

The logo for Shiv Nadar University, featuring the name in a blue serif font with a decorative horizontal line above it.

**SHIV NADAR UNIVERSITY**

**DEPARTMENT OF ECONOMICS**  
**SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**

**Undergraduate Prospectus**  
**Bachelor of Science (Research)**  
**Economics**

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## **Economics at SNU**

The discipline of economics offers powerful tools for understanding social interactions. It investigates what prompts individuals to take certain decisions and how such decisions affect everyone else. The study of economics helps in designing mechanisms and policies to achieve organizational or societal outcomes that are valuable or sustainable, and efficient. Modern economics has made significant contributions in understanding issues in business, finance and industry, politics, public policy and social issues.

The Department of Economics at Shiv Nadar University is one of the premier Economics departments in India. Established in 2012, it has quickly established its reputation as one of the leading centres of Economics education and research. The department is staffed with faculty who actively research various sub-disciplines in economics including economic theory, macroeconomics, political economy, development economics, environmental economics, industrial organization and finance.

## **The Undergraduate Major in Economics**

Our B.Sc. (Research) program is one of its kind in India. The core strength of the program is drawn from the faculty members it will be taught by, who are active researchers in their respective fields. To the extent possible, courses include independent research components in the form of term papers, presentations etc. Our B.Sc. (Research) degree is designed to be comparable to internationally acclaimed programs and combines rigour in training with flexibility in choice. The aim is to produce students who are ready for opportunities in the market: be it jobs in the corporate sector, public sector, non-governmental/social sector or a desire to pursue higher studies in economics or related disciplines.

## **Programme structure**

Economics training at SNU aims to provide students with a thorough understanding of the core areas in economics followed by instruction in sub fields of the student's own choosing in the final years. Students will also have to finish an undergraduate thesis project as part of the programme. The students can choose from a wide range of sub fields including, but not limited to, game theory and industrial organization, development economics, political economy, public economics, environmental economics, macroeconomics and international finance etc.

To graduate with a Major in Economics, each student must have at least 70 credits in Economics (out of a minimum total of 120 credits) obtained over the course of the undergraduate programme. A student must complete all requirements for a degree in a minimum of three years and a maximum of six years.

**Major in Economics | Coursework and Credits Overview:  
An example**

| Courses  | Year/s   | Credits                       |
|--|--|-------------------------------|
| <b>Academic Writing</b><br><i>A course for all students in the School of Humanities and Social Sciences</i>  | 1 <sup>st</sup> Year                           | 3 Credits                     |
| <b>Logic and Scientific Reasoning</b><br><i>A course on quantitative methods specially designed for students in the School of Humanities and Social Sciences</i>   | 1 <sup>st</sup> Year                           | 4 Credits                     |
| <b>Modernity: A Critical Exploration</b><br><i>A course taught by the SHSS faculty across the disciplines</i>  | 1 <sup>st</sup> Year                           | 3 credits                     |
| <b>Core Courses in Economics: Foundation Courses</b><br><i>Intensive courses in Economics that builds basic understanding and theoretical foundation.</i>  | Years 1 & 2                                    | 7 x 4 Credits<br>= 28 Credits |
| <b>8 Departmental Optional Courses</b><br><i>Selected from a wide range of course offerings covering diverse areas and sub-fields</i><br><br><i>Students may propose to take up to 1 elective as Independent Study in a specific area of interest with the approval of the Department and under the instruction of a faculty member.</i> | Selected from options available<br>Years 2 & 3 | 8 x 3 Credits<br>= 24 Credits |
| <b>Research Workshop and Undergraduate Thesis</b><br><i>Students will conduct supervised research on a topic of their choice and prepare a thesis for submission in their final year</i>   | Semester 7 and 8<br>in Year 4                  | 3 + 6 Credits<br>= 9 Credits  |
|  | <b>4 Years</b>                                 | <b>71 Credits</b>             |

