Department of Economics
Vidyasagar University
Midnapore-721102, West Bengal

The SYLLABUS for POST-GRADUATE Programme in

Economics

Under Curriculum and Credit Framework of Post Graduate Programme (NEP 2020)

[w.e.f. 2025-26]

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Programme Outcomes (POs)

PO1	**Disciplinary Knowledge** – Demonstrate comprehensive knowledge of core and applied areas in economics, including theory, quantitative methods, and real-world applications.
PO2	**Analytical and Quantitative Skills** – Analyse and interpret economic data using statistical, econometric, and computational tools.
PO3	**Research Competence** – Design, conduct, and present independent and ethical research addressing contemporary economic issues.
PO4	**Policy Analysis** – Critically evaluate economic policies and develop evidence-based recommendations.
PO5	**Communication Skills** – Effectively present economic concepts and research findings in written, oral, and visual forms to diverse audiences.
PO6	**Interdisciplinary Perspective** – Integrate insights from related disciplines to address complex socio-economic challenges at local, national, and global levels.
PO7	**Lifelong Learning and Adaptability** – Continuously update skills in response to evolving economic, technological, and societal trends.
PO8	**Employability and Professional Development** – Apply economics training to careers in academia, research, policy analysis, finance, and entrepreneurship.

Programme Specific Outcomes (PSOs)

PSO1	**Advanced Economic Analysis:** Apply advanced economies theories to critically analyze individual, firm, market, and economy-wide behaviours, with an ability to interpret complex economic phenomena and real world socio-economic issues.
PSO2	**Driven Research & Empirical Modelling:** Conduct robust empirical research using econometric and statistical software (Stata, R, Python, SPSS, EViews, Excel), perform data visualization and analytical modelling, and interpret results for academic industry and policy relevance.
PSO3	**Policy Formulation & Evaluation:** Assess, formulate, and evaluate public policies in sectors such as agriculture, health, finance, environment, labour markets, social protection, etc. focusing on evidence-based solutions for global, national and regional development.
PSO4	**Application of Digital & AI Tools in Economics:** Integrate digital technologies, data analytics, AI-based tools, and financial analytics to support economic research, forecasting, financial decision-making, and innovation in public and private sectors.
PSO5	**Socio-Economic Field Engagement, Internship & Case-Based Learning:** Apply field-based learning, participatory techniques, and case studies to understand grassroots economic realities, livelihoods, and development challenges.
PSO6	**Industry, Research, and Entrepreneurship Readiness:** Prepare for professional roles in academia, research institutions, government, banking and finance, corporate analytics, international development, and entrepreneurship through internship, dissertation, innovation, and incubation exposure.

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COURSE STRUCTURE OF M.A./M. Sc. IN ECONOMICS

SEM	Course Type	Course Code	Course Title	Credit	L-T-P	Marks		
						CA	ESE	TOTAL
I	DSC	ECODSC501	Statistics and Basic Econometrics	4	3-1-0	10	40	50
	DSC	ECODSC502	Elements of Advanced Economic Theory	4	3-1-0	10	40	50
	SEC	ECOSEC503	Statistical Computing for Economics (Practical)	4	0-0-4	--	50	50
	SEC	ECOSEC504	Data Analytics and Research Methodology (Theory + Practical)	4	2-0-2	10	40	50
	DSE	ECODSE505	Health Economics and Health Informatics OR Agricultural Economics	4	3-1-0	10	40	50
	IKS	ECOIKS506	Indian Knowledge System (IKS)	2	2-0-0	5	20	25
		ECOLPV507	Life and Philosophy of Vidyasagar	-	Compulsory Non-credit	–	–	-
Semester-I Total				**22**				**275**
II	DSC	ECODSC551	Environmental and Resource Economics	4	3-1-0	10	40	50
	DSE	ECODSE552	Contemporary Issues of the Indian Economy OR History of Economic Thoughts	4	3-1-0	10	40	50
	DSE	ECODSE553	Quantitative Economics OR Operations Research	4	3-1-0	10	40	50
	DSE	ECODSE554	Development Economics: Theory and Experiences OR	4	3-1-0	10	40	50

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			Political Economy					
DSC	ECODSC555		Financial Analytics	4	3-1-0	10	40	50
SKE	ECOSKE556		Field Visit / Industry Visit / Case Study / Hands-on Practical with Seminar	2	0-0-2	5	20	25
			Semester-II Total	**22**				**275**
			TOTAL of YEAR-1	*44*				*550*

Notes: DSC = Discipline Specific Core, DSE = Discipline Specific Elective, SKE = Skill Enhanced; L-T-P = Lecture-Tutorial-Practical

SEM	Course Type	Course Code	Course Title	Credit	L-T-P	Marks		
						CA	ESE	TOTAL
III	DSC	ECODSC601	Advanced Microeconomic Theory	4	3-1-0	10	40	50
	DSC	ECODSC602	Advanced Macroeconomic Theory and Growth	4	3-1-0	10	40	50
	DSC	ECODSCSP603	Econometrics I OR International Economics and Finance I	4	3-1-0	10	40	50
	DSC	ECODSCSP604	Econometrics II OR International Economics and Finance II	4	3-1-0	10	40	50
	DSE	ECODSE605	Gender Studies and Human Development OR Advanced Data Analytics with Python and R (Theory + Practical)	4	3-1-0	10	40	50
	SKE	ECOSKE606	Social Service / Community Engagement with Seminar	2	0-0-2	5	20	25
			Semester-III Total	**22**				**275**
IV	DSC	ECODSCSP651	Econometrics III OR International Economics and Finance III	4	3-1-0	10	40	50

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DSC	ECODSCSP652	Econometrics IV OR International Economics and Finance IV	4	3-1-0	10	40	50
SKE	ECOSKE653	Dissertation with Seminar (8 credits)	8	0-0-8	--	100	100
SKE	ECOSKE654	Internship / Capstone Project /Applied Field or Industry Project/Innovation & Incubation/ Entrepreneurship/ Start-up Proposal or Practice with Seminar	4	0-0-4	10	40	50
SKE	ECODSC655	AI Tools for Research and Learning in Economics (Theory & Practical)	2	1-0-1	5	20	25
		Semester-IV Total	**22**				**275**
		TOTAL of YEAR-2	*44*				*550*
		Total of 2 Years PG Programme	**88**				**1100**

Notes: DSC = Discipline Specific Core, DSCSP = Discipline Specific Core (Special Paper), DSE = Discipline Specific Elective, SKE = Skill Enhanced; L-T-P = Lecture-Tutorial-Practical

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Semester I

ECODSC501: Statistics and Basic Econometrics

50 Marks   4 credits

Course Outcome (COs):

Upon successful completion of this course, students will be able to:

CO1: Explain key concepts of sampling techniques, sampling distributions, and measures of statistical inference.

CO2: Apply estimation and hypothesis testing procedures including Chi–square tests and Analysis of Variance (ANOVA) for empirical investigation.

CO3: Formulate and estimate simple and multiple linear regression models using OLS, and interpret their statistical properties.

CO4: Diagnose econometric problems such as multicollinearity, heteroscedasticity, and autocorrelation, and suggest appropriate remedial strategies.

CO5: Use dummy variable techniques for qualitative data analysis and interpret their applications in regression models.

CO6: Demonstrate understanding of structural and reduced-form simultaneous equation models and explain identification issues.

Group –A: **25 Marks (Written -20, Internal Assessment -05)**

1. Sampling and Sampling Methods, Sampling distributions of statistics.
2. An Introduction to Classical Inference: Estimation and Hypotheses Testing; point and interval estimation; Tests of significance.
3. Frequency χ^2: Goodness of Fit, Test of Homogeneity, Test of Independence.
4. Analysis of Variance: One way & Two-way analysis.
5. Two variable linear models- the linear specification;   basic assumptions;   least square estimators and their properties; tests of goodness of fit; inference in the least square model

References:

A. Goon, Gupta and Dasgupta- Fundamentals of Statistics
B. Mathai A. M &Rathie P. N- Probability & Statistics
C. Maddala, G.S. Introduction to econometrics
D. Kmenta, J. Elements of Econometrics e) Johnston, J. Econometric Methods
E. Gujarati, D.N. Basic Econometrics

Group –B: **25 Marks (Written -20, Internal Assessment -05)**

1. General linear model: OLS Estimators and their properties; tests of goodness of fit; inference in the OLS model,

2. Some econometric problems:

3. A. Multicollinearity, heteroscedasticity, and auto-correlation (basic concepts, problems and remedial measures only)

B. Dummy variables- Nature and use of dummy variables; case of dependent dummy variables, Dummy variable trap.

4. Simultaneous equations Models: Structural and Reduced form equations; identification problems.

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References:

A. Goon, Gupta and Dasgupta- Fundamentals of Statistics
B. Mathai A. M &Rathie P. N- Probability & Statistics
C. Maddala, G.S. Introduction to econometrics
D. Johnston, J. Econometric Methods
E. Gujarati, D.N. Basic Econometrics

CO–PO–PSO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	1	1	1	2	2	3	2	1	1	1	2
CO2	3	3	2	2	2	1	2	3	3	3	2	2	1	3
CO3	3	3	3	2	2	2	2	3	3	3	2	2	1	3
CO4	2	3	3	2	1	2	2	3	3	3	2	2	1	3
CO5	2	3	2	2	2	1	2	3	3	3	2	2	1	2
CO6	3	2	3	2	1	2	2	2	3	3	2	1	1	3

Note: Scale: 3 = High, 2 = Moderate, 1 = Low.

ECODSC502: Elements of Advanced Economic Theory

50 Marks   4 credits

Course Outcome (COs):

Upon successful completion of this course, students will be able to:

CO1: Apply concepts of welfare economics, general equilibrium, and intertemporal choice to analyze individual, firm, and market behavior.

CO2: Explain the nature of public goods, principles of taxation, and public debt, and evaluate their implications for efficiency and equity.

CO3: Analyze macroeconomic models, including New Keynesian and classical frameworks, and evaluate their policy implications.

CO4: Examine and critique international trade theories, extensions, and structuralist perspectives using historical and contemporary evidence.

CO5: Interpret empirical puzzles in macroeconomics and international trade and explain how they shaped theoretical developments.

Group –A: Microeconomics and Public finance   25 Marks (Written -20, Internal Assessment -05)

1. Welfare Economics and General Equilibrium Analysis: The compensation criteria; The social welfare function; Theory of the second best; Interdependent utilities; Applied welfare economics; Partial and general equilibrium analysis.

2. Intertemporal Choice: Discounting and present value; Choice of investment projects; Intertemporal consumption decision; intertemporal production decision; Interest rate determination.

3. Theory of Public Goods : Market failure in provision of public goods; Optimal provision conditions; Lindahl equilibrium and voluntary exchange models; Overview of voting equilibrium in collective decision-making.

4. Principles and Incidence of Taxation – Classification of taxes; Canons of taxation; Benefit, equal sacrifice, and ability-to-pay principles; Concepts of tax incidence and shifting; Economic effects of taxation on income distribution, work effort, and savings.

5. Public Debt – Sources of public borrowing: internal and external; Effects of public debt on income distribution, Burden of public debt and its implications.

References:

A. Microeconomics: Theory and Applications. (1989). G. S. Maddala, Ellen M. Miller. McGraw-Hill, University of California, Berkeley. 0070394156, 9780070394155.
B. Varian, H. R., & Varian, H. R. (1992). *Microeconomic analysis* (Vol. 3). New York: Norton.
C. Ghosh, A. and Ghosh, C: Economics of the Public Sector, PHI.
D. Mundle, S. (Ed.): Public Finance: Policy Issues for India, Oxford.
E. Rakshit, M. (1991), "The Macroeconomic Adjustment Programme: A Critique", EPW, August 23, pp. 1977-88.
F. Rakshit, M. (1994), "Money and Public Finance under Structural Adjustment: The Indian Experience", EPW, April 16-23, pp. 923-35.
G. Rakshit, M. (1995), "Puzzles in Budgetary Policies", EPW, May 6-13, pp. 1061-66.
H. Musgrave, R. A., & Musgrave, P. B. (1989). *Public Finance in Theory and Practice* (5th ed.). McGraw-Hill.
I. Stiglitz, J. E. (2000). *Economics of the Public Sector* (3rd ed.). W. W. Norton & Company.
J. Ghosh, A., & Ghosh, C. (2014). *Public Finance* (2nd rev. ed.). Prentice Hall India.
K. Due, J. F., & Friedlaender, A. F. (1994). *Government Finance: Economics of the Public Sector*. AITBS Publishers.
L. Bagchi, A. (Ed.) (2005). *Readings in Public Finance*. Oxford University Press.
M. Chelliah, R. J. (Ed.) (2009). *Towards Sustainable Growth: Essays in Fiscal Policy*. Oxford University Press.

Group –B: Macro Economic Theory and International Trade   **25 Marks**
(Written -20, Internal Assessment -05)

1. Review of social accounting, macroeconomic identities and basics of demand and supply side macroeconomic theories.

2. A Brief overview of evolution of consensus macroeconomics and developments thereafter.

3. New Keynesian macro model: Sticky Wage, Sticky Price, Credit Rationing.

4. Review of classical trade theory in Joan's General equilibrium framework: Comparative Advantage revisited: Jones's geometric representation and extensions of the 2×2×2 model; Specific Factors and the role of immobile inputs in trade outcomes; Trade, distribution, and the Stolper-Samuelson theorem in general equilibrium.

5. Critical Readings in Trade Theory: Comparative Advantage and its Limits: Ricardo's logic and critiques (Utsa Patnaik, unequal exchange debates, Prebisch's structuralist perspective); Why formal trade theory emerged in the 19th century: From mercantilism to classical economics; Corn Law debates and the industrial capitalist context.

