prerequisite: ECN 301 and ECN302*)

### **ECN 450 Project Analysis**

What are projects, what are costs and benefits and how to plan policies, programs and projects are the issues in this course. This course is to offer understanding and guidance in the use of benefit-cost analysis while evaluating development projects. Examples are used to explain the real world scenario. Attention will be given to practical analysis with emphasis on the use of shadow prices, the use of consumers' surplus and the problems of valuing goods that do not have market prices. The topics in the course include; Pareto optimality, actual or potential Pareto improvements, public goods vs private goods. The general principles of valuation of benefits and costs, the concept of net social benefit, specific guidelines, the competitive market, valuation with market prices. Valuation without market prices, investment criteria and project selection, discounting to a present value, choosing the base date for discounting. Calculating an equivalent annual cost. Issues in using the net present value rule - allowing for inflation, concepts of the discount rate, benchmark discount rates. Risk-neutrality and risk aversion, techniques for handling uncertainty, sensitivity analysis. Criticisms and limitations of benefit-cost analysis. Logical frameworks will also be introduced and will be examined as one potential tool for assisting project planners. In the end, the course will also discuss about Monitoring and Evaluation (M&E), which is often a neglected but important area of study in project appraisal and project effectiveness. (*Prerequisite: ECN 301*)