## Major in Economics | An Example of a Semester-wise Schedule

|                            |  |  |
|----------------------------|--|--|
| <b>1<sup>st</sup> Year</b> | <b>Semester 1</b><br><br><ol style="list-style-type: none"> <li>1. Academic Writing</li> <li>2. Logic &amp; Scientific Reasoning</li> <li>3. Principles of Microeconomics</li> <li>4. UWE</li> <li>5. CCC</li> </ol>                           | <b>Semester 2</b><br><br><ol style="list-style-type: none"> <li>1. Modernity: An Interdisciplinary Exploration</li> <li>2. Principles of Macroeconomics</li> <li>3. Calculus</li> <li>4. Probability and Statistics</li> <li>5. CCC</li> </ol> |
| <b>2<sup>nd</sup> Year</b> | <b>Semester 3</b><br><br><ol style="list-style-type: none"> <li>1. Intermediate Microeconomics</li> <li>2. Game Theory</li> <li>3. Introductory Econometrics</li> <li>4. UWE/ Introduction to programming</li> <li>5. CCC</li> </ol>           | <b>Semester 4</b><br><br><ol style="list-style-type: none"> <li>1. Intermediate Macroeconomics</li> <li>2. Advanced Microeconomics</li> <li>3. UWE</li> <li>4. UWE</li> <li>5. CCC</li> </ol>  |
| <b>3<sup>rd</sup> Year</b> | <b>Semester 5</b><br><br><ol style="list-style-type: none"> <li>6. Departmental Elective I</li> <li>7. Departmental Elective II</li> <li>8. Departmental Elective III</li> <li>9. UWE/ Introduction to programming</li> <li>10. CCC</li> </ol> | <b>Semester 6</b><br><br><ol style="list-style-type: none"> <li>1. Departmental Elective IV</li> <li>2. Departmental Elective V</li> <li>3. Departmental Elective VI</li> <li>4. UWE</li> <li>5. CCC</li> </ol>                                |
| <b>4<sup>th</sup> Year</b> | <ol style="list-style-type: none"> <li>1. RESEARCH PROJECT (3 credits)</li> <li>2. Departmental Elective VII</li> <li>3. UWE</li> <li>4. UWE</li> <li>5. CCC</li> </ol>  | <ol style="list-style-type: none"> <li>1. RESEARCH PROJECT (6 credits)</li> <li>2. Departmental Elective VIII</li> <li>3. CCC</li> </ol>   |

## **Course descriptions**

### **ECO 101: Principles of Microeconomics**

This course is designed to provide a solid foundation for economic analysis and a broad understanding of the economic issues at the level of individuals and firms. This course begins with a discussion of supply and demand and the basic forces that determine equilibrium in a market economy. Also covered are different kinds of market structures and their impact on a firm's optimal decisions. Students are introduced to concepts of welfare and some applications of the theory. **(3:1:0)**

**Pre-requisites: None**

### **ECO 102: Principles of Macroeconomics**

This course is devoted primarily to macroeconomics with emphasis on the determination of the aggregate level of economic activity, analysis of government policies, short-run economic stability (i.e. degree of unemployment), the rate of inflation and long-run economic growth. **(3:1:0)**

**Pre-requisites: ECO 101**

### **ECO 103: Basic Statistics**

The course begins with a survey of basic descriptive statistics and data sources and then covers elementary probability theory, sampling, estimation, hypothesis testing, correlation, and regression. The course focuses on practical issues involved in the substantive interpretation of economic data using the techniques of statistical inference. **(3:1:0)**

**Pre-requisites: None**

### **ECO 108: Logic and Scientific Methods**

This is an introduction to mathematical logic and scientific methods that provides an analytical foundation. The course begins with an introduction to elements of logic and deductive method and will mostly emphasize on theory of sentential calculus, identity, relations and deductive methods. Finally, applications of logic are presented towards a construction of mathematical theory. **(3:1:0)**

**Pre-requisites: None**

### **ECO 118: Mathematical Methods**

This course will introduce students to the major mathematical tools that are used in modern economics, and these tools to various economic questions. The tools to be discussed may include real analysis, linear algebra, constrained optimization, duality, dynamics, fixed point theorems, and optimal control theory. **(3:1:0)**

**Pre-requisites: None**

### **ECO 203: Introductory Econometrics**

This course introduces the students to the basics of the linear regression model. The topics included in the course are: the simple linear model, multiple linear models, classical assumptions about disturbances, hypothesis testing, violation of classical assumptions: auto-correlation and heteroskedasticity, omitted variable bias, functional forms, dummy variables, outliers, goodness of fit, instrumental variables. **(3:0:1)**

**Pre-requisites: ECO 101, ECO 103 or equivalent**

**ECO 221: Game Theory**

This course is an introduction to non-cooperative game theory. We will study the basic concepts of Nash Equilibrium, Correlated Equilibrium, Dominance & rationalizability, Sub Game perfection and Bayesian Equilibrium. We will try to apply these concepts to solve problems from various sub-disciplines of economics like industrial organization, environmental economics and public economics. **(3:0:0)**