References:

A. Mankiw, N.G. (1990), "A Quick Refresher Course in Macroeconomics", Journal of Economic Literature, American Economic Association, 28(4), 1645-60, December.
B. Ghosh, C. and Ghosh, A. (20116), Macroeconomics, PHI.
C. Chang, Ha-Joon (2002). *Kicking Away the Ladder: Development Strategy in Historical Perspective.* Anthem Press.

D. Emmanuel, Arghiri (1972). *Unequal Exchange: A Study of the Imperialism of Trade.* Monthly Review Press.

E. Findlay, Ronald & O'Rourke, Kevin H. (2007). *Power and Plenty: Trade, War, and the World Economy in the Second Millennium.* Princeton University Press.

F. Jones, R.W. (1965). *The Structure of Simple General Equilibrium Models*. *Journal of Political Economy*, 73(6), 557–572.

G. Patnaik, Utsa. "Ricardo's fallacy: Mutual benefit from trade based on comparative costs and specialisation?" The pioneers of development economics: Great economists on development (2005): 31-41.

H. Prebisch, Raúl (1950). *The Economic Development of Latin America and Its Principal Problems.* United Nations, ECLA.

I. Ricardo, David (1817). *On the Principles of Political Economy and Taxation.* London: John Murray.

CO–PO–PSO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	1	2	2	2	3	2	2	1	1	2
CO2	3	2	2	3	2	2	2	2	3	2	3	1	1	2
CO3	3	2	3	3	2	2	2	3	3	3	2	1	3
CO4	3	2	2	3	2	3	2	3	3	2	3	1	1	2
CO5	2	2	3	2	2	2	2	2	3	2	2	1	1	2

Note: Scale: 3 = High, 2 = Moderate, 1 = Low.

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ECOSEC503: Statistical Computing for Economics (Practical)

50 Marks   4 credits

Course Outcomes (COs):

Upon successful completion of this course, students will be able to:

CO1: Apply MS Excel for data management, descriptive statistics, data visualization, and basic hypothesis testing.

CO2: Perform correlation and regression analysis using Excel, SPSS, Stata, and EViews.

CO3: Import, organise, and summarise economic data using statistical software packages.

CO4: Interpret and present statistical outputs for basic economic analysis in a professional format.

Syllabus Outline

1. Use of Computers through Programming: Computer Languages (FORTRAN, C, etc.); Solving simple problems: sorting, calculating arithmetic mean, standard deviation, correlation and simple regression, etc.

2. Data Management and Analysis in MS Excel: Data formatting, and cleaning; Descriptive Statistics, VLOOKUP, HLOOKUP, etc.; Data visualization: charts, histograms, scatterplots, and trendlines; Pivot tables and pivot charts; Application of Analysis ToolPak - Hypothesis testing (t-test, z-test, F-test, Chi-square test), One-way ANOVA in Excel, Correlation and simple regression analysis in Excel.

3. Introduction to SPSS for Economics: SPSS interface, Importing and exporting datasets; Generating descriptive statistics and frequency tables; Producing correlation and regression outputs; Basic hypothesis testing and one-way ANOVA.

4. Introduction to Stata: Stata interface and command syntax; Data input, import, and labelling; Generating descriptive statistics; Basic correlation and regression commands; Simple hypothesis testing and ANOVA.

5. Introduction to EViews: EViews interface and workfile creation; Data entry and importing datasets.; Descriptive statistics and correlation analysis; Running regression models; Basic hypothesis testing.

References:
a) McCormick, K, et al (2017), SPSS Statistics for Data Analysis and Visualzation, John Willy and Sons
b) M. Pal, Fortran 77, Asian Books Pvt. Ltd, 2003
c) Balagurusami E, Programming in ANSI C, Tata McGraw Hill, 2002.
d) Sankar Kumar Bhaumik(2015). "Principles of Econometrics: A Modern Approach Using EViews", OUP, India.
e) Bajpai, N. (2013). *MS Excel for Business Statistics*. Pearson Education.
f) Acock, A. C. (2018). *A Gentle Introduction to Stata* (7th ed.). Stata Press.
g) Brooks, C. (2014). *Introductory Econometrics for Finance* (EViews Applications). Cambridge University Press.
h) Landau, S., & Everitt, B. S. (2004). *A Handbook of Statistical Analyses using SPSS*. Chapman & Hall/CRC.

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    i)   Kohler, U., & Kreuter, F. (2012). *Data Analysis Using Stata*. Stata Press.

    j)   Levine, D. M., Stephan, D. F., Szabat, K. A., & Czinkota, M. R. (2017). *Statistics for Managers using Microsoft Excel* (8th ed.). Pearson.

CO–PO–PSO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	2	1	2	1	2	3	2	3	1	3	1	3
CO2	2	3	2	2	2	1	2	3	2	3	2	3	1	3
CO3	2	3	2	1	2	1	2	3	2	3	1	3	1	3
CO4	2	3	2	2	3	1	2	3	2	3	2	3	1	3

Note: Scale: 3 = High, 2 = Moderate, 1 = Low.

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ECOSEC504: Data Analytics and Research Methodology (Theory + Practical)

50 Marks   **4 credits** (2 Theory + 2 Practical)

Course Outcomes

After completing this course, students will be able to:

CO1: Formulate research problems and hypotheses; apply appropriate sampling and data collection methods (including FGD & PRA).
CO2: Conduct literature reviews and identify research gaps.
CO3: Use descriptive and inferential statistics for economic data analysis.
CO4: Perform econometric and basic predictive analytics using software tools (R/Python/SPSS/Stata/Excel).
CO5: Prepare research reports and policy outputs following ethical and publication standards.

1: Introduction to Research Methodology in Economics & Data Analytics *(T)*

· Overview of research methodology: quantitative, qualitative and mixed

● Research process: steps from problem identification to report writing.

· Role of data analytics in policy and business decision-making

● Overview of data types: primary vs. secondary, cross-sectional, time series, panel data.

2: Literature Review, Research Design, and Data Collection *(T)*

● Systematic Review of Literature
● Research problem formulation, objectives, and hypothesis setting.
● Sampling methods: probability and non-probability, sample size determination, applications in Indian context.
● Data collection: survey, questionnaire design, interviews, Focus Group Discussion(FGD), Participatory Rural Appraisal (PRA).
● Secondary data sources: NSSO, NFHS, RBI, MOSPI, World Bank, UN databases.

3: Inferential Statistics and Hypothesis Testing with R, Python, Stata, EViews (any three) *(T+P)*

● Probability distributions: Normal, t, Chi-square, F.
● Sampling distribution and Central Limit Theorem.
● Hypothesis testing: concept, errors, p-values, confidence intervals.
● Parametric tests: t-test, ANOVA.
● Non-parametric tests: Chi-square test, Mann-Whitney U, Kruskal-Wallis.
● Correlation and simple linear regression.

4: Econometric and Predictive Analytics with R, Python, Stata, EViews (any three)*(T+P)*

● Multiple regression: assumptions, estimation, interpretation, diagnostics.
● Dummy variables and interaction effects.

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- Basics of time series analysis: trend, seasonality, stationarity.
- Introduction to forecasting methods.
- Overview of machine learning in economics (conceptual).

5: Research Ethics and Report Writing *(T)*

- **Research Ethics**: responsibilities of researchers; intellectual honesty; avoiding fabrication, falsification, and plagiarism (FFP)
- **Plagiarism Detection Tools**: Turnitin/Urkund.
- **Databases and Research Metrics**: citation databases (Scopus, Web of Science), Impact Factor, h-index, i10-index, altmetrics.
- **Referencing styles**: APA, MLA, Chicago; in-text citation and bibliography.
- Structure of research reports, policy briefs, and academic papers

Assessment Structure

- **Theory (25 marks)**: Internal Assessment and End-semester examination.
- **Practical (25 marks)**: Lab assignments, project work, and viva.

References:

A. Kothari, C. R., & Garg, G. (2019). *Research Methodology: Methods and Techniques*. New Age International.
B. Gujarati, D. N., & Porter, D. C. (2017). *Basic Econometrics*. McGraw-Hill.
C. Wooldridge, J. M. (2020). *Introductory Econometrics: A Modern Approach*. Cengage.
D. James, G., Witten, D., Hastie, T., & Tibshirani, R. (2021). *An Introduction to Statistical Learning with Applications in R*. Springer.
E. Field, A. (2018). *Discovering Statistics Using SPSS*. Sage.
F. Cooper, D. & Schindler, P. (2014). *Business Research Methods*. McGraw-Hill.
G. Wilkinson, T. S., & Bhandarkar, P. L. (2013). *Methodology and Techniques of Social Research*. Himalaya

CO–PO–PSO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	2	2	3	2	2	1	3	2
CO2	3	2	2	2	2	2	2	2	3	2	2	1	3	2
CO3	3	3	2	2	2	1	2	3	3	3	2	3	1	3
CO4	3	3	3	2	2	1	2	3	3	3	2	3	1	3
CO5	2	2	2	2	3	2	2	3	2	2	2	2	2	3

Note: Scale: 3 = High, 2 = Moderate, 1 = Low.

ECODSE505: Health Economics and Health Informatics

50 Marks   5 credits

Course Outcome (COs):

Upon successful completion of this course, students will be able to:

CO1: Explain core concepts of health and public health, analyze determinants of health, and interpret health indicators such as mortality, morbidity, and disability.

CO2: Apply epidemiological tools and metrics and interpret global health measures including DALYs and other burden-of-disease indicators.

CO3: Critically evaluate the implications of demographic transitions, population aging, and emerging health service needs.

CO4: Analyze integrated health case studies in Indian and global contexts relating to health systems, policies, and public health programs.

CO5: Describe principles of health informatics, differentiate types of healthcare data, and apply foundational data analysis techniques in public health.

Group –A: Health Economics and Health Issues in Indian Economy   25 Marks (Written - 20, Internal Assessment -05)

1) Introduction to Health Economics, Scope, Concept of Health studies; Difference between health and health care, Equity and Efficiency; Socio-economic determinants of health; Barriers to health equity.

2) Significance and role of population, some important demographic concepts like mortality rates, birth rate, life expectancy, etc.

3) Health Infrastructure, Health care financing;

4) Healthcare and role of NGOs; Preventive and Curative Health care.; Health policy.

5) Health Sector in India: An Overview of Health Outcomes; health systems; health financing

References:

A. Bhattacharya, J., Hyde, T., Tu, P. (2014). Health economics, Palgrave Macmillan.

B. Utpal Kumar De, at.el.: Issues on Health and Healthcare in India, Springer,2018.

C. World Development Report, Investing in Health, The World Bank, 1993

D. Ronald G., Ehrenberg and Robert S., Smith, Modern Labor Economics: Theory and Public Policy, Addison Wesley, **200**

Group-B Population Health, Epidemiology and Health Informatics   25 Marks (Written -20, Internal Assessment -05)

1). Foundations of Public Health: Concept of Health, Determinants of health, Indicators of Health-mortality, morbidity, disability, Evolution of public health.

2). Introduction to Epidemiology: Use of epidemiology, disease frequency, distribution and determinants, tools of measurement in epidemiology, incidence, prevalence, risk factors, DALYs, and global health metrics.

3). Population–Health: Ageing Populations & Epidemiological Transition, Fertility Decline & Maternal and Child Health, Youth Bulges Theory. Market for elderly care, Application of AI in elderly care.

4). Integrated Case Studies: India and global contexts—linking demography, health services, economic progress: Universal Health Coverage, NHM, PHCs, ASHAs.

5). Health Informatics: Overview of health informatics, Health care data, information and knowledge, Health care data analysis. Public Health Informatics.

References:

A. Andresen, E., & Bouldin, E. D. (Eds.). (2010). *Public health foundations: Concepts and practices*. John Wiley & Sons.

B. Merrill, R. M. (2024). *Introduction to epidemiology*. Jones & Bartlett Learning.

C. McCallum, J. (1997). Health and Ageing: The last phase of the epidemiological transition'. *Ageing and social policy in Australia*, 54-73.

D. McGorry, P., Gunasiri, H., Mei, C., Rice, S., & Gao, C. X. (2025). The youth mental health crisis: analysis and solutions. *Frontiers in Psychiatry*, *15*, 1517533.

E. Ortiz, I., & Cummins, M. (2012). When the global crisis and youth bulge collide: Double the jobs trouble for youth. *Available at SSRN 2029794*.

F. Imhoff, M., Webb, A., & Goldschmidt on behalf of the ESICM, A. (2001). Health informatics. *Intensive care medicine*, *27*(1), 179-186.

G. Hovenga, E. J. (Ed.). (2010). Health informatics: an overview.

CO–PO–PSO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	2	2	3	2	2	1	2	2
CO2	3	2	3	2	2	2	2	2	3	2	3	1	2	2
CO3	3	2	3	3	2	2	2	2	3	2	3	1	2	2
CO4	3	2	3	3	2	2	2	3	2	2	3	2	2	3
CO5	2	3	2	2	2	2	2	3	2	3	2	3	2	3

Note: Scale: 3 = High, 2 = Moderate, 1 = Low.

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ECODSE505: Agricultural Economics

50 Marks   4 credits

Course outcome (COs):

Upon successful completion of this course, students will be able to:

CO1: Understand production, demand, pricing, and marketing dynamics in agriculture while applying theoretical and econometric tools to analyze farmer decision-making under risk and uncertainty.

CO2:Provide insights into productivity growth, farm–nonfarm linkages, and the institutional role of finance, irrigation, and subsidies in agricultural development.

CO3: Critically assess public and private investment impacts on agricultural transformation and policy outcomes.

