



# **St. Xavier's College – Autonomous Mumbai**

## **Syllabus For 4<sup>th</sup> Semester Core and Applied Courses in**

### **Economics (June 2021 onwards)**

Contents:

Theory Syllabus for Courses:

- AECO0401    Macroeconomic Analysis-II
- AECO0402    Introduction to Econometrics –II
- AAC0401     Elementary Mathematical Techniques

**SYBA**

**Course: AECO0401**

**Title: Macroeconomic Analysis-II**

Learning Objectives:

1. Understand the new techniques of General Equilibrium analysis.
2. Learn new methods of macroeconomic analysis by using different tools.
3. Learn the various tools in general equilibrium analysis from research point of view.
4. Understand the relevance of open economy equilibrium for comparative study.

**Number of Lectures: 45**

**Unit 1: ISLM Analysis**

**(15 Lectures)**

- Derivation of ISLM curves, mathematical treatment of ISLM curves
- Determination of product market and money market equilibrium interest rates and income
- Factors affecting position and slope of ISLM curves

**Unit 2: Fiscal and Monetary Policy**

**(15 Lectures)**

- Explanation of fiscal policy using ISLM curves.
- Phenomenon of Crowding out and criticisms
- Explanation of monetary policy using ISLM curves
- Liquidity Trap

**Unit 3: Open Economy Macroeconomics**

**(15 Lectures)**

- Fixed vs Flexible Exchange Rate. Concept of Real Exchange Rate
- Mundell-Fleming Model. Impossible Trinity
- Disequilibrium in Balance of Payments. Adjustment in Balance of Payments: Devaluation, Reduction in Absorption, Direct controls
- Global financial and economic crises

CIA 1: MCQs

CIA 2: Project with respect to Indian Economy and Central and State Government Budgets

**Basic Reference:**

D'Souza Errol, (2012), Macroeconomics, Dorling Kindersley India pvt. Ltd.-Pearson Education, second edition

Mankiw Gregory, (2007), Principles of Macro Economics, Cengage Learning India Private Ltd. New Delhi, Fourth edition

**SYBA**

**Course: AECO0402**

**Title: Introduction to Econometrics–II**

**Learning Objective:**

1. Learn different types of econometric models.
2. Use models for understanding features of the data and drawing economic conclusions.
3. Run diagnostics checks on the model.
4. Formulate models and perform quantitative analysis.

**Number of Lectures: 45**

**Unit 1: Extensions of Two Variable Linear Regression Models [10 lectures]**

- Regression through the Origin Model
- Semi-log Model; Double-log Model: Measuring Elasticity and Growth Rates
- Polynomial Models
- Reciprocal Models

**Unit 2: Multiple Linear Regression Model [10 Lectures]**

- Interpretation of Partial Regression Coefficients
- Interval Estimation and Hypothesis Testing: Testing Hypothesis about a single Population Parameter: The t test, Testing Multiple Linear Restrictions: The F test

**Unit 3: Failure of Classical Assumptions: [15 lectures]**

- Heteroscedasticity- Consequences for OLS; Testing for Heteroscedasticity- Informal Methods and Formal Methods: Park Test, Spearman's Rank Correlation Test, Goldfeld-Quandt Test, Breusch-Pagan-Godfrey Test, White's Test; Remedial Measures
- Multicollinearity- Consequences; Detection and Remedial Measures
- Autocorrelation: Consequences of using OLS in the presence of Autocorrelation; Detection of Autocorrelation: Graphical Methods, The Runs Test, Durbin- Watson Test; Correcting for Autocorrelation: The Method of Generalized Least Squares.

**Unit 4: Model Specification [ 10 Lectures]**

- Types of Specification Errors: Omission of a relevant variable; Inclusion of an irrelevant variable, Functional form misspecification
- Tests of specification errors;
- Model Selection Criteria:  $R^2$ ; Adjusted  $R^2$ ; Akaike Information Criterion; Schwarz Information Criterion

CIA 1: MCQs

CIA 2: Project

**References:**

1. Chris Brooks, Introductory Econometrics for Finance, Cambridge University Press, Second Edition (2008).
2. Christopher Dougherty, Introductory Econometrics, Oxford University Press, Fourth Edition (2011).
3. G.S. Maddala, Introduction to Econometrics, Macmillan Publishing, Second Edition (1992)
4. Gujarati, Damodar and Sangeetha, Basic Econometrics, McGraw Hill, Fifth Edition (2011)
5. James Stock and Mark Watson, Introduction to Econometrics, Pearson, Third Edition (2011)
6. Jan Kmenta, Elements of Econometrics, Macmillan Publishing, Second Edition (1986)
7. Jeffrey Wooldridge, Introductory Econometrics, Cengage Learning, Fourth Edition (2009)
8. Marno Verbeek, A Guide to Modern Econometrics, John Wiley, Second Edition (2004)
9. Michael Intriligator, Econometrics Models, Techniques and Applications, Prentice Hall, Second Edition (1996)
10. Ronald Wonnacott and Thomas Wonnacott, Econometrics, John Wiley, Second Edition (1979)

**SYBA**

**Course: AAC0401**

**TITLE: ELEMENTARY MATHEMATICAL TECHNIQUES**

**Learning Objective:**

1. Understand basic mathematical techniques required for building economic models.
2. Apply mathematical tools to find solutions to economic problems.
3. Formulate Linear Programming Problems for economic and business problems.
4. Solve Linear Programming Problems graphically and iteratively.

**Number of Lectures: 60**

**Unit 1: Matrix Algebra**

**[20 Lectures]**

- Matrix operations
- Transitional Probability Matrix
- Encoding and Decoding Matrix
- Input-Output Analysis.

**Unit 2: Linear Programming Problem**

**[20 Lectures]**

- LPP: Assignment Problem, Production Planning and Personnel Scheduling Problem
- Interpretation of Dual Variables
- Solution of Linear Programming Problem: Graphical Method and Simplex Method
- Basic Feasible Solution of a Transportation Problem: North-West Corner Rule, Minimum Cost Rule, Vogel's Approximation Rule.

**Unit 3: Elementary Calculus and Applications**

**[20 Lectures]**

- Limits and Derivatives
- Applications: Optimisation; Simple and Compound Interest; Continuous Compounding; Discounting.

CIA 1: MCQs

CIA 2: MCQs

**Basic Reference:**

Borwankar Pratibha, Mathematical Techniques for Economics, Sheth Publishers.

**Additional Reference:**

Saul I.Gass, An Illustrated Guide to Linear Programming Problem(2013).