GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

DEPARTMENT OF ECONOMICS

M. Sc. (Economics) Programme

Scheme and instruction for M.Sc. (Economics) examination effective from the academic year 2020-21

The M.Sc. Economics Programme is divided into four semesters (two semesters in first year and two semesters in the second year). Every semester ordinarily shall be of 21 week of duration inclusive of teaching and examination. The M.Sc. Economics Programme shall consist of total 110 credits and each paper shall consist of 05 (five) credits. The 05 credits shall be equivalent to 100 marks which shall be classified into the ratio of 70% external and 30% internal. However, the Seminar on Contemporary Issues, Viva-voce, Summer Training Seminar and Comprehensive Viva-voce shall consist of 2.5 credits each and shall be of 50 marks each as mentioned in the scheme. The division of marks is as under:

Internal Assessment (Internal)

Distribution of weightage of 30 marks of internal Assessment will be as per university Ordinance:

Minor Tests:		20 marks
Attendance & Co-curricular Activities (To be announced by the teacher)	:	10 marks
Max. Marks	:	100 marks
Passing Marks	:	40 marks

The Internal Assessment awarded to a student in any particular course will be based on performance of the students in two minor tests, Attendance and Co-curricular Activities (Assessment, Vivo-Voce, Presentation, Live assignment, Subject Quiz, Group Discussion, Case Study, etc.)

The students who fail in internal assessment as well as in aggregate will have the option to improve their score in the internal assessment giving a special chance to such students. However no student will be allowed to improve his/her score of internal assessment, if he/she has already scored 40% marks in aggregate as well in external examination. A student who could not secure 40% marks in external will have to reappear in the external examination of the respective paper as per university rules.

Instructions to the examiners and students for the Major Test of 70 marks:

The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.

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The Master of Science in Economics is a two-year full time programme. The course structure of the programme is given us under:

Semester -I						
Sr. No.	Title of the Paper	Work Load L--------P--------T			Number of Credit	Internal Marks + External Marks =Marks:100 (Total Credit:5)
Eco 101	Microeconomics-I	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 102	Macroeconomics-I	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 103	Statistics for Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 104	Mathematics for Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 105	Fundamentals of Corporate Finance	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 106	Seminar on Contemporary Issues*				2.5 Credit	Marks:50 (Total Credit:2.5)

*The seminar will be assessed by a committee of not less than two teachers nominated by the Director.

Semester-II						
Sr. No.	Title of the Paper	Work Load L----------P---------T			Number of Credit	Internal Marks + External Marks =Marks:100 (Total Credit:5)
Eco 201	Microeconomics-II	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 202	Macroeconomics-II	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 203	Development Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 204	Public Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 205	Research Methodology	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 206	Viva-voce (External)				2.5 Credit	Marks:50 (Total Credit:2.5)

M.Sc. Economics: List of Open Electives

Semester -II						
Sr. No.	Title of the Paper	Work Load L---------P----------T			Number of Credit	Internal Marks + External Marks =Marks:100 (Total Credit:5)
Eco OE 207	Contemporary Issues in Indian Economy	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 208	Environmental Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 209	Fundamentals of Data Analytics	4	0	1	5 Credit	30+70=100 (Total Credit:5)

Summer Training: At the end of the second semester, all the students will have to undergo summer training of 6 weeks with an industrial, business, service organization or NGO under the supervision of faculty member of the Department. Each student will be required to submit a training report along with a certificate issued by the concern where he/she has undertaken the summer training to the Director/Chairperson/Head of Department up to 31st August without late fees, for the purpose of evaluation in the third semester. Each student shall present a seminar on the training report before a committee of teachers constituted by the Director/ Chairperson/Head of the Department. The distribution of marks of Summer Training Report would be 50 marks for the seminar on training report and 50 marks for the written training report.

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Semester -III						
Sr. No.	Title of the Paper	Work Load L---------P---------T			Number of Credit	Internal Marks + External Marks =Marks:100 (Total Credit:5)
Eco 301	Contemporary Issues in Indian Economy	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 302	International Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
(The student shall select any one paper from Eco 303, Eco 304 and Eco 305)						
Eco 303	Financial Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 304	Industrial Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 305	Fundamentals of Data Analytics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
(The student shall select any one paper from Eco 306, Eco 307 and Eco 308)						
Eco 306	Financial Modelling using Excel	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 307	Economics of Infrastructure	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 308	Agriculture Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 309	Summer Training Seminar*				2.5 Credit	Marks:50 (Total Credit:2.5)

*The seminar will be assessed by a committee of not less than two teachers nominated by the Director.