Group A:

1. Agricultural production function analysis, Agricultural supply response behaviour, Theories of marketable surplus.
2. Demand for agricultural products. Properties of demand functions, Elasticities of demand for agricultural products, Dynamics in demand analysis.
3. Pricing of agricultural products- intertemporal behavior of prices, pricing efficiency, instability in agricultural prices, Futures market.

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4. Agricultural Marketing – Price Spread, Marketing Efficiency, Marketing channels, market infrastructure.

References:

A. Acharya, S. S. (2004). *Agricultural marketing in India* (4th ed.). Oxford & IBH.
B. Acharya, S. S., & Agarwal, N. L. (1994). *Agricultural prices: Analysis and policy*. Oxford & IBH.
C. Barkley, A., & Barkley, P. W. (2016). *Principles of agricultural economics*. Routledge.
D. Colman, D., & Young, T. (1989). Principles of Agricultural Economics: Markets and Prices in Less Developed Countries (Wye Studies in Agricultural and Rural Development). Cambridge University Press.
E. Ghatak, S., & Insergent, K. (1984). *Agriculture and economic development*. Select Book Service Syndicate.
F. Krishna, K. L. (1997). *Econometric applications in India*. Oxford University Press.
G. Schmidt, P. (1985). Frontier production functions. *Econometric Reviews, 4*(2), 289–328. https://doi.org/10.1080/07474938508800094
H. Schofield, N. C. (2021). *Commodity derivatives: Markets and applications*. John Wiley & Sons.
I. Singh, A., Sadhu, A. N., & Singh, J. (2017). *Fundamentals of agricultural economics*. Himalaya Publishing House.
J. World Bank. (1996). *Managing price risks in India's liberalized agriculture: Can futures markets help?* (Report No. 15453-IN). World Bank.

Group: B

1. Econometric Framework for Analyzing Farmers Production Decisions
  -Risk & uncertainty-Measurements and representations
 - Choosing profitable crop production
 - Role of risk behaviour upon choosing modern agricultural practices

2. Total Factor Productivity Growth in Indian Agriculture: Growth Accounting Approach
   - Brief overview of growth theory
   - Calculating the impact of technology and total factor productivity upon growth

3. Farm-Nonfarm Linkages-Theory and empirics
   - Defining farm sector and non-farm sector
   - Interrelationships between the two in line with Lucas Model
   - Roles of factors of production upon expansion or contractions of the agro-sectors using general equilibrium framework

4. Institutional aspects of agricultural development in emerging economies-finance, irrigation and subsidy
   - Analyzing the roles of different institutions upon agricultural transformations
   - Role of finance, irrigation and subsidy upon agri-production

5. Public and Private Investments in Agriculture-Linkage effects from countries' perspectives
   - Defining public capital and private capital
   - Examining linkage effects-forward and backward in relation to agriculture sector

References:

A. Solow, R. M. (1957). Technical Change and the Aggregate Production Function, *Review of Economics and Statistics* 39: 312-20

B. Sasmal, J. (2016). Resources, Technology and Sustainability: An Analytical Perspective on Indian Agriculture, Springer Book

C. Chakrabarti, S., Kundu, A. and Nandi, A. K. (2011).Farm–Non-Farm Linkage in India: A Structuralist Perspective, *Indian Journal of Agricultural Economics*, 66(2)

D. Banerjee, D. & Das, R. C. (2024). Modern Macroeconomics, Routledge, London

E. P. Das (2011). Rural Non-Farm Employment in India

F. Das, R. C., Das, A., & Ray, K. (2018). Examining Forward and Backward Linkages between Public and Private Investments: A Cross-country Analysis. *Review of Market Integration*, *10*(1), 45-75

CO–PO–PSO Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	2	2	2	2	2	1	3	2	3	2	2	2
CO2	3	2	2	2	2	2	1	2	3	3	3	2	2	2
CO3	3	2	3	3	2	2	1	2	2	2	3	3	3	2

Note: Scale: 3 = High, 2 = Moderate, 1 = Low.

ECOIKS506: Indian Knowledge System

To be developed by the Department

DRAFT

ECOLPV507: Life and Philosophy of Vidyasagar

Life and Philosophy of Vidyasagar

Two credits 25 Marks

Section-A

A) **Early Life and Education:** (3 Classes)

1. Birth and Lineage

2. A Journey from Iswar Chandra Bondopadhaya to lswar Chandra Vi dyasagar

B) **Vidyasagar and Indian Education:** (5 Classes)

1. The then Indian education system

2. Vidyasagarian plan tor reformation of Indian cclucaiion- Vidyasagar as teacher, Vidyasagar as writer, planner and reformer of' Indian education.

C) **Vidyasagar and Women Emancipation:** (4 Classers)

1. Introduction ot widow remarriage

2. Struggle to stop child marriage

Section- B

D) **Philanthropist Vidyasagar** (2 Classes)

1. Vidj asagar's philanthropy as narrated by eithers

E) **Vidyasagar :Traditions and Modernity** (6 Classes)

1. Tradition

2. Modernity

3. Vidyasagara as Traditional modemiser

F) **Relevance of Vidyasagarian thoughts and values** (4 Classes)

22

1. Vidyasagar and the then Society of Bengal

2. Lesson for fixture generations

Reference Books:

1) Revisiting Modem lndian Thought : "l'hemes and Perspective.(Ed. Suraiha Kumar Malik and Ankit Tomar), Routledge, New York and Londan. 2022 (First South Asian Edition)

2) Vidyasagar o Bangali Samaj, Dinoy Ghosh. Orient Elacksoan.20 11

3) Amalesh Tripathi: V idyasagar : the Traditional Moderniser , Cambridge University Press,2011

4) Brian A.Hatched(Trans) : V idyasagar : The Li t'e and A fler Lite of Eminent Indian, Rout letlge. New Delhi, 2014

5) Asok Sen : lswar Chandra Vi dyasagar and I lis F\lustre Milestone. Riddhi-lndian, 28 i3eniatola Lane,Ca1-9

6) Binoy Ghosh: Vidyasagar O Bangal i Samaj, Orient H lacksoan, 2011

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ECODSC551: Environmental and Resource Economics

50 Marks   4 credits

Course Outcome (COs):

After completion of this course, the students should be able to

CO1: Understand the key concepts and issues related to environmental economics and resource economics.

CO2: Analyze environmental externalities and apply appropriate methods for the valuation of environmental goods.

CO3: Explain market-based and non-market instruments used for pollution control and environmental policy.

CO4: Evaluate different approaches to sustainable development and their relevance in environmental decision-making.

CO5: Apply knowledge regarding the management of natural resources including renewable, non-renewable, and common property resources.

Group –A: Environmental Economics   25 Marks (Written -20, Internal Assessment -05)

1. Introduction to environmental economics, Economy- Environment Interaction,

Market failure for environmental goods.

2. Optimum Pollution, Coase Theorem , Pigouvian tax.

3. Valuation of environmental goods: Components of total economic value,

Averting Expenditure Method, Travel Cost Method , Hedonic Pricing Method,

Contingent Valuation Method.

4. Instruments for pollution control and their relative effectiveness in LDCs:

Command and Control, Market Based Instruments and Hybrid instruments, Porter

hypothesis, Incentive design under uncertainty.

5. Sustainable Development – Principles and Indicators, Environmental Kuznets Curve

(EKC), SDG Goals.

6. National Income and Environmental Accounting – Green GDP, Adjusted Net Saving, Environmental Asset Accounts.

References:

A. Berck, P., & Helfand, G. (2011). *The economics of the environment (International ed.). Prentice Hall (Addison–Wesley).*

B. Bhattacharya, R. N. (Ed.). (2001). *Environmental economics: An Indian perspective*. Oxford University Press.

C. Hanley, N., Shogren, J. F., & White, B. (2005). *Environmental economics in theory and practice* (revised ed.). Macmillan.

D. Hanley, N., Shogren, J. F., & White, B. (2013). *An introduction to environmental economics* (2nd ed.). Oxford University Press.

E. Harris, J. M., & Roach, B. (2022). Environmental and natural resource economics: A contemporary approach (5th ed.). Routledge.

F. Kolstad, C. D. (2011). *Intermediate environmental economics* (2nd International ed.). Oxford University Press.

G. Pearce, D. W., & Turner, R. K. (1991). Economics of natural resources and the environment. Harvester Wheatsheaf.

H. Sankar, U. (2002). *Environmental economics* (1st ed.). Oxford University Press.

I. Thampapillai, D. J., & Ruth, M. (2024). Environmental economics: Concepts, methods and policies (2nd ed.). Routledge.

Group B: Resource Economics   25 Marks (Written -20, Internal Assessment - 05)

1. Renewable Resources: Growth Curve, The Rate of Exploitation, Costs and Revenue, Preservation Value, Implication of time in the exploitation of renewable resources
2. The Extinction of Renewable Resources: The Problem of Extinction, Open Access and Resource Extinction, Profit Maximization and Extinction, Reasons of Extinction
3. Exhaustible Resources: A Resource Taxonomy, The Fundamental Principle of Exhaustible Resource Use, Resource Scarcity, Resource Prices and Backstop Technology, Monopoly and the Rate of Extraction, Irreversibility and Uncertainty in Environmental Processes
4. Storable, Renewable Resources: Forests and Fisheries: Characterizing Forest Harvesting Decisions- Special Attributes of the Timber Resource, The Biological Dimension, The Economics of Forest Harvesting, Extending the Basic Model. Sources of Inefficiency- Perverse Incentives for the Landowner, Perverse Incentives for Nations. Poverty and Debt; Sustainable Forestry; Public Policy. Fisheries Economics and Management. Water Management and Economics

References:
A. Kolstad C D- Intermediate Environmental Economics, Oxford University Press, Second

B. Edition, 2011.
C. Berck P and G. Helfand, The Economics of the Environment, First Edition, Addison-Wesley, 2011.
D. Hanley N., F. Shogran and B. White, Environmental Economics in Theory and
E. Practice, McMillan, 2004.
F. Hanley N., F. Shogran and B. White, An Introduction to Environmental Economics, OUP, 2004.
G. Pearce D.W. and R.K Turner, Economics of Natural Resources and the
H. Environment, Harvester Wheatsheaf. 1991.
I. Harris, J. M., & Roach, B. (2013). *Environmental and natural resource economics: A contemporary approach*. ME Sharpe.
J. Conrad, J. M. (1999). *Resource economics*. Cambridge University Press.
K. Conrad, J. M., & Clark, C. W. (1987). *Natural resource economics: notes and problems*. Cambridge University Press.

ECODSE552: Contemporary Issues of the Indian Economy

50 Marks   4 credits

Course Outcomes (COs)

After completing this course, students will be able to:

CO1: Analyse the trends, patterns, and structural changes in the Indian economy since independence, with emphasis on the post-liberalization period.

CO2: Evaluate recent developments in India's agricultural, industrial, fiscal, monetary, and financial sectors.

CO3: Interpret and assess current economic indicators such as GDP growth, inflation, employment, poverty, and inequality.

CO4: Critically examine India's performance on Sustainable Development Goals (SDGs) and the effectiveness of social protection and policy measures.

CO5: Discuss emerging challenges and opportunities for India's economy, including digital transformation, fintech, and the role of artificial intelligence.

Group – A: **25 Marks** (Written – 20, Internal Assessment – 05)

1. Economic Growth and Structural Changes in India – Analysis of economic policies since independence with special emphasis since liberalization; Trends in economic growth, fluctuations, and structural shifts in the post-liberalization period; Demographic dividends; Income inequality.
2. Agricultural and Industrial Development in Recent Decades – Agricultural performance, diversification; Industrial growth patterns post-1991 reforms; Role of MSMEs and start-ups; India's progress and challenges in achieving relevant Sustainable Development Goals (SDGs).

3. Fiscal and Monetary Policy in Contemporary India – Major fiscal policy initiatives and their macroeconomic implications; Overview of recent Union Budgets and Economic Surveys; Monetary policy framework of the RBI, inflation targeting, and recent policy measures; CPI and WPI trends; Issues in consumer and commodity prices.
4. Financial Sector Development – Reforms and their impact on the financial landscape; Performance analysis of banks, non-banking financial institutions, and capital markets (Sensex, NIFTY); Major policy initiatives; Fintech and digital finance; Future outlook of India's financial sector.

References

A. Dutta and Ruddar (2003), Economic Reforms, labour and employment, Deep and Deep Publication.
B. Sandesera, J.C. (1992) Industrial Policy and Planning: 1947-1951, Sage Publication. c) Kapila,
C. Uma (ed) Indian Economy since Independence, Academic Foundation
D. Sen, Rajkumar (ed), 2005, Social Sector Development in India, Deep and Deep e) Joshi, V, and Little, I.M.D. India's Economic Reforms: 1991-2001, OUP
E. Govt. of India Economic Survey 2004-05
F. Bhagwati, J. 2004; In Defense of Globalization, OUP.
G. Tisdell, Clem and Sen, Rajkumar (ed): Economic Globalization, 2004.
H. Bala, Subrahmanya, M. H. (2004), 'Small Industry and Globalisation Implications, Performance and Prospects', Economic and Political Weekly, vol. 39, NO: 18
I. Goldar, B N (2010), Energy Intensity of Indian Manufacturing Firms: Effect of Energy Prices, Technology and Firm Characteristics, Delhi: Institute of Economic Growth, http://www.mse.ac.in/Frontier/m13%20Goldar%20A.pdf
J. Nayyar, Deepak (1994) Industrial Growth and Stagnation: The Debate in India, editor, Bombay; Oxford University Pres

Group – B **25 Marks** (Written – 20, Internal Assessment – 05)

1. Employment and Unemployment Situation in India – Trends and patterns of employment and unemployment; Interrelationship between growth and employment; Unorganized sector and informalization of the Indian economy.
2. Poverty in India – Measurement of poverty – monetary and multidimensional approaches; Trends of poverty across regions, states, and social groups.
3. Food and Nutritional Insecurity in India – Status of food security and nutritional challenges; Government strategies and their effectiveness in addressing hunger and malnutrition.
4. Emerging Issues and Future Directions in the Indian Economy: Social protection programs and economic security in India; Vision *Viksit Bharat @ 2047* and its economic implications; Role of digital transformation in the Indian economy; AI and its economic implications for India; India's comparative position vis-à-vis other countries.

References

A. Uma, K. (ed.) Indian Economy since Independence, Academic Foundation.
B. Das, P., Paria, B., & Firdaush, S. (2021). Juxtaposing consumption poverty and multidimensional poverty: A study in Indian context. *Social Indicators Research*,

153(2), 469-501.

C.   Das, P., Ghosh, S., & Paria, B. (2023). Multidimensional poverty in India: patterns of reduction across population subgroups and geographical locations during 2005–06 and 2019–21. *GeoJournal*, *88*(4), 3851-3870.

D.   India Development Reports, 2017, IGIDR, Oxford University Press.

E.   Das, Pinaki (2012), 'Trends of Employment in India: Reflections from Recent NSS Data', *VidyasagarUniversity Journal of Economics*, Vol. XVI.

F.   Himanshu. (2007). Recent trends in poverty and inequality: Some preliminary results. *Economic and political weekly*, 497-508.

G.   Das, Pinaki &SkMdAbulBasar (2021), Are the Non-poor Households Nutritionally Secure? An Assessment from NSSO Unit Level Data in India Between 2004–2005 and 2011–2012, IJHD, 14(2)

H.   Aayog, N. (2011). *SDG India index & dashboard 2020–21, partnerships in the decade of action. United Nations & Niti Aayog*.

I.   Das, P. (2020). *Social protection programmes in india: impact on rural poverty and deprivation*. Concept Publishing Company.

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ECODSE552: History of Economic Thought

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Demonstrate familiarity with major schools of economic thought and their key concepts.

CO2: Appreciate the methodological and historical underpinnings of the theories.

CO3: Apply them in analysing both historical and present-day economic issues.

Group A: Classical Thought   25 Marks (Written -20, Internal Assessment -05)

1: Mercantilism and Physiocracy Mercantilism: Objectives, Main Characteristics, Bullionism, Contribution of Thomas Mun of the development of mercantilism. Physiocracy: The role of nature and the agricultural sector upon economy's progress, Main Ideas and Theoretical Concepts of Physiocrats, Predominance of Agriculture, Tableau Economique of Quesney, Role of taxation.
2: Classical School: Adam Smith-Wealth of Nation; T.R. Malthus-Population dynamics; David Ricardo-Role of land; J.S. Mill-Theory on Utilitarianism; J.B. Say-Supply becomes the decider; Alfred Marshall-Role of microeconomic units upon money balance; J.A. Schumpeter-Monetary factors have real impacts;Pigou-Real balance affects consumption and savings.

Group B: Beyond the Mainstream: Critique & Development   25 Marks (Written -20, Internal Assessment -05)

1: The Marxian School: Theory of Value and Surplus Value; Theory of Capital Accumulation and Crisis; Theory of Economic Development (expanded reproduction, falling rate of profit, historical materialism link to development)
2. Later Marxian Contributions: Rosa Luxemburg on accumulation, Lenin on imperialism
3.Indian Economic Thought: Dadabhai Naoroji- Drain Theory; Economic Policies of Jawaharlal Nehru-Five Year Plans and Heavy industrializations; Gandhian Economics and rural development; Amartya Sen's Approach to Development Economics-*The Capability Approach*

References:
   A. Eric Roll: History of Economic Thought; Faber & Faber; Revised, 1938
   B. Mark Blaug: Economic theory in retrospect; Cambridge University Press, 5th Edition, 1997
   C. Lewis Henry Haney: History of Economic Thought: A Critical Account of the Origin and Development of the Economic Theories of the Leading Thinkers in the Leading Nations, Macmillan, 4th Edition
   D. Lionnel Robbin: A History of Economic Thought: The LSE Lectures, 2000, Princeton University Press
   E. Schumpeter, Joseph A. (1954). *History of Economic Analysis*. Oxford University Press.
   F. Spiegel, Henry W. (1991). *The Growth of Economic Thought*. Duke University Press.
   G. Sweezy, Paul (1942). *The Theory of Capitalist Development*. Monthly Review Press.
   H. V. Lokanathan: A History of Economic Thought, 10th Edition, S Chand & Company, 2018

ECODSE553: Quantitative Economics

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Understand and apply key quantitative techniques such as nonlinear programming and set theory for analysing economic problems.

CO2: Demonstrate enhanced problem-solving skills using mathematical methods, facilitating better understanding of other economics courses in the programme.

CO3: Develop the ability to analyse strategic interactions in economics using game theory.

CO4: Apply dynamic optimisation techniques to study intertemporal economic decision-making.

CO5: Demonstrate enhanced problem-solving skills using mathematical methods, facilitating better understanding of other economics courses in the programme.

Group –A: **25 Marks (Written -20, Internal Assessment -05)**

    A. Linear Programming
    a. Nature and formulation of Linear Programs
    b. Duality
    c. Economic Applications

    B. Nonlinear Programming
    a. Nature of Nonlinear Programming
    b. Kuhn-Tucker Conditions
    c. The Constraint Qualification
    d. Sufficiency Theorems
    e. Economic Applications

    C. Real Analysis
    a. Sets and set operations
    b. Functions
    c. Numbers

References:

    A. Chiang, A.C.: Fundamental Methods of Mathematical Economics, Third Edition, 2005.

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B. Chiang, A.C. and Wainwright, K.: Fundamental Methods of Mathematical Economics, Fourth Edition, McGraw-Hill, 2005.

C. Intrilligator: Mathematical Optimization and Economic Theory, Prentice-Hall, 1971.

D. Henderson, J.M. and Quandt, R.E.: Microeconomic Theory: A Mathematical Approach, 3rd Edition, McGraw-Hill Book Company, 1980.

Group B   **25 Marks (Written -20, Internal Assessment -05)**

1. An Outline of Game Theory:
   A. Introduction to game theory, Normal form games, Nash Equilibrium, Mixed strategies
   B. Extensive form game and sub game perfect equilibrium, repeated games – finite and infinite
   C. Games with incomplete information
   D. Game Applications

2. Dynamic Optimization:
   A. An introduction to economic dynamics
   B. Simultaneous systems of differential equations, Stability analysis and linear phase diagrams
   C. Introduction to Optimal Control Theory- the maximum principle, Optimization problems involving discounting

References:

A. Aliprantis, C. D., & Chakraborty, S. K. (2000). *Games and decision making*. Oxford University Press.

B. Binmore, K. (2007). *Game theory: A very short introduction*. Oxford University Press.

C. Chiang, A. C. (1993). *Elements of dynamic optimization*. McGraw-Hill.

D. Chiang, A. C. (2005). *Fundamental methods of mathematical economics* (4th ed.). McGraw-Hill.

E. Gibbons, R. (1992). *A primer in game theory*. Harvester Wheatsheaf.

F. Gibbons, R. (1992). *Game theory for applied economists*. Princeton University Press.

G. Hoy, M., Livernois, J., McKenna, C., Rees, R., & Stengos, T. (2011). *Mathematics for economics* (3rd ed.). MIT Press.

H. Luce, R. D., & Raiffa, H. (1957). *Games and decisions*. John Wiley & Sons.

I. Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). *Microeconomic theory*. Oxford University Press.

J. Myerson, R. B. (1991). *Game theory: Analysis of conflict*. Harvard University Press.

K. Owen, G. (1991). *Game theory* (3rd ed.). Academic Press.

L. Rasmusen, E. (2001). *Games and information: An introduction to game theory* (3rd ed.). Blackwell Publishing.

M. Shone, R. (1997). *Economic dynamics*. Cambridge University Press.

N. Varian, H. R. (2014). *Intermediate microeconomics: A modern approach* (9th ed.). W. W. Norton & Company.

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ECODSE553: Operations Research

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Formulate and solve linear programming models for various real-world problems.

CO2: Apply the Simplex Method to find optimal solutions and perform sensitivity analysis to understand how changes in parameters affect the outcome.

CO3: Solve specialized problems like transportation and assignment models using their respective algorithms.

CO4: Develop and analyze goal programming models for multi-objective decision-making.

CO5: Form a strong foundation in quantitative techniques essential for decision-making in operations, logistics, and management.

Group-A   **25 Marks (Written -20, Internal Assessment -05)**

1. Network Analysis-Theory of graph and Network Construction; Maximal flow problem and its solution; Application
2. Inventory Control Theory-Concepts relating inventory; Model Building; Solutions
3. Queuing Theory-Concepts and features; different types of queuing models and the techniques of solutions
4. Markov Chains- Definition of a Markov Chain, Classification of the States in a Markov Chain, First Passage Time, Analysis of Absorbing States

References:

A. F. S. Hiller and G. J. Liberman. Introduction to Operations Research, Mc Graw Hill, 1990.
B. H. A. Taha. Operations Research: An Introduction, Pearson, 2010.
C. J. K. Sharma. Quantitative Techniques for Managerial Decisions, Macmillan, 2001.
D. M. K. Starr and D. W. Miller. Inventory Control – Theory and Practice, Prentice Hall, 1962.

Group-B: Linear Programming and Optimization   25 Marks (Written -20, Internal Assessment -05)

1. Modeling with Linear Programming: Two-variable LP Model; Computer solution; Application.
2. The Simplex Method and Sensitivity Analysis: LP model in equation form; The Simplex Method; Sensitivity Analysis.
3. Duality and Post-optimal Analysis: Definition; Primal-Dual relationship; Economic interpretation; Post-optimal analysis.
4. Transportation Model: Definition; The Transportation Algorithm; The Assignment Model.
5. Goal Programming: Formulation; Algorithm; Case study.

References:

A. Taha, H. A. (2013). *Operations research: an introduction*. Pearson Education India.

B. Winston, W. L. (2004). *Operations research: applications and algorithm*. Thomson Learning, Inc..

C. Borgwardt, K. H. (2012). *The simplex method: a probabilistic analysis* (Vol. 1). Springer Science & Business Media.

D. Salimifard, K., Shahbandarzadeh, H., & Raeesi, R. (2012, February). Green transportation and the role of operation research. In *Int. Conf. Traffic Transp. Eng.(ICTTE 2012)* (Vol. 26, pp. 74-79). IACSIT Press.

E. Murty, R. P. (2024). Operation Research. New Age International Publisher, New Delhi.

F. Tamiz, M., Jones, D. F., & El-Darzi, E. (1995). A review of goal programming and its applications. *Annals of operations Research*, *58*(1), 39-53.

G. Jones, D. D., & Tamiz, M. (2010). *Practical goal programming*. Springer,.

H. Schniederjans, M. (1995). *Goal programming: Methodology and applications: Methodology and applications*. Springer Science & Business Media.

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ECODSE554: Development Economics: Theory and Experiences

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Explain the challenges and opportunities globalisation brings.

CO2: Assess its impact on employment and inequality

CO3: Critically evaluate the role of international institutions and foreign capital in shaping growth and crises in developing countries.

Group A: Theories of Development: 25 Marks (Written -20, Internal Assessment -05)

1) Dual Economy: Structure; Rural-Urban Wage Gap and Labour Turnover Model; Surplus labour and Wage Productivity Model
2) Sen's Measure of Disguised Unemployment
3) Agricultural and Industry interaction – Harris- Todaro Model & Kaushik Basu's Formalization.
4) Informal Sector and Social Protection

References:
a) Debraj Ray, Development Economics, Princeton University Press (1998).
b) Kaushik Basu, Analytical development Economics: The Less Developed Economy Revisited, The MIT Press, Cambridge (2003)
5) Kanan, K.P., Sribastava, Sengupta (2006), 'Social Security for unorganised sector: A major national initiative', EPW, August 12.
6) NCEUS (2007), 'Social security for Unorganised Workers', New Delhi, May.

Group B: Development Experiences

1. Growth and Crisis of Developing Countries under Globalisation
2. Impact of Trade on Employment, Poverty and Income Inequality: The Wage-Gap Debate
3. Economic Integration: Regional Blocs, Multilateralism and WTO
4. Foreign Capital and International Institutions in Development: FDI, Aid, IMF–World Bank Conditionalities, and Policy Space of Developing Economies

References:
A. Acharyya, R. And Kar, S.: International Trade and Economic Development, Oxford
B. Caves, R. E., Frankel, J.A. and Jones, R.W: World Trade and

35

Payments- An Introduction, 9 th Edition, Pearson.

C.Chang, H.-J. (2007). *Bad Samaritans: The Myth of Free Trade and the Secret History of Capitalism*. Bloomsbury.

D. Marjit, International Trade and Economic Development- Essays in Theory and Policy, Oxford.

E. Krugman, P., Currency and Crises, MIT Press.

F. Krugman, P.R. and Obstfeld, M.: International Economics: Theory and Policy, 8 Edition, Pearson.

G. Marjit, S. and Acharyya, R.: International Trade, Wage Inequality and the Developing Economy: A General Equilibrium Approach, Springer.

H. Nayyar, D. (2013). *Catch Up: Developing Countries in the World Economy*. Oxford University Press.

I. Rodrik, D. (2011). *The Globalization Paradox*. Oxford University Press.

J. Sikdar, S., Contemporary Issues in Globalization: An Introduction to Theory and Policy in India, Oxford.

K. Stiglitz, J.E and Charlton, A.: Fair Trade For All: How Trade Can Promote Development, Oxford

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ECODSE554: Political Economy

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Understand the historical trajectories of the capitalist system and the intricacies of capitalist institutions.

CO2: Explore the complex interactions of society, polity and economy.

Group A: **25 Marks (Written -20, Internal Assessment -05)**

1. Introduction and Historical Overview
   Introduction (States-markets and society) -Emergence of Private property rights Perspective on political economy with a historical overview: capitalist development in the pre-second world war period, the golden age and later.
2. Changing Dynamics of Capitalist Production, Organisational Form and Labour Process Fordist and post-fordist production; changing dynamics of organisation of production, markets and labour process; the changing nature of job security and labour rights
3. The State in the Era of Globalisation: Welfare, Development and Autonomy
   Globalisation and the limits of the welfare state, development and state autonomy.

Group B: **25 Marks (Written -20, Internal Assessment -05)**

1. The Changing Role of Finance
   The changing role of finance in capital accumulation and corporate structure; finance and globalisation - financialisation, financial liberalisation and financial crisis
2. The Social Dimension: Globalisation and uneven development – growth, inequality, poverty and exclusion.
3. New Perspective
   Gender in work, accumulation and globalisation; issues in environment and sustainability; alternatives ahead

References:
A. J. Gurley, "The Materialist Conception of History", Ch.2.1 in R. Edwards, M. Reich and T. Weisskop (ed.), The Capitalist System, 2nd edition, 1978.
B. O. Lange, Political Economy, vol. 1, 1963, Chapters 1 and 2.
C. E.K. Hunt, History of Economic Thought, M.E. Sharpe, Indian edn, Shilpi Publications, 2004. IrfanHabib, 1995, "Capitalism in History", Social Scientist, Vol. 23: 15-31.
D. R.L. Heilbroner, "Capitalism", in the New Palgrave Dictionary of Modern Economics, Macmillan, 1987. Also reprinted as Chapter 2 in Behind the Veil of Economics by R.L. Heilbroner, W.W. Norton, 1988.
E. P. Sweezy, The Theory of Capitalist Development, Monthly Review Press, 1942,chapters 2, 4, 5, 6, 8 and 10.
F. Anwar Shaikh, Entries on "Economic Crises" and "Falling Rate of Profit" in T. Bottomore et al (eds.), The Dictionary of Marxist Thought, OUP, Indian edition, Maya Blackwell, 2000.
G. VamsiVakulabharanam, 2009, ―The Recent Crisis in Global Capitalism: Towards a Marxian

Understanding, Economic and Political Weekly, March 28, Vol. 44: 144-150.

H. J. Schumpeter, Capitalism, Socialism and Democracy, George Allen and Unwin 1976, Chapters 6, 7 and 8.

I. P. Baran (1957), The Political Economy of Growth, Chapter 3, Pelican edition, 1973.

J. R. Heilbroner, ―The Role of the State, Ch.4 in The Nature and Logic of Capitalism, 1985.

K. M. Kalecki, ―Political Aspects of Full Employment, in E.K. Hunt and J.G. Schwarz (eds.), A Critique of Economic Theory, Penguin Books, 1972.

L. AmitBhaduri, ―Nationalism and Economic Policy in the Era of Globalization, Ch. 2 in Deepak Nayyar (ed), Governing Globalization: Issues and Institutions, OUP, 2002 [also WIDER Working Paper no.188, WIDER website (2000)].

M. PrabhatPatnaik, ―"Lenin's Theory of Imperialism Today", in K.S. Jomo (ed.) The Long Twentieth Century: The Great Divergence: Hegemony, Uneven Development and Global Inequality, OUP.

N. James O'Connor, "The Meaning of Economic Imperialism," in Robert Rhodes, ed., Imperialism and Underdevelopment, New York: Monthly Review Press, 1970, pages 101 to 111

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ECODSC555: Financial Analytics

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Develop foundational knowledge of financial data analytics and understand its relevance in evaluating corporate performance.

CO2: Apply financial time series analysis tools and techniques to interpret and forecast financial data.

CO3: Demonstrate skills in portfolio management by constructing and assessing optimal investment portfolios.

CO4: Analyze financial statements effectively to support data-driven decision-making in the financial sector.

Group A   **25 Marks (Written -20, Internal Assessment -05)**

1. Corporate financial statements: Balance Sheet and P/L Accounts
2. Financial Ratio Analysis: Liquidity ratios, Profitability Ratios, Activity Ratios, Return on Investment.
3. Financial Derivatives, Futures and Options
4. Capital markets in India, Financial Instruments in capital market, Stock Exchange.

References:

A. Khan, M. Y., & Jain, P. K. (2018). *Financial management: Text, problems and cases* (8th ed.). McGraw-Hill Education.

B. Pandey, I. M. (2015). *Financial management* (11th ed.). Vikas Publishing House.

C. Chandra, P. (2017). *Fundamentals of financial management* (9th ed.). McGraw-Hill Education.

D. Van Horne, J. C., & Wachowicz, J. M. (2008). *Fundamentals of financial management* (13th ed.). Pearson Education India.

E. Bhole, L. M., & Mahakud, J. (2011). *Financial institutions and markets: Structure, growth and innovations* (5th ed.). McGraw-Hill Education.

F. Gupta, S. K., & Sharma, R. K. (2013). *Management accounting: Principles and practice* (14th ed.). Kalyani Publishers.

G. Hull, J. C. (2017). *Options, futures, and other derivatives* (9th ed.). Pearson Education India.

H. Gurusamy, S. (2017). *Capital markets* (3rd ed.). McGraw-Hill Education.

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Group B   **25 Marks (Written -20, Internal Assessment -05)**

1. Portfolio Theory: Introduction, Securities Market, Systematic & Unsystematic risk
2. Mean-Variance Criterion- Portfolio Diversification, Efficient Frontier & Capital Market Line, Capital Asset Pricing Model
3. Financial derivatives: Forward contract, Futures contract, options, Swaps; Functioning of derivative markets.
4. Capital Budgeting: Project Classification, Investment criteria, Different Techniques of Capital Budgeting

References:

A. Chandra, P.: Financial Markets, Tata McGraw Hill Education, Second edition, 2008.
B. Kevin, S.: Portfolio Management, Prentice Hall of India, 2001.
C. Damodoran A., Valuation: Security Analysis for Investment and Corporate Finance, John Wiley and Sons, 2006.
D. Farrell, Jr. J.L., Portfolio Management, Theory and Application, Second edition, McGraw Hill, 1997.
E. Francis, J.C. Investments Analysis and Management, McGraw Hill, 1991.
F. Stephen A. Ross, Randolph Westerfield, Bradford D. Jordan: Fundamentals of
G. Corporate Finance, Richard D Irwin, 1998.

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ECODSC601: Advanced Microeconomic Theory

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

Industrial Organisation provides a foundation for the study of many fields that rely on an understanding of interactions among firms in the economy, including business strategy, corporate finance, marketing, international trade, banking, and the economics of organizations. Upon successful completion of this course, students will be able to explain how to price and non-price competition among firms affect economic welfare, explain how market structure affects behaviour and vice versa, analyse and evaluate models of monopoly, oligopoly and competitive markets, and analyse basic antitrust and regulatory policy issues among others.

Group –A   **25 Marks (Written -20, Internal Assessment -05)**

1. Role of Economic Organisation in the functioning of Economy and Existence and Nature of Firm
2. A Review of Consumer Behaviour and Choice under Uncertainty
3. Market Economy, Pareto Optimality, General Equilibrium and Partial Equilibrium
4. Analysis of Market Failure: Role of externality
5. The Optimum Firm
6. Financial Decision making of Firm

References:

A. Coase, R. H., The Nature of the Firm, Economica 1937
B. Alchian, A. and Demsetz, H. Production, Information Cost and Economic Organisation, American Economic Review, 1972
C. Arrow, K. J., Limits to Economic Organisation
D. Robinson, E. A. G., Structure of the Competitive Industry
E. Bator, F. M., An Anatomy of Market Failure, Quarterly Journal of Economics 1958
F. Marris, R. L. The Theory of Managerial Capitalism g) Koutsoyiannis, A. Non-Price Decisions, Ch. 8-10

Group –B: **25 Marks (Written -20, Internal Assessment -05)**

1. Market Power: Static models of Oligopoly, Repeated interaction, The Competitive Limit.

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2. Uncertainty and imperfect information: Uncertainty, Probabilities and Expected Values, Attitudes towards risk, Insurance and Gambling, Asymmetric Information: The market for lemons. Analysis of Market Failure- Asymmetric information, Moral Hazard.

3. Adverse Selection, Signaling and Screening: Informational asymmetries and adverse selection, Signaling, Screening, The Insurance Market and Adverse Selection.

4. The Principal-Agent Problem: Hidden Actions (Moral Hazard), Hidden information and Monopolistic screening, Hidden Actions and Hidden Information: Hybrid Models, Subjective probability theory: The Allais paradox and The Ellsberg paradox.

5. The Positive Theory of Equilibrium: Equilibrium: Definition and Basic Equations, Existence of Walrasian Equilibrium, Local Uniqueness and the index Theorem, The Sonnenschein-Mantel-Debreu Theorem.

References:

A.   Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). *Microeconomic theory* (Vol. 1). New York: Oxford university press.

B.   Mandala, G. S., & Miller, E. (1989). Microeconomics, Theory and Applications.

C.   Varian, H. R. (2016). Grundzüge der Mikroökonomik. In *Grundzüge der Mikroökonomik*. De Gruyter Oldenbourg.

D.   Andreu, M. C., Michael, D. W., & Jerry, R. G. (1995). Microeconomic theory.

E.   Jehle, G. A. (2001). *Advanced microeconomic theory*. Pearson Education India.

F.   Diewert, W. E. (1982). Duality approaches to microeconomic theory. *Handbook of mathematical economics*, *2*, 535-599.

ECODSC602: Advanced Macroeconomic Theory and Growth

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

By the end of this course, students will be able to critically analyze alternative macroeconomic frameworks and growth theories, from Keynesian disequilibrium and structuralist approaches to rational expectations and inflation targeting. Students will be equipped to assess the dynamics of technical progress, savings behavior, and institutional factors in shaping long-run growth.

Group –A: 25 Marks (Written -20, Internal Assessment -05)

1. Ideas of Keynesian Involuntary Unemployment and Disequilibrium Macroeconomics
2. Structuralist Macroeconomics
3. Neo-Classical and Rational Expectation Policy Debate – Policy implications; Phillips Curve and the Natural Rate of Unemployment; Adaptive vs. Rational Expectations; Lucas Critique
4. Money Demand under Hyperinflation – The Cagan Model
5. Monetary Policy and Inflation Targeting – Application under Neo-Classical Phillips Curve framework

References:
A. Blanchard, O. (2021). Macroeconomics. 8th ed., Pearson.
B. Romer, D. (2019). Advanced Macroeconomics. 5th ed., McGraw-Hill.
C. Snowdon, B., & Vane, H. R. (2005). Modern Macroeconomics: Its Origins, Development and Current State. Edward Elgar.
D. Froyen, R. T. (2013). Macroeconomics: Theories and Policies. 10th ed., Pearson.
E. Turnovsky, S. J. (2000). Methods of Macroeconomic Dynamics. MIT Press.
F. Livacic, E. R., & Rebmann, K. A. (1983). Macroeconomics. Harper & Row.
G. Taylor, Lance (2004), Reconstructing Macroeconomics – Structuralist Proposals and Critiques of the Mainstream. Harvard University Press.
H. R.J. Barro and H.I. Grossman.A General Disequilibrium Model of Income and Employment, American Economic Review, 61, 82-93, 1971.

Group B: 25 Marks (Written -20, Internal Assessment -05)

1. Post-Keynesian Growth Models – Kaldor's model of distribution and growth; Pasinetti's theorem; Joan Robinson's growth model.
2. Neo-Classical Growth Model – Solow–Swan framework: assumptions, dynamics, steady state, golden rule; empirical relevance; Absolute vs. conditional convergence.
3. Technical Progress – Hicks-neutral, Harrod-neutral, and Arrow's learning-by-doing approaches; implications for growth.
4. Ramsey model with optimization of savings in an intertemporal system
5. One factor endogenous growth model-The AK Model
6. Endogenous growth with public institutions-Barro Model

References:
A. Sen, A. K. (1990). *Growth Economics*. Penguin Books.
B. Barro, R. and Sala-i-Martin,' Economic Growth', McGraw-Hill, 2004, 2nd Edition
C. Banerjee, D. and Das, R. C. (2024). Modern Macroeconomics, Routledge, London, 1st Edition

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D. Jones, C. I. (2002). *Introduction to Economic Growth*. W. W. Norton.

E. Solow, R. M. (2000). *Growth Theory – An Exposition* (2nd ed.). Oxford University Press

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ECODSCSP603: Econometrics I

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Learn the Linear Econometric Model when the basic assumptions of the Simple Model learnt in the general course in Semester II are violated.

CO2: Learn through this course the real-life problems of using a Simple Linear Regression Model.

CO3: Understand different ways to solve the econometric problems.

Group A: **25 Marks (Written -20, Internal Assessment -05)**

  A. Violation of Assumptions in Classical Linear Regression Model- Non-Zero Mean; Non- Normality; Autocorrelation-Causes, Consequences, Tests and Remedies; Heteroscedasticity- Causes, Consequences, Tests and Remedies;

  B. Stochastic Regressors, Large Sample Properties, Method of Moments, Instrumental Variable Estimation Method

  C. Multicollinearity- Causes, Consequences, Types of Multicollinearity: Enhancement synergism, Change sign, Tests and Remedies: Relative importance explanatory variables in Multiple Linear Regression Model

  D. Model Specification and Diagnostic Testing-Model Selection Criteria, Consequences and Tests of Specificationerror, Nestedand Non-Nested Models.

References:

  A. Gujrati, D.: Basic Econometrics, McGrawhill Higher Education, 2003.
  B. Judge, G.G., Hill, R.C., Griffiths, W.E.: Learningand Practicing Econometrics, Wiley, New York, 1993.
  C. Maddala, G.S.: Introduction to Econometrics, 3rd edition, John
  D. Wiley & Sons Ltd, 2005. d) Johnston, J.: Econometric Methods, 3rd Edition, McGraw-Hill/Irwin; 4th edition, 1996. e) Greene, W.H.: Econometric Analysis, 4th edition, Pearson Education, 2000.
  E. Judge, G.G., Hill, R.C., Griffiths, W.E, Lütkepohl,H., Lee,T.: Introductionto the Theoryand Practice of Econometrics, Wiley, New York, Second Edition.
  F. Johnston, J. and Dinardo, D.: Econometric Methods, Fourth Edition, McGraw-Hill, 2006.
  G. Wooldridge, J.W: Introductionto Econometrics,   South-Western, Division of Thomson Learning; Internationaled edition, 2005.
  H. Kmenta, J.: Elements of Econometrics, Macmillan Publishing company, 1991.
  I. Intriligator, M.: Econometric Models, Techniquesand Application, Prentice-Hall, Private India Ltd, New Delhi, 1980.
  J. Perron,P.: The Great Crash, The Oil Price Shockand The Unit Root Hypothesis", Econometrica,   vol.57   (6),   pp1361   to   1401,   1989

GROUP B: **25 Marks (Written -20, Internal Assessment - 05)**

1. Linear relationship and Introduction to two variable non-linear relationship.

2. Maximum Likelihood Method of estimation: Two and K variable case, Properties of the estimators, Restricted Maximum Likelihood Function, Likelihood Ratio Test; Limited information maximum likelihood method of estimation; Generalized Method of Moment estimator.

3. Tests of Structural Change – The Chow Test, CUSUM, CUSUMSQ, Models of Structural Break Analysis.

4. Dummy variables: Estimation and Interpretation, Dummy Variable Trap, Interaction Effect, Application of Dummy Variables (at least one)- Seasonal Analysis, Limited Dependent Variable model, Least Squares Dummy Variable (LSDV).

References:

A. Gujrati, D.: Basic Econometrics, McGrawhill Higher Education, 2003.

B. Judge, G.G., Hill, R.C., Griffiths, W.E.: Learningand Practicing Econometrics, Wiley, New York, 1993.

C. Maddala, G.S.: Introductionto Econometrics, 3rd edition, John Wiley & Sons Ltd, 2005.

D. Johnston, J.: Econometric Methods, 3rd Edition, McGraw-Hill/Irwin; 4th edition, 1996.

E. Greene, W.H.: Econometric Analysis, 4th edition, Pearson Education, 2000.

F. Judge,G.G., Hill, R.C.,Griffiths, W.E, Lütkepohl,H., Lee,T.: Introductionto the Theoryand Practice of Econometrics, Wiley, New York, Second Edition.

G. Johnston, J. and Dinardo, D.: Econometric Methods, Fourth Edition, McGraw-Hill, 2006.

H. Wooldridge, J.W: Introduction to Econometrics, South-Western, Divisionof Thomson Learning; Internationaled edition, 2005

I. Perron,P.:The Great Crash, The Oil Price Shock and The Unit Root Hypothesis", Econometrica, vol.57 (6), pp1361 to 1401, 1989

ECODSCSP603: International Economics and Finance I

50 Marks   4 credits

Course Outcome:

By the end of this course, students will gain a critical understanding of modern theories of international trade and finance beyond the classical framework.

CO1: They will be able to analyze trade patterns using general equilibrium models, evaluate the role of imperfect competition and strategic trade policy, and assess the implications of factor mobility and global value chains for inequality and development.

CO2: Students will also understand the political economy of trade policy, including the influence of interest groups, multilateral institutions, and strategic interactions among states.

CO3: Finally, they will acquire analytical tools to study exchange rate determination, capital flows, and measures of competitiveness, enabling them to connect theoretical models with contemporary issues in global trade and finance.

Group A: Advanced Trade theory   25 Marks (Written -20, Internal Assessment - 05)

1. Evolution of Trade Theory in response to empirical puzzles: Leontief paradox, intra-industry trade, and the emergence of global value chain perspectives.

2. Models of International Trade with Imperfect Competition and Increasing Returns to Scale

3. Oligopolistic Competition and Strategic Trade Theory: Brander-Spencer model: export subsidies and welfare implications; Role of economies of scale and imperfect competition in shaping trade policy; Industrial policy, rent-shifting, and critiques of strategic trade theory.

4. Trade in Factors of Production and in Intermediate Goods: Factor Mobility: capital inflow and immigration; Fragmentation and global value chains: theory of trade in intermediate inputs; Implications of outsourcing and offshoring for wages, inequality, and development

References:

A. Acharyya, R.: International Economics: An Introduction to Theory and Policy,Oxford.

B. Beladi,H.andMarjit,S.(1992),"ForeignCapitalandProtectionism,"Canadian Journalof Economics,CanadianEconomicsAssociation,vol.25(1),pages233-238,February.

C. Bhagwati,J.N.,Panagariya,A.and Srinivasan,T.N.:LecturesonInternationalTrade, Oxford.

D. Borjas, George J. (1994), The Economics of Immigration, Journal of Economic Literature Vol. XXXII (December), pp. 1667–1717

E. Caves, R. E., Frankel, J. A. and Jones, R. W. (2007).World Trade and Payments: An Introduction, 10th Edition, Pearson

F. Chandra, V. and Khan, M. A. (1993). Foreign investment in the presence of informal sector.Economica,60,79–103.

G. Corden, W M & Findlay, Ronald, 1975. "Urban Unemployment, Intersectoral Capital Mobility and Development Policy," Economica, London School of Economics and Political Science, vol. 42(165), pages 59-78, February.

H. Helpman, E. and Krugman, P. Trade Policy and Market structure, MIT Press.

I. Harris, J.R. and Todaro, M.P. (1970) Migration, Unemployment and Development: A Two- Sector Analysis. American Economic Review, 60, 126-142.

J. Krugman, P., Obstfeld, M. & Melitz, M. *International Economics: Theory and Policy*

K. Krugman, P. (1979). *Increasing Returns, Monopolistic Competition, and International Trade*. *Journal of International Economics*, 9(4), 469–479.

L. Krugman, Paul (1991). *Increasing Returns and Economic Geography.* Journal of Political Economy, 99(3), 483–499.

M. Leontief, Wassily (1953). "Domestic Production and Foreign Trade: The American Capital Position Re-examined." *Proceedings of the American Philosophical Society,* 97(4), 332–349.

N. Rajat Acharyya- International Economics; Oxford University Press.

Group B: Advanced Theories of Trade Policy   25 Marks (Written -20, Internal Assessment - 05)

1. Trade policy under imperfect competition: Tariffs, quotas, and subsidies when firms have market power; Strategic trade interventions: welfare effects and risks of retaliation; Interaction between market structure (monopoly, duopoly) and government policy

2. Political economy of trade policy: Interest group models: protection for sale, lobbying, and domestic politics of tariffs; International institutions: WTO rules, dispute settlement, and regionalism vs. multilateralism; Strategic interactions: trade wars, cooperation, and political constraints on liberalization

3. Domestic economy equilibrium and sources of tradable goods and services; International capital flow puzzles; Different exchange rates; Determination of Exchange rate in International Asset Market; Measuring trade openness and international competitiveness

References:

A. Brander, J.A. & Spencer, B.J. (1985). *Export Subsidies and International Market Share Rivalry*. *Journal of International Economics*, 18(1-2), 83–100.

B. R Dornbusch and S Fisher: Macroeconomics, McGrawhill, 2nd edition.

C. Feenstra, R.C. & Taylor, A.M. *International Trade*. Worth Publishers

D. Giancarlo Gandolfo, International Trade Theory and Policy, Springer, 2014

E. Grossman, G.M. & Helpman, E. (1994). *Protection for Sale*. *American Economic Review*, 84(4), 833–850.

F. Helpman, E. & Krugman, P. (1989). *Trade Policy and Market Structure*. MIT Press.

G. Krugman, P., Obstfeld, M. & Melitz, M. *International Economics: Theory and Policy*

H. Krugman, P. (1979). *Increasing Returns, Monopolistic Competition, and International Trade*. *Journal of International Economics*, 9(4), 469–479.

I. R. Caves, J. Frankel and R.W. Jones – World Trades & Payments (9th Ed); Pearson Education

J. RajatAcharyya- International Economics; Oxford University Press

ECODSCSP604: Econometrics II

50 Marks 4 credits

Course Outcome:
At the end of the course students will be able to: learn the basics of time series data and panel data, understand the stationary time series models and advantages of panel data, perform forecasting with time-series data, fixed effects, random effects model, LSDV model and dynamic panel also, apply time series techniques to state ARCH and multivariate time series, conduct research on panel data after knowing panel data handling, and opportunities for employability in marketing, finance and other business houses.

Group A: 25 Marks (Written -20, Internal Assessment -05)

1. Basic Concepts of Time Series and Univariate Time Series Modeling: Stochastic process, stationary stochastic process, White-noise stochastic process, Non-stationary stochastic process- Random walk, Unit root stochastic process.AR, MA and ARIMA Process.
2. Tests for Stationarity: Graphical approach, Autocorrelation Function and Correlogram, Unit Root test- Dickey-Fuller Test, Augmented Dickey-Fuller Test, Phillips-Perron Test. Limitations of unit root test, Sources of Non-stationarity. Spurious Regression Problem.
3. Cointegration and Error Correction Mechanism: Engle-Granger Cointegration test; Error- Correction Mechanism
4. Vector Autoregressive Model: Specification, Estimation and Forecasting. Vector Error Correction Model, Impulse response analysis, Variance Decomposition, merit and demerits of VAR. ARCH and GARCH for Modeling Volatility.
5. Models of Expectations and Distributed Lags: Models of expectations- Naïve models of expectations, The adaptive expectations model. Estimation with the adaptive expectations model- Estimation in the autoregressive form. Estimation in the distributed lag form

References:

A. Johnston &Dinardo (2006), *Econometric Methods*, McGraw Hill International Edition.

B. Green (2009), Econometric Analysis, Pearson Education.

C. Enders, Walter (2004):*Applied Econometric Time Series*, John Wiley.

D. Maddala (2009),*Introduction to Econometrics*, John Willy and Sons (Asia) Pte. Ltd.

Group–B: 25 Marks (Written-20, Internal Assessment-05)
1. Panel Data: Types; Advantages and Disadvantages
2. Panel Data Regression Models-Simplest Case, Fixed Effects Model(FEM), Random Effects Model(REM) and their Estimation
3. Selection of Appropriate Panel Data Regression Model: LM test, Restricted F test, Hausman test
4. Within-and-Between-Groups Estimators
5. Panel Unit Root, Panel Co-integration, Panel VAR, Panel VECM, Panel ARDLl: Basic Concepts and Applications with EViews

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References:

A. Baltagi(2008),EconometricAnalysis of Panel Data, JohnWiley.

B. Johnston &Dinardo(2006),*Econometric Methods*, McGraw Hill International Edition.

C. Green(2009),*Econometric Analysis*,PearsonEducation.

D. Wooldridge(2002), Econometric Analysis of Cross Section and PanelData, MIT-Press, Cambri

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ECODSCSP604: International Economics and Finance II

50 Marks   4 credits

Course Outcome:

By the end of this course, students will understand the evolution of the international monetary system, the functioning of exchange rate regimes, and the role of institutions such as the IMF.

CO1: The learners will be able to grasp the evolution of the international monetary system, the functioning of exchange rate regimes, and the role of institutions such as the IMF.

CO2: The students will be able to analyze the causes and dynamics of currency crises using theoretical models and historical case studies, and critically assess the persistence of dollar hegemony and the prospects for alternative reserve currencies.

CO3: Students will also gain proficiency in balance of payments accounting, examine global imbalances and current account sustainability, and apply alternative theoretical approaches to explain external balance in open economies.

Group A: International Monetary System and Currency Crisis   25 Marks (Written-20, Internal Assessment-05)

1. History of Exchange Rate Arrangements: Evolution of the gold standard, Bretton Woods, and the post-Bretton Woods order; Role of the IMF in stabilization, adjustment programs, and exchange rate management; Fixed vs. flexible exchange rate regimes: theory and empirical performance.

2. Currency Crisis: Models of currency crises; Case studies: Latin America (1980s), Asia (1997), and the Global Financial Crisis (2008); Early warning indicators and policy responses to crises.

3. Dollar Hegemony: The U.S. dollar as a reserve currency: historical roots and persistence; Triffin dilemma and the stability of the international monetary system; Emerging alternatives: Euro, Renminbi, and prospects for a multipolar currency system

References:

  A. Cohen, B.J. (2015). *Currency Power: Understanding Monetary Rivalry*. Princeton University Press.
  B. Eichengreen, B. (2008). *Globalizing Capital: A History of the International Monetary System*. Princeton University Press.
  C. Eichengreen, B. (2011). *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*. Oxford University Press.
  D. Kaminsky, G.L., Lizondo, S. & Reinhart, C.M. (1998). *Leading Indicators of Currency Crises*. *IMF Staff Papers*, 45(1), 1–48.
  E. Krugman, P., Obstfeld, M. & Melitz, M. *International Economics: Theory and Policy* (latest ed.), chapters on exchange rate systems.
  F. Krugman, P. (1979). *A Model of Balance-of-Payments Crises*. *Journal of Money, Credit and Banking*, 11(3), 311–325.
  G. Obstfeld, M. (1996). *Models of Currency Crises with Self-Fulfilling Features*. *European Economic Review*, 40(3–5), 1037–1047.

Group B: Open Economy Macroeconomics   25 Marks (Written-20, Internal Assessment-05)

1. Accounting of Balance of Payments: Accounting of BOP in a book keeping system involving current account, capital account and financial account

2. Global Imbalances, Sustainability in the Current Account, Current Account Determination in a Production Economy

3. Models of Balance of Payments: Absorption approach to BOP, Elasticity approach to BOP using the Marshall-Lerner Condition

4. The multiplier approach- Standard Keynesian and New Keynesian model with open economy, Monetary approach to BOP

5. The Monetary Approach to the Balance of Payments

References:

A. Bo Sodersten: International Economics, Macmillan, UK
B. Mundell, Robert A. (1963). "Capital mobility and stabilization policy under fixed and flexible exchange rates". Canadian Journal of Economic and Political Science. 29 (4): 475–485
C. Fleming, J. Marcus (1962). "Domestic financial policies under fixed and floating exchange rates". IMF Staff Papers, No. 9
D. Giancarlo Gandolfo (1987). International economics, Springer-Verlag
E. Dibyendu Banerjee and Ramesh Chandra Das (2024). Modern Macroeconomics, Routledge, London
F. R Dornbusch and S Fisher: Macroeconomics, McGrawhill, 2nd edition
G. Riyanka Bag, Ramesh Chandra Das (2024). "Associations of Trade Openness With Growth and Foreign Currency Reserve: A New Insight for the BRICS Nations", International Trade, Economic Crisis and the Sustainable Development Goals, Emerald publications, UK

EC0DSE605: Gender Studies and Human Development

50 Marks   4 credits

Course Outcomes (COs)

On completion of the course, students will be able to

CO1: Evaluate gender as a social construct and will help to identify the ways gender, power, privilege, and oppression play out across a range of cultures and human experiences.

CO2: Demonstrate an understanding of gender as it intersects with sexuality, race, ethnicity, religion, class and other critical variables.

CO3: Integrate the perspectives of multiple disciplines, approach the research in human development with a critical eye, and develop the skills that will allow them both to conduct their own research and apply them to contemporary, real-world situations.

CO4: Demonstrate an understanding of how gender, ethnicity, class, historical period, and social location relate to the life course experience; understanding and working effectively with a diversity of individuals and communities; applying theory and research to contemporary problems and real-world situation; design and implement research, analyze data appropriately, and judge the significance of findings.

Group-A: Gender Studies   **25 Marks (Written: 20, Internal Assessment: 05)**

1) Gender: Meaning, Gender Socialisation, Gender Roles, Gender and Development, Gender Discrimination, Gender Budgeting
2) Approaches to Gender Development: Gender Development Index, Gender Empowerment Measure, Policies, Programs and Role of NGOs
3) Gender Issues with special reference to India (at least one): Gender and Health, Gender and Education, Gender and Environment, Violence against women, Problems of Girl Child, etc.

References:
A. Connell, R.W. (2002). "Gender". Cambridge: Polity Press
B. S. Gunew (ed.) (1991). "A Reader in Feminist Knowledge". London, Routledge.
C. Oakley A (1985). "Sex, Gender and Society". London, Temple Smith.
D. Dr. Mahabaleshwar Rao, Gender, School Education (2017), VismayaPrakashana.
E. Dr. N. B. Kongavada et al., Gender School and Society (2018), Vidyanidhi Prakashana.
F. Nivedita Menon. Gender and Politics in India. Oxford University Press. 2001
G. Afreen, A. and Chakraborty, C. (2019). "Crime in India: A State-Level Analysis", Vidyasagar University Journal of Economics, Vol. XXI, pp. 45-54, 1st November. (ISSN 0975-8003).
H. Chakraborty, C., Afreen, A. and Pal, D. (2021). "Crime against Women in India: A State-Level Analysis", Journal of International Women's Studies, 22(5), June, pp 1-18. Available at :https://vc.bridgew.edu/jiws/vol22/iss5/1
I. Chakraborty, C. and Pal, D. (2022). "Environmental Sustainability, Growth Trajectory and Gender: Contemporary Issues of Developing Economies". Emerald Insights.

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Group –B Human Development   **25 Marks (Written -20, Internal Assessment -05)**

1. Earlier approaches to development:

   A. Redistribution with Growth Approach
   B. Basic Needs Approach
   C. Quality of Life Approach
   D. Human Capital Approach Human Development

2. Approaches to Human Development:

   A. Commodity Based system and Utility Approach
   B. Capability Approach-role and relevance, capabilities and freedoms, criterion for selecting capabilities, introduction to other attempts, critique of the capability approach.
   C. Theory of Justice: Rawls and other
   D. Comparison of Rawlsian Approach and Capability Approach

3. Measurement of Human Development

   A. Need for Indices- limitations of per capita GDP as an indicator Earlier Indices
   B. Physical Quality of Life Index (PQLI)
   C. Disability Adjusted Life Years
   D. Basic Capabilities Index

4. Emergence of Human Development Index and other indices

   A. HDI as compared to per capita GDP
   B. Method of computing HDI
   C. Critique of HDI
   D. Human Poverty Index-I & II
   E. Happiness Index

5. Experience of Human Development

   A. Achievements in Human Development-Perspectives from cross country comparisons and inter-state comparisons within India
   B. Sustainable Development Goals- Rationale, progress so far and Challenges ahead

References:

   A. Lerner, R. M. (2018). Concepts and theories of human development. Routledge.
   B. Salkind, N. J. (2004). An introduction to theories of human development. Sage Publications.
   C. Lerner, R. M. (1998). Theories of human development: Contemporary perspectives.
   D. Green, M. G., &Piel, J. A. (2015). Theories of human development: A comparative approach. Psychology Press.
   E. Anand, S., & Sen, A. (1995). Gender Inequality in Human Development: Theories and Measurement.
   F. Lerner, R. M., Lewin-Bizan, S., & Warren, A. E. A. (2011). Concepts and theories of human development.
   G. Felice, E., &Vasta, M. (2015). Passive modernization? The new human development index and its components in Italy's regions (1871–2007). European Review of Economic History, 19(1), 44-66.
   H. Sagar, A. D., & Najam, A. (1998). The human development index: a critical review. Ecological economics, 25(3), 249-264.
   I. McGillivray, M., & White, H. (1993). Measuring development? The UNDP's human development index. Journal of international development, 5(2), 183-192.
   J. Noorbakhsh, F. (1998). A modified human development index. World development, 26(3), 517-528.

K. Nussbaum, M. C. (2009). Creating capabilities: The human development approach and its implementation. Hypatia, 24(3), 211-215.

L. Alkire, S., &Deneulin, S. (2009). Introducing the human development and capability approach. An introduction to the human development and capability approach. London: Earthscan.

M. Kukathas, C., & Pettit, P. (1990). Rawls: a theory of justice and its critics.

N. Rawls, J. (1973). Some ordinalist-utilitarian notes on Rawls's theory of justice. The Journal of Philosophy, 70(9), 245-263.

O. Barry, B. M. (1973). The liberal theory of justice: A critical examination of the principal doctrines in a theory of justice by John Rawls.

P. Hare, R. M. (1973). Rawls' theory of justice.

ECODSE605: Advanced Data Analytics with Python and R (Theory + Practical)

50 Marks   4 credits (Theory= 2 and Practical=2)

Course Outcome:

- Gather sufficient relevant data, conduct data analytics using scientific methods, and make appropriate and powerful connections between quantitative analysis and real-world problems.
- Demonstrate a sophisticated understanding of the concepts and methods; know the exact scopes and possible limitations of each method, and show the capability of using data analytics skills to provide constructive guidance in decision making.
- Use advanced techniques to conduct thorough and insightful analysis, and interpret the results correctly with detailed and useful information.
- Make better economics/business decisions by using advanced techniques in data analytics.

Group A: Data Analytics with R

1) Basic Concepts of Language and Programming with R-studio:
    a) Lists of Objects and Data Frames
    b) Reading and Writing Data Files
    c) Calling Functions; Conditions and Loops
2) Data Summarization and Visualization
    a) Elementary Statistics
    b) Basic Data Visualization
    c) Probability Distributions
    d) Sampling distribution
3) Statistical Testing and Modeling
    a) Hypothesis Testing, ANOVA
    b) Simple and Multiple Linear Regression
    c) Linear Model Selection and Diagnostics: Subset Selection Methods, Ridge Regression and the Lasso, Principal Components Regression, Partial Least Squares Regression
    d) Polynomial Regression: Step Functions, Splines, GAMs
4) Classification, Clustering and Decision Tree
    a) Logistic Regression
    b) Linear and Quadratic Discriminant Analysis
    c) Classification Using a Nearest Neighbour Analysis
    d) Clustering: K-means and Hierarchical;
    e) Decision Trees
5) Advanced Graphics
    a) Advanced Plot Customization
    b) Colours and Plotting in Higher Dimensions
    c) Interactive 3d Plots

References::

A. Johannes Ledolter(2013), Data Mining and Business Analytics with R, by; Publisher: Wiley
B. Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshiran(2013). *An Introduction to*

Statistical Learning with Application in R, Springer

C. Tilman M. Davies (2016). The Book of R: A First Course in Programming and Statistics. no starch press, San Francisco

Group B: **Data Analytics with Python**
1) Python Fundamentals
   a) Python package for data science
   b) Importing and Exporting Data in Python
   c) Cleaning and Preparing the Data
2) Data Summarization and Visualization
   a) Descriptive Statistics; Basic of Grouping; ANOVA, Correlation etc,;
   b) Chi-square - Goodness of Fit Test, Test of Independence;
   c) Difference types Graphical presentation
3) Model Development and Evaluation
   a) Simple and Multiple Linear Regression
   b) MLE and Logistic regression Model Evaluation Using Visualization
   c) R-squared and MSE for In-Sample Evaluation
   d) Prediction and Decision Making
   e) Model evaluation
4) Clustering analysis
   a) Similarity and dissimilarity, Distance matrix,
   b) Clustering methods: partitioning, K-means clustering, Hierarchical method of clustering
5) Classification and Regression Trees (CART)
   a) Basic concepts
   b) Attribute selection measures: Information Gain, Gain ratio, Gini Index and decision tree

References:
A. McKinney, W. (2012). Python for data analysis: Data wrangling with Pandas, NumPy, and IPython. " O'Reilly Media, Inc.".
B. Swaroop, C. H. (2003). A Byte of Python. Python Tutorial.
C. Jiawei Han and Micheline Kamber (2006). Data Mining: Concepts and Techniques.
D. Leonard Kaufman, Peter J. Rousseeuw (1990). Finding Groups in Data: An Introduction to Cluster Analysis. "John Wiley & Sons, Inc".

ECOSKE606: Social Service / Community Engagement with Seminar

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ECODSCSP651: Econometrics III

<div align="center">

50 Marks   4 credits
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Course Outcome:

After taking the course, the students are expected to grasp the techniques like Generalised Linear Regression Model and Its Applications, GMM and its application in Dynamic Panel Data Model, Principal Component Analysis, and Simultaneous Equation Methods. Students will be able to learn when and how to apply the above econometric methodologies to analyse economic problems.

Group–A: 25 Marks (Written-20, Internal Assessment-05)

1) Generalised Linear Regression Model and Its Estimation
2) CHTA and CCTA Models and their Estimations
3) Error Component Model and Seemingly Unrelated Regression
4) GMM and its application in the Dynamic Panel Data Regression Model.
5) Advanced topics in limited dependent variables models- multinomial and ordered Logit, Probit and Heckman Selection models
6) Application in STATA and Eview

References:

A. Kementa J., Elements of Econometrics,Macmillan Publishers Limited,1986
B. Baltagi(2008),Econometric Analysis of Panel Data, John Wiley.
C. Collin Cameron and P.K.Trevedi. Micro Econometric Methods and Applications, Cambridge University Press, 2005
D. Johnston & Dinardo (2006),*EconometricMethods*,McGrawHillInternationalEdition.
E. Green(2009),*Econometric Analysis*, PearsonEducation.
F. Wooldridge (2002),Econometrics Analysis of Cross Section and Panel
G. Data, MIT-Press, Cambridge.

Group –B: 25 Marks (Written -20, Internal Assessment -05)

1. Regression models with qualitative response – Linear Probability Model, Logit Model, Probit Model and Tobit Model

2. Simultaneous Equation Methods: Single Equation Methods of Estimation –OLS, ILS, LIML, 2SLS; System Methods of Estimation – 3SLS, FIML

3. Principal Component Analysis – Methods, applications and interpretations.

References:

A. Kmenta, J. (1986). *Elements of econometrics* (2nd ed.). Macmillan.

B.   Johnston, J., & DiNardo, J. (2006). *Econometric methods* (4th ed.). McGraw-Hill International Edition.
C.   Greene, W. H. (2007). *Econometric analysis* (6th ed.). Pearson Education.
D.   Johnston, J. (1984). *Econometric methods* (3rd ed.). McGraw-Hill.
E.   Koutsoyiannis, A. (2001). *Theory of econometrics* (2nd ed.). Palgrave Macmillan.
F.   Maddala, G. S. (2012). *Introduction to econometrics* (4th ed.). Wiley India Pvt. Ltd.
G.   Pindyck, R. S., & Rubinfeld, D. L. (1998). *Econometric models and economic forecasts* (4th ed.). McGraw-Hill International Edition.
H.   Johnson, R. A., & Wichern, D. W. (2007). *Applied multivariate statistical analysis* (6th ed.). Pearson Education.
I.   Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Pearson Education.
J.   Gujarati, D. N., & Sangeetha. (2007). *Basic econometrics* (4th ed.). McGraw-Hill.
K.   Intriligator, M. D. (1980). *Econometric models, techniques, and applications* (2nd ed.). Prentice Hall.

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ECODSCSP651: International Economics and Finance III

50 Marks   4 credits

Course Outcome

CO1: By the end of this course, students will be able to analyze the functioning of international financial markets, portfolio choices, and the determinants of capital flows, including their risks and policy implications.

CO2: They will be able to critically assess the political economy of global finance, focusing on the role of international institutions, power asymmetries, and debates on financial globalization.

CO3: Students will also develop competence in international macroeconomic analysis through the Mundell-Fleming framework, understanding stabilization policies, the trilemma, and crisis management.

CO4: Finally, they will examine India's external sector and the role of emerging economies, particularly BRICS, in shaping the evolving global financial and trade architecture.

Group A: International Financial Economics   25 Marks (Written -20, Internal Assessment -05)

1. International Portfolio Management- Equity Financing, Bond Financing, Bank Financing.

2. International Capital Flows: Types and determinants of capital flows: FDI, portfolio flows, and short-term speculative flows; Volatility, sudden stops, and capital flight: macroeconomic impacts on emerging economies; Policy issues: capital controls, financial liberalization, and the trilemma of monetary policy independence.

3. Political Economy of Global Finance: The role of global financial institutions (IMF, BIS, World Bank) in shaping financial governance; Power, asymmetry, and dependency: North–South dynamics in global finance; Debates on financial globalization: stability, inequality, and prospects for reform.

Reference:
   A. Helleiner, E. (1994). *States and the Reemergence of Global Finance: From Bretton Woods to the 1990s*. Cornell University Press.
   B. Krugman, P., Obstfeld, M. & Melitz, M. *International Economics: Theory and Policy* (Pearson, latest ed.), chapters on capital mobility.
   C. Oatley, T. (2019). *International Political Economy* (6th ed.). Routledge.
   D. Obstfeld, M. & Taylor, A.M. (2004). *Global Capital Markets: Integration, Crisis, and Growth*. Cambridge University Press.
   E. Prasad, E., Rajan, R. & Subramanian, A. (2007). *Foreign Capital and Economic Growth*. *Brookings Papers on Economic Activity*, 1, 153–230.
   F. Stiglitz, J. (2002). *Globalization and Its Discontents*. W.W. Norton; and Cohen, B.J. (2008). *International Political Economy of Global Money*. Routledge.

Group B: 25 Marks: International Macroeconomics   25 Marks (Written -20, Internal Assessment -05)

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1. Mundell-Fleming Model: Capital Mobility and Stabilization Policies under Fixed and Flexible Exchange Rate

2. Fiscal and monetary policy effects under fixed and flexible exchange rates with perfect and imperfect capital mobility conditions

3. Impossible Trinity, J curve, Dealing with Financial Crisis in Mundell-Fleming Model, Socio-political Cost of Devaluation

4. India's trade scenario-Current account, capital account, FOREX reserves, volatility in trade indicators

5. Role of BRICS at international trade platform; The structure and impact of BRICS Bank

References:

A. Mundell, Robert A. (1963). "Capital mobility and stabilization policy under fixed and flexible exchange rates". Canadian Journal of Economic and Political Science. 29 (4): 475–485

B. Fleming, J. Marcus (1962). "Domestic financial policies under fixed and floating exchange rates". IMF Staff Papers, No. 9

C. Giancarlo Gandolfo (1987). International economics, Springer-Verlag

D. Dibyendu Banerjee and Ramesh Chandra Das (2024). Modern Macroeconomics, Routledge, London

E. R Dornbusch and S Fisher: Macroeconomics, McGrawhill, 2nd edition

F. Riyanka Bag, Ramesh Chandra Das (2024). "Associations of Trade Openness With Growth and Foreign Currency Reserve: A New Insight for the BRICS Nations", International Trade, Economic Crisis and the Sustainable Development Goals, Emerald publications, UK

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ECODSCSP652: Econometrics IV

50 Marks   4 credits

Course Outcome:

After taking the course, the students will be equipped with various techniques to handle econometric data and will also have total grapes over applied econometrics. The course will provide sufficient knowledge regarding the econometric applications to households such as demand analysis, estimation of the consumption function, family budget study etc. Completing this course will also provide sufficient knowledge of econometric applications to firms, money market, labour economics, investment function etc. Again, this course also contains important aspects in the construction of HDI, evaluating structural breaks, trends in macro-econometric model construction and RBI- MSE macro model for the Indian economy.

Group –A: Application of Econometric Models

25 Marks (Written -20, Internal Assessment -05):

1. Application of Single Equation Estimation:
   a) Application to Households – Demand Analysis, Consumption Function Estimation, Family Budget Studies & Engels Law.
   b) Application to Firms – Production Function and Cost Functions, Growth &Profitability,
2. Employment Function and Economic Capacity Utilisation:
   a) Application to Money Market – Demand for Money
   b) Application to Labour Economics.
   c) Estimation of Investment and Consumption Function.
   d) Estimation of Export-Import Function

Group –B: (Four topics of the following topics will be covered)   25 Marks (Written -20, Internal Assessment -05)

1) Evaluating Structural Breaks: An application of dummy variable model
2) Measuring Economic Inequality; Sub-group decomposition of inequality measures
3) Construction of Human Development
4) The Trends in Macroeconometric Model Construction
5) Simultaneous – Equations Models of Money Demand and Supply.
6) System of Demand Equations- Linear expenditure system.
7) RBI-MSE Macro Model for Indian Economy.

References:

A. Michael D. Intriligator, Econometric Models, Techniques, and Applications
B. Julia Hebden, Applications of Econometrics
C. M. Desai, Applied Econometrics
D. Kerry Patterson, An Introduction to Applied Econometrics – A Time Series Approac

ECODSCSP652: International Economics and Finance IV

Course Outcomes

CO1: The students will be tracked to a new lawn on green macroeconomics in relation to international trade.

CO2: The readers will be able to grasp how national income is to be recalculated using the environmental issues.

CO3: The students will be able to grasp how the fiscal and monetary policy effects will work under environmental sustainability conditions using the BOP model.

CO4: The students will be offered to gather knowledge on how the forecasting of green and trade indicators are done using statistical and econometric methods.

Group A: Green Macroeconomics and International Trade   25 Marks (Written -20, Internal Assessment -05)

1. Introducing green macroeconomics
2. Fiscal and monetary policy effects under environmental sustainability
3. Role of pollution permit market upon policy effects under sustainable international trade
4. Revisiting Mundell-Fleming Model under the context of sustainable international flow of goods and capital
5. Introducing capacity utilization to sustainable domestic and international trade policy effects
6. Interrelationships between domestic capital and foreign capital
7. Role of foreign remittances upon Indian Economy

References:

A. Costanza, R. and Daly, H.E. (1992). Natural Capital and Sustainable Development, Conservation Biology, 6, 37-46. http://dx.doi.org/10.1046/j.1523-1739.1992.610037.x
B. Das, R. C. (Ed) (2023). Economic, Environmental and Health Consequences of Conservation Capital: A Global Perspective, Springer Nature, Singapore
C. Das, R.C., Chatterjee, T. & Ivaldi, E. Revisiting policy combinations under IS–LM–EE framework introducing capacity utilization. *Qual Quant* 58, 903–932 (2024). https://doi.org/10.1007/s11135-023-01676-x
D. Decker, S. & Wohar, M. E. (2012). Substitutability or complementarity? Re-visiting Heyes' IS-LM-EE model. Ecological Economics, 74, 3-7.
E. Hayes, A. (2000). A Proposal for the Greening of Textbook Macroeconomics: IS-LM-EE", Ecological Economics, 32 (1), 1-8
F. Lawn, P. A. (2003a). On Heyes' IS–LM–EE proposal to establish an environmental macroeconomics, Environment and Development Economics, 8: 31–56, 2003 Cambridge University Press
G. Lawn, P. A. (2003b). Environmental Macroeconomics: Extending the IS-LM Model to Include an 'Environmental Equilibrium' Curve, Australian Economic Papers, 42 (1), pp.118-134
H. Sim, N.C.S. (2006). Environmental Keynesian macroeconomics: some further discussion. Ecological Economics, 59 (4), 401–405
I. Zhang, M. R. & Lee, C. M. (2017). Economic policy of sustainable development based on IS-LM-EE model, Applied Ecology and Environmental Research, 15(3): 785-795

Group B: Modeling and Forecasting of International Finance Indicators   25 Marks (Written -20, Internal Assessment -05)

1. Techniques of Forecasting

2. Forecasting using ARIMA model-Theoretical framework
3. Forecasting of export, import, current account, FDI flow, exchange rates etc-Countries' perspectives
4. Volatility analysis of the forecasted international capital movements
5. Stochastic Discount Factor Models: Introduction; Examples of stochastic discount factors; SDF modelling: the principle.

References:

A. G. S. Maddala: Introduction to Econometrics, 3rd Edition, Wiley
B. S. K. Bhaumik: Principles of Econometrics: A Modern Approach Using EViews, Oxford
C. Box, G. E. P. and Jenkins, G. M. (1976). Time series analysis forecasting and control (2nd edition). San Francisco: Holden-Day
D. Das, R. C. (2020). Forecasting Incidences of COVID-19 using Box-Jenkins Method for the Period July 12-September 11, 2020: A study on highly affected countries, *Chaos, Solitons and Fractals*, 140, DOI:10.1016/j.chaos.2020.110248
E. Jiang, Y., Wei, W., Das, R. C. and Chatterjee, T. (2020). "Analysis of the Strategic Emission-Based Energy Policies of Developing and Developed Economies with Twin Prediction Model," Complexity, Hindawi, 1-16, November, https://doi.org/10.1155/2020/4701678.
F. Gourieroux, C., & Monfort, A. (2007). Econometric specification of stochastic discount factor models. *Journal of Econometrics*, *136*(2), 509-530.

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ECOSKE653: Dissertation with Seminar (8 credits)

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ECOSKE654: Internship / Capstone Project /Applied Field or Industry Project/Innovation & Incubation/ Entrepreneurship/ Start-up Proposal or Practice with Seminar

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ECODSC655: AI Tools for Research and Learning in Economics (Theory & Practical)

Marks: 25 **Credits:** 2

Course Outcomes: After completing the course, students will be able to:

1. Identify suitable AI tools for different stages of economic research and learning.
2. Use AI platforms for literature search, summarization, and citation management.
3. Apply AI-assisted data analytics and visualization tools to economic datasets.
4. Integrate AI in drafting, editing, and presentation of research outputs.
5. Critically evaluate ethical issues and limitations of AI in academic work.

1. Introduction to AI in Economics Research (T)

1. AI concepts and relevance for economics.
2. AI vs. traditional computational tools.
3. Examples of AI tools: ChatGPT, Claude, Perplexity, Elicit, Scite, Connected Papers, Consensus, ScholarAI, Research Rabbit.

2. AI for Literature Review and Knowledge Management (T+P)

1) AI-powered literature search and mapping.
2) Using AI tools (e.g., Elicit, Connected Papers, Research Rabbit) to prepare a thematic literature map and systematic literature review.
3) Summarization and extraction of key findings using AI tools.
4) Citation management integration (Mendeley, Zotero with AI plug-ins).

3. AI for Data Analysis and Visualization in Economics (T+P)

1) Using AI assistants to generate code in R, Python, or Stata for statistical and econometric analysis.
2) AI-assisted data cleaning, transformation, and exploratory analysis.
3) Generating visualizations: plots, dashboards, interactive charts with AI.
4) Applications: macroeconomic indicators, survey data, time series, and panel data.

4. AI for Writing, Editing, and Presentation (T+P)

1) Drafting abstracts, research proposals, and reports with AI assistance.
2) AI-based grammar, style, and plagiarism checking (Grammarly, QuillBot, Turnitin's AI detection).
3) AI for creating presentation slides and infographics (Canva Magic Design, Gamma, Beautiful.ai).
4) Ethical considerations: academic integrity, plagiarism, bias, and transparency in AI usage.

References:

A. Agrawal, A., Gans, J., & Goldfarb, A. (2018). *Prediction Machines: The Simple Economics of Artificial Intelligence*. Harvard Business Review Press.

B. Mhlanga, D. (2023). "Open AI in Education, the Responsible and Ethical Use of ChatGPT Towards Lifelong Learning." *Sustainability*, 15(5), 1–20.

C. OpenAI. (2024). *ChatGPT User Guide*. Retrieved from https://openai.com/

D. Elicit.org. (2024). *Elicit: The AI Research Assistant*. Retrieved from https://elicit.org/

E. Connected Papers. (2024). *Connected Papers – Discover Connected Research*. Retrieved from https://www.connectedpapers.com/

F. Research Rabbit. (2024). *Research Rabbit – Explore and Visualize Research Networks*. Retrieved from https://www.researchrabbit.ai/

G. Scite.ai. (2024). *Smart Citations for Better Research*. Retrieved from https://scite.ai/

H. Mendeley. (2024). *Mendeley Reference Manager*. Retrieved from https://www.mendeley.com/

I. Zotero. (2024). *Zotero: Your Personal Research Assistant*. Retrieved from https://www.zotero.org/

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