**Pre-requisites: ECO 118 or equivalent**

**ECO 232: Money and Banking**

This course studies the role that financial markets, institutions, and money play in resource allocation. Financial intermediation and the role of banks in the economic system are analysed and the economic rationale behind banking regulation is studied. The course examines how monetary policy influences interest rates and asset markets, such as the bond market and the stock market. Finally, the instruments and goals of monetary policy are discussed, focusing in particular on credibility and commitment for central banks. All of the questions are explored analytically, using the tools of economic theory. **(3:0:0)**

**Pre-requisites: ECO 101, ECO 102**

**ECO 241: History of Economic thought**

This course will enhance the students understanding of the development and progression of the discipline of economics. This course is structured around questions like: How have different schools of thought in economics analyzed markets as the institution of resource allocation? How have the views about the market and the state as two major institutions of resource allocation changed over time. **(3:0:0)**

**Pre-requisites: ECO 101**

**ECO 243: Basic Law and Economics**

Here we focus on the relationship of economic principles to law and the use of economic analysis to study legal problems. Topics will include: property rights and intellectual property; analysis of antitrust and of legal decision-making. **(3:0:0)**

**Pre-requisites: ECO 101, ECO 102, ECO 118 or equivalent**

**ECO 251: Principles of Urban Economics**

This course covers the main economic forces that lead to the existence of cities and regional agglomeration. In particular it will concentrate on the theory and evidence of the emergence of cities and their effect on worker productivity, urban amenities, and congestion. The focus will be on measuring these urban characteristics, as well as the design of optimal urban policy. The course will analyze the role cities play in aggregate economic development. **(3:0:0)**

**Pre-requisites: ECO 301**

**ECO 301: Intermediate Microeconomics**

This course gives a detailed introduction to consumer and production theory. We use the concepts developed in these theories to build the structure of welfare economics. We study the efficiency of markets in resource allocation and the role of government in case of market failures. **(3:1:0)**

**Pre-requisites: ECO 101, ECO 118 or equivalent**

**ECO 302: Intermediate Macroeconomics**

This course discusses the facts and theories about the determination of per capita income and its differences across countries and across time. In particular, it will include the study of economic fluctuations in output and employment and the role of government in influencing these aggregate variables through its monetary and fiscal policies. **(3:1:0)**

**Pre-requisites: ECO 102, ECO 118 or equivalent**

**ECO 303: Econometrics and Data Methods**

This course will build on the Introduction to econometrics course. We will build on the linear regression model by looking at additional topics in linear regressions, simultaneous equations, program evaluation etc. This course will include a “lab” component where students with the help of statistical software like STATA will learn how to collect, analyse and interpret economic data. **(3:1:1)**

**Pre-requisites: ECO 203**

**ECO 304: Indian Economic History**

This course is an attempt to understand how historical institutions shape present economic outcomes but will focus on it from an Indian perspective. What have been the long lasting impacts of historical Indian institutions on economic outcomes? What did the nature of the Indian economy look like two centuries ago? How did the experience under the British Empire change Indian society and economy? We will look at theories dealing with the persistence of the caste system, the effect of global events on the pre-independence Indian politics, etc. **(3:0:0)**

**Pre-requisites: ECO 101, ECO 102**

**ECO 326: International Trade and policy**

International trade is the flow of goods across countries. This will be a two part course. The first part of the course will focus on models of international trade: the basic Ricardian model, the Heckscher-Ohlin-Samuelson model, etc. The second part will focus on the empirical literature in international trade, including topics like the link between trade and growth, fair trade etc. We may also look at the economics and politics of free trade agreements. **(3:0:0)**

**Pre-requisites: ECO 301, ECO 221**

**ECO 327: Corporate Finance**

This course considers a wide range of topics in theoretical corporate finance (broadly interpreted). Topics include capital structure decisions, agency conflicts in the firm, dividend policy, security design, optimal financial contracting, the theory of the firm, the

market for corporate control, and banking and financial intermediation, among others. The primary focus is on how asymmetric information, agency conflicts, strategic interactions, and incomplete contracting affect corporate financial decision-making. **(3:0:0)**

**Pre-requisites: ECO 301, ECO 221**

### **ECO 335: Introductory Environmental Economics**

Most environmental problems are problems of market failure. In this course, we will study the public policy response to such problems in an economic setting. We compare the different responses by using different criterion like equity, economic efficiency and environmental sustainability. We will study conditions of optimal extraction of renewable and non-renewable natural resources in a dynamic setting. **(3:0:0)**

**Pre-requisites: ECO 301**

### **ECO 364: Public Economics**

An introductory public economics course that will primarily focus on the role of government in market economy, namely provision of public goods, imposition of direct and indirect taxes and redistribution of income, among others. The issue of resource allocation and its implications, in terms of efficiency and equity, will be addressed in detail throughout. A few applications and policy issues will be presented. **(3:0:0)**