Note: in addition to above 4 (four) papers, the students shall have to choose 01 (one) paper from the list of open elective papers.

M.Sc. Economics: List of Open Electives

Semester -III						
Sr. No.	Title of the Paper	Work Load L---------P---------T			Number of Credit	Internal Marks + External Marks =Marks:100 (Total Credit:5)
Eco OE 310	Counselling Skills for Managers	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 311	Fundamentals of Econometrics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 312	Personal Finance	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 313	Applications of Marketing	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 314	Export Import Procedures and Documentation	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 315	Corporate Governance and Business Ethics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 316	Econometric Method	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 317	Economics of Business Strategy	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco OE 318	Fundaments of Data Mining	4	0	1	5 Credit	30+70=100 (Total Credit:5)

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Semester-IV						
Sr. No.	**Title of the Paper**	**Work Load** L	P	T	**Number of Credit**	Internal Marks + External Marks =Marks:100 (Total Credit:5)
Eco 401	Economics of Business Strategy	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 402	Labour Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 403	Environmental Economics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
	(The student shall select either Eco 404 or any other two paper from Eco 405 to Eco 409)					
Eco 404	Research Project *	4	0	1	10 Credit	Marks:200 (Total Credit:10)
Eco 405	Financial Econometrics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 406	Industrial Organization	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 407	Advanced Econometrics	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 408	Applied Multivariate Analysis	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 409	Fundamentals of Data Mining	4	0	1	5 Credit	30+70=100 (Total Credit:5)
Eco 410	Comprehensive Viva-voce (External)				**2.5 Credit**	Marks:50 (Total Credit:2.5)

***Instructions Research Project:**

1. Research Project, which is compulsory should be from any of the specialization of the student, shall be equivalent two courses.
2. Students will have to register for the Research Project in semester III by submitting a synopsis along with consent of the supervisor in the Office of Department by 15th November.
3. Research Project will be accepted for submission and evaluation when at least one research paper out of the project work has been published or accepted in a research journal, or presented in any national conference/seminar.
4. If a student fails to do so, then he/she will have to give the presentation of the Research Project before a committee of teachers constituted by the Chairperson of the Department.
5. External examiner will evaluate the research project and will conduct viva-voce of 140 marks in the premises of department (for department students) and in the premises of affiliated institutes (for their respective students). However, the guide will submit the internal out of 60 marks separately.
6. The panel of examiner/experts will be provided by Chairperson/Head of Department. The internal examiner for assisting the external examiner for evaluation and conducting viva-voce will be appointed by the Chairperson of the Department.

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Detailed Syllabus follows...

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Semester - I

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Eco-101: Microeconomics-I

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Nature and scope of microeconomics; circular flow of economic activity, positive and normative economics, theorizing and modelling; theory of consumer behaviour: cardinal utility, indifference curve, revealed preference theory, derivation of consumer demand, Slutsky's theorem (substitution and income effect); market demand; elasticity of demand, relation between revenue and price elasticity, constant elasticity demand function; consumer surplus, indirect utility function.

Unit 2

Consumer behaviour under risk and uncertainty: concept of certainty, risk, and uncertainty, measurement of risk, attitudes towards risk, risk aversion, risk loving and risk neutral, risk aversion and indifference curves, reducing risk and uncertainty, insurance and gambling.

Unit 3

Theory of production: diminishing law of variable proportions, law of returns to scale, marginal rate of technical substitution, elasticity of substitution, factor intensity, efficiency of production, multi product firm, production possibility curve, Traditional and modern theories of cost, total, fixed and variable costs, short run and long run cost, relation between average and marginal costs, `envelope' and L-shaped curves.

Unit 4

Theory of firm: price and output determination under perfect competition, short run and long run equilibrium of the firm and industry, supply curve, efficiency implications of perfect competition, determination of price and output under monopoly; short run and long run equilibrium, price discrimination, regulated monopoly and monopoly control.

Suggested Readings

A. Koutsoyiannis. "Modern Microeconomics", International Edition, Palgrave Macmillan.
Jehle & Renne, "Advanced Microeconomic Theory", Pearson Education, India.
Mas-Colell, Andreu, Michael D.Whinston and Jerry R. Green, "Microeconomic Theory", OUP, New York.
Salvatore, Dominick, "Principles of Micro-Economics", Oxford University Press.
Varian, Hall R. "Microeconomic Analysis", W.W. Norton & Company, New York, London.
Sen, A. "Microeconomics: Theory and Applications", Oxford University Press, New Delhi.
Stigler, G. "Theory of Price", Prentice Hall of India, New Delhi.
Varian, H. "Intermediate Microeconomics: A Modern Approach" W.W. Norton, New York.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Eco 102: Macroeconomics-I

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Introduction, measurement of national income: product approach, income approach, expenditure approach; measures of aggregate income: concept of gross, net, national, domestic, market prices and factor costs, concept of value added; methodology of estimation of national income in India; GDP deflator, consumer and producer price index.

Unit 2

Classical macroeconomics; Say's law, equilibrium output and employment, New classical models of output determination, Keynes model of income determination, Consumption function: average and marginal propensity to consume, consumption hypothesis; permanent income hypothesis, relative income hypothesis, life cycle hypothesis.

Unit 3

Investment Function: Inducement to invest – Marginal efficiency of investment and Marginal efficiency of capital criterion; the accelerator and investment behaviour; Jorgenson's Model.

Unit 4

Demand for Money: Classical Approach to Demand for Money – Fisher and Cambridge; Keynesian approach - Liquidity Preference Theory: Transaction, Precautionary and Speculative Demand for Money; Milton Friedman's Approach – Wealth theory; Portfolio balance Approach – Baumol and Tobin.

Suggested Readings

Dornbusch, R. and S. Fischer. "Macroeconomics", McGraw-Hill.
Begg, D.K.H. "The Rational Expectation Revolution in Macro-economics", Oxford, Allan.
Davidson, Paul. "Post Keynesian Macroeconomic Theory", Aldershot, UK: Edward Elgar.
Mankiw, N.G. "Macroeconomics", Macmillan.
Romer, David. "Advanced Macroeconomics", New York: McGraw-Hill.
Olivier J. Blanchard. "Macroeconomics", Prentice Hall
Richard Froyen. "Macroeconomics", Pearson Education.
Jha, R. Contemporary. "Macroeconomic Theory and Policy", Wiley Eastern,
Mankiw, N.G. and D. Romer (eds.) "New Keynesian Economics", MIT, Cambridge.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Eco 103: Statistics for Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Descriptive statistics: measures of central tendency, spreadness, skewness and kurtosis; moments and moment generating functions

Unit 2

Probability theory: Laws of addition and multiplication; Conditional probability and concept of independence; Bayes theorem and its applications; Random variable; Discrete and Continuous random variables; Probability mass function and probability density functions; Properties (without derivations) of Binomial, Poisson and Normal distributions.

Unit 3

Correlation: Pearson's product moment and spearman's rank correlation-their properties; Partial and multiple correlations

Unit 4

Statistical Inference: Concept of an estimator and its sampling distribution; Desirable properties of a good estimator; Point and Interval estimation. Formulation of statistical hypotheses — Null and alternative; Type 1 and Type 2 errors, Goodness of fit; Confidence intervals and level of significance; Hypothesis testing based on standard normal, t, Chi-square and F tests;.

Suggested Readings

Gupta S. C. "Fundamentals of statistics", Himalaya Publishing house, New Delhi.
Gupta S.P. and Gupta M. P. "Business statistics", Sultan Chand and sons, New Delhi
Gupta S.C. and V.K. Kapoor, "Fundamentals of Applied Statistics", S. Chand and Sons New Delhi.
Speigal, M. R. "Theory and Problems of Statistics", McGraw Hill Book, London

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Eco 104: Mathematics for Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Concepts of sets subset and bounded set, set operations, convex set, identification of convex set in budget line statement, production possibility frontier, indifference and isoquant curves, Cartesian product, relations and functions, idea of polynomial, exponential, logarithmic and trigonometric functions; Solution of linear and quadratic equations; limit and continuity of functions (single variable).

Unit 2

Concept of a derivative and rules of differentiation: monotonicity, concavity and convexity of functions of a single variable; necessary and sufficient conditions for a maximum and minimum: applications to economics, total to marginal magnitudes, elasticities.
Idea of integration: definite and indefinite integral, rules of integration, applications in economics, relation between marginal and total magnitudes, relations between cost curves, consumer surplus.

Unit 3

Definitions of vector and matrix: addition and multiplication of matrices, transpose and inverse of a matrix, minors and co-factors of a matrix, determinant of a matrix, rank of a matrix, simultaneous system of equations, Cramer's rule, solution of homogeneous and nonhomogeneous system of equations; signs of quadratic forms with and without constraints, positive definite, negative definite, positive semi definite, negative semi- definite.
Functions of several variables: production functions, utility functions, cost functions; partial and total derivatives; implicit functions and their derivatives. Homogeneous functions;

Unit 4

Euler's theorem; degrees of homogeneity of production functions, cost functions, demand, functions and their economic interpretation,
Necessary and sufficient conditions for stationary values without constraints; necessary and sufficient conditions for stationary values with linear constraints- the Lagrange method; constrained maximization of utility.

Suggested Readings

Peter N. Hess, "Using Mathematics in Economic Analysis", Prentice Hall.
Akira Takayama, "Mathematical Economics ", Cambridge University Press, 2nd Edition.
Henderson and Quandant, "Microeconomic Theory: A Mathematical Approach" R. G. D. Allen, Mathematical Economics, .
Chiang, Alpha, C. "Fundamental Methods of Mathematical Economics", MC Grow Hill,

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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Eco 105: Fundamentals of Corporate Finance

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Investment Decisions: Capital Budgeting: Principles and techniques - Nature of capital budgeting-Identifying relevant cash flows - Evaluation Techniques: Payback, Accounting rate of return, Net Present Value, Internal Rate of Return, Profitability Index - Comparison of DCF techniques - Project selection under capital rationing - Inflation and capital budgeting - Concept and measurement of cost of capital - Specific cost and overall cost of capital

Unit 2

Financing and Dividend Decision: Financial and operating leverage - capital structure - Cost of capital and valuation - designing capital structure. Dividend policy - Aspects of dividend policy - practical consideration - forms of dividend policy - forms of dividends - share splits.

Unit 3

Working Capital Management: Principles of working capital: Concepts, Needs, Determinants, issues and estimation of working capital - Accounts Receivables Management and factoring - Inventory management - Cash management - Working capital finance: Trade credit, Bank finance and Commercial paper.

Unit 4

Long Term Sources of Finance: Indian capital and stock market, New issues market Long term finance: Shares, debentures and term loans, lease, hire purchase, venture capital financing, Private Equity.

Suggested Readings

M.Y. Khan and P.K. Jain, "Financial management-Text, Problems and Cases" Tata McGraw Hill,
M. Pandey, "Financial Management", Vikas Publishing House Pvt. Ltd.
Aswat Damodaran, "Corporate Finance Theory and practice", John Wiley & Sons.
James C. Vanhorne, "Fundamentals of Financial Management"PHI Learning.
Brigham, Ehrhardt, "Financial Management Theory and Practice", Cengage Learning.
Prasanna Chandra, "Financial Management", Tata McGraw Hill.
Srivatsava, Mishra, "Financial Management", Oxford University Press.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Eco 106: Seminar on Contemporary Issues

Maximum Marks: 50 (Total Credit:2.5)

Note: To be evaluated by the internal faculty.

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Semester - II

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Eco-201: Microeconomics-II

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Monopolistic competition; price and output decisions under monopolistic competition, equilibrium with product differentiation and selling costs, excess capacity under monopolistic and imperfect competition, criticism of monopolistic competition;

Unit 2

Oligopoly: non-collusive oligopoly, Cournot, Bertrand, Chamberlin, and kinked demand model, collusive and non-collusive oligopoly behaviour; cartels and mergers, price leadership and basing point price system.

Unit 3

A critique of Neoclassical theory of the firm; Alternative theories of the firm: Baumol's sales revenue maximization model, Williