Techno India University, WB

2-Year M. Sc Economics Curriculum and Syllabus, TIU, WB Second Semester

Course Code	Course Title	Contact Hrs. / Week			Credit
		L	T	P	
TIU-PEM-T102	Microeconomics II	3	1		3
TIU-PEM-T104	Macroeconomics II	3	1		3
TIU-PEM-T106	Econometric Methods II	3	1		3
TIU-PEM-T108	Statistics II	3	1		3
TIU-PEM-T110	Public Economics	3	1		3
TIU-PEN-S101	Career Advancement and Skill Development	3			3
TIU-PEM-T112	Computer Fundamentals and Application Theory			2	2
TIU-PEM-L114	Computer Fundamentals and Application Lab			2	2
Total Credit					22

Microeconomics II

1. Game Theory-
   a. Description of a game (Examples of Matching pennies, The Prisoner's Dilemma, Cournot Duopoly, Bertrand Duopoly)
   b. Economic modeling of strategic choices
   c. Solution concepts (pure and mixed strategies)
   d. Repeated games (Example of maintaining a cartel)
   e. Dominant Strategies, elimination of dominated strategies
   f. Sequential games, repeated games and sub game perfection
   g. Games with incomplete information
   h. Bayes-Nash equilibrium

2. Principal Agent Models: Hidden Action and Hidden Information

Suggested Readings

1. Mas-Colell, A., M. Whinston and J Green: Microeconomic Theory, Oxford University Press, 1995.
2. Hal R. Varian: Microeconomic Analysis, third edition, Viva-Norton Student Edition.
3. Laffont and Martimort: Theory of Incentives: The Principal Agent Model, Princeton University Press, 2001.
4. Bolton and Dewatripont: Contract Theory, the MIT Press, 2005.
5. Fudenberg and Tirole: Game Theory, The MIT Press, 1991.
6. Gibbons, R.: Game Theory for Applied Economists, Princeton University Press, 1992.

7. Aliprantis, C. D. and S. K. Chakraborti, Games and Decision Making, Oxford University Press, 2000.
8. Osborn-Introduction to Game Theory.
9. Prajit Dutta- Strategies and Games.

Macroeconomics II

1. Basic Infinite Horizon Models
Ramsey Problem: Command Economy, decentralized economy, dynamic efficiency- Government in the decentralized economy

2. Overlapping Generations Model
OLG with production: two period lives, dynamic inefficiency and altruism. Social Security models under OLG.

3. Modern Theory of Growth
Dissatisfaction with neoclassical theory- One sector models of endogenous growth: the AK model- Endogenous growth and human capital formation: the Lucas model- Endogenous growth and R&D- Romer model

Suggested Readings

1. Blanchard, O.J. and Fischer, S.(1989). Lectures on Macroeconomics, Prentice Hall of India
2. Barro, R.J. and Sala-i-Martin, X(2004), Economic Growth, Prentice Hall of India
3. Solow, R. (2000), Growth Theory: An Exposition, New York, Oxford University Press
4. Romer, David (1996). Advanced Macroeconomics. N.Y.: McGraw Hill.

Econometric Methods II

1. Logit and Probit Models
2. Simultaneous Equations System: Structural and Reduced Form Equations, Identification Problem – Rank and Order Conditions, Estimation – Indirect Least Squares, Instrumental Variables Method and Two Stage Least Squares • Illustrative Examples
3. Introduction to Panel Data Models
4. An introduction to Time Series Analysis: AR, MA, ARMA and ARIMA models. Box-Jenkins approach, Concept of stationarity, Distinction between TSP and DSP, Unit root test, co-integration and error correction-Engle Granger Causality

Suggested Readings

1. D. Gujarati, D. C. Porter and M. Pal: Basic Econometrics, 6th Edition, McGraw Hill, 2020.
2. Judge, Hill, Griffiths, Lütkepohl, Lee, Introduction to the Theory and Practice of Econometrics.
3. J. W. Wooldridge: Econometric Analysis of Cross section and Panel data.
4. G.S. Maddala: Introduction to Econometrics, John Wiley & Sons Ltd, 2009.
5. Jan Kmenta (1991): Elements of Econometrics, Macmillan Publishing Company.
6. Johnston and Dinardo: Econometrics.
7. Enders: Time series Econometrics.
1. A Collin Cameron and Pravin K Trevedi (2005): Micro Econometric Methods and Applications, Cambridge University Press.

Statistics II

1. Bivariate Data: Discrete and continuous type, scatter diagram, correlation and regression, LS estimation of regression models, Rank correlation, Bivariate frequency distribution and Bivariate probability distribution, Marginal and conditional distribution, Conditional expectation, Bivariate normal distribution.

2. Random Sampling**:** Techniques of drawing random samples; Theory and methods of simple random sampling, stratified sampling, systematic sampling, varying probability sampling, multistage sampling.

3. Estimation:

a. Point estimation: Unbiasedness, Consistency, Efficiency and Sufficiency, Methods of point estimation – Method of moments, Method of MLE and Method of LSE
b. Interval estimation

4. Testing of Hypothesis

(i) Type-I and Type-2 errors, Z test, t test, Chi-square test, F test
(ii) ANOVA
(iii) Non-parametric tests for Goodness of fit, independence and homogeneity

Suggested Readings

1. Rohatgi, V. K. and Saleh, A.K. Md. E. (2009): An Introduction to Probability and Statistics. 2ndEdn. (Reprint) John Wiley and Sons.
2. Mood A.M, Graybill F.A. and Boes D.C, Introduction to the Theory of Statistics, McGraw Hill Education, Third Edition, 2017.
3. G S Maddala (2003), Introduction to Econometrics, Macmillan, 3rd Edition.
4. D. Gujarati, D. C. Porter and M. Pal: Basic Econometrics, 6th Edition, McGraw Hill, 2020.
5. Wooldridge, J: Introductory Econometrics- Modern Approach, South-Western College Publishing, 1999.

6. Tacq, J: Multivariate Analysis Techniques in Social Science Research, Sage International, 1997.
7. Hamilton, L.C. (2004): Statistics with STATA8, Pacific Grove: Duxbury Press.

Public Economics

1. A brief introduction to the theory of public economics.
2. Role of the government in the economy, Public, private and merit goods, Market failure and government failure.
3. Provision of public goods, demand revealing mechanisms.
4. Fiscal policy, role in stabilization, growth and distribution, Keynesian and New classical approaches, Structure and growth of public expenditure.
5. Problem of social choice, contributions of Arrow and Sen.
6. Theory of regulation, Economic theory of democracy.
7. Disinvestment and privatization.
8. Models of bureaucracy, rent seeking activities.
9. Theory of optimal taxation and tax reform, incidence of taxation
10. Analysis of public debt.
11. Fiscal federalism

Suggested Readings

1. Atkinson, A. and J. Stiglitz : Lectures on Public Economics, MIT Press, 1980
2. S. Mundle (ed) [2000]: Public Finance: Policy Issues for India, OUP
3. A . Bagchi(ed) [2005]: Readings in Public Finance, OUP
4. Srivastava(ed) Fiscal Federalism in India
5. Musgrave and Musgrave: Public Finance in Theory and Practice, 5th Edition

CASD

1. Comprehension: Listening and Reading comprehension –Note taking, Reviewing, Summarising, Interpreting, Paraphrasing , Précis Writing.

2. Book Report –Herein the students will be required to read and submit a report of a book (Literary or non-literary) of their own choice.

3. Extempore speech, classroom presentations.

Computer Fundamentals and Application (Theory and Lab)

1. Introduction to problem solving techniques- Algorithm, and Flowchart for problem solving with Sequential Logic Structure, Decisions and Loops.

2. Introduction to C Programming- Features of C and its Basic Structure, Simple C programs, Constants, Integer Constants, Real Constants, Character Constants, String Constants, Backslash Character Constants, Concept of an Integer and Variable, Rules for naming Variables and assigning values to variables.

3. Operators and Expressions- Arithmetic Operators, Unary Operators, Relational and Logical Operators, The Conditional Operator, Library Functions, Bitwise Operators, The Increment and Decrement Operators, The Size of Operator, Precedence of operators.

4. Data Types and Input/Output Operators-Floating-point Numbers, Converting Integers to Floating-point and vice-versa, Mixed-mode Expressions, The type cast Operator, The type char, Keywords, Character Input and Output, Formatted input and output.

5. Control Statements and Decision Making- The goto statement, The if statement, The if-else statement, Nesting of if statements, The conditional expression, The switch statement, The while loop, The do…while loop, The for loop, The nesting of for loops, The break statement and continue statement.

6. Arrays and Strings- One Dimensional Arrays, Passing Arrays to Functions, Multidimensional Arrays, Strings.

7. Pointers-Basics of Pointers, Pointers and One-dimensional Arrays, Pointer Arithmetic, Pointer Subtraction and Comparison, Similarities between Pointers and One-dimensional Arrays. Null pointers, Pointers and Strings, Pointers and two-dimensional arrays, Arrays of Pointers.

8. Structures and Unions-Basics of Structures, Arrays of Structures, Pointers to Structures, Self-referential Structures, Unions.

9. Functions: Function Philosophy, Function Basics, Function Prototypes, and Passing Parameters: Passing Parameter by value and Passing Parameter by reference, passing string to function, Passing array to function, Structures and Functions Recursion.

10. Storage Classes: Storage Classes and Visibility, Automatic or local variables, Global variables, Static variables, External variables.

11. The Preprocessor-File Inclusion, Macro Definition and Substitution, Macros with Arguments, Nesting of Macros, Conditional Compilation.

12. File Management: Defining and Opening a file, Closing Files, Input/output Operations on Files, Predefined Streams, Error Handling during I/O Operations, Random Access to Files, Command Line Arguments.