**Pre-requisites: ECON 301**

### **ECO 401: Advanced Microeconomics**

An advanced course in undergraduate microeconomics, where some of the following advanced topics in microeconomics will be presented in detail: consumer behaviour, firm decision and factor markets, general equilibrium, welfare economics, imperfect competition, applications of game theory, asset pricing, uncertainty and asymmetric information, asset markets. **(3:0:0)**

**Pre-requisites: ECO 301**

### **ECO 403: Advanced Econometrics**

This is an advanced undergraduate econometrics course for those who want to go deeper into econometric theory and its applications. Topics covered will include instrumental variables, panel data methods, difference-in-difference techniques, limited dependent variable methods and experimental methods. Students will be required to be familiar with and use various econometric softwares. **(3:1:1)**

**Pre-requisites: ECO 303**

### **ECO 415: Issues in Economic Development**

This course introduces the students to issues that face economic agents in developing economies like India. We will tackle various issues pertaining to a developing economy: households and gender differences, health and nutrition, land and labour markets in developing countries, credit and insurance markets etc. We will also try and understand what and how economists can contribute to the challenge of dealing with extreme poverty.

**Pre-requisites: ECO 301, ECO 203**

### **ECO 431: Industrial Organization**

The course focusses on strategic interactions of firms in an imperfectly competitive market/industry. Topics include monopoly, price discrimination, oligopoly models, product quality and differentiation, advertising, vertical integration, patents, R&D and innovation, scope for government regulation and antitrust/competition policies. **(3:0:0)**

**Pre-requisites: ECO 301, ECO 221**

#### **ECO 437: Financial Economics and asset pricing**

An introductory course on asset pricing that will introduce various financial assets and its pricing mechanism. Beginning with mean variance models, the course will move to arbitrage pricing theory. Aspects of commodity market, including hedging, arbitrage and speculation will also be presented in case of various financial assets/instruments. **(3:0:0)**

**Pre-requisites: ECO 301, ECO 302**

#### **ECO 455: Topics in Environmental Economics**

This course deal with issues related to third world environmental problem. It will show of issues of development and environment is inextricably related to each other in a third world context. We will cover topics like CPR theory, Poverty and Environment, Gender and Environment and the Political Economy of Environmental Policy. **(3:0:0)**

**Pre-requisites: ECO 342**

#### **ECO 461: International Economics**

In this course we will study the flow of goods and services (international trade) and capital (international finance) across borders. Topics covered will include a number of issues of contemporary interest such as: free trade agreements, debates on globalization (including FDI, import barriers etc.), current account deficits, the global financial architecture and the recent financial crisis. **(3:0:0)**

**Pre-requisites: ECO 301, ECO 302**

#### **ECO 462: International Finance and Policy**

An introductory course in international finance that focuses on topics as; national income accounting and account of cross-country trades, balance of payments, exchange rate and its determination, fixed and flexible exchange rate, interest rate, currency and monetary arrangements, capital flows and financial crisis. **(3:0:0)**

**Pre-requisites: ECO 301, ECO 302**

#### **ECO 465: Labour Economics**

This course is an introduction to labour economics with an emphasis on applied microeconomics and empirical analysis. We will cover topics like labour supply and demand, minimum wage arguments, human capital, education, discrimination (along gender, caste, religious lines), inequality, social mobility etc. **(3:0:1)**

**Pre-requisites: ECO 301, ECO 203**

#### **ECO 481: Topics in Game Theory**

This is an advanced course in game theory and covers the refinements of the equilibrium concepts in both static and dynamic environments. Topics include Bayesian Nash equilibrium, dynamic games of perfect and imperfect information, sequential

equilibrium, signaling games, and repeated games.

**Pre-requisites: ECO 301, ECO 221**

**ECO 484: Economics of Sports**

This course aims to provide students with detailed understanding of the application of theoretical and empirical methods to the field of sports, and to explore policy issues impinging on competitive balance and uncertainty of outcome in professional team sports leagues. **(3:0:0)**

**Pre-requisites: ECO 301, ECO 221**

**ECO 492: Topics in Macroeconomics**

This course concentrates on the fundamentals of modern macroeconomic modelling and applications for forecasting and policy analysis. Attention will focus on representing such macroeconomic phenomena as inflation, unemployment, the business cycle, productivity, and secular growth. Students will build a macro model. Topics will include how to simulate a range of fiscal and monetary policies and how to measure their effectiveness for stabilization and growth. **(3:1:1)**

**Pre-requisites: ECO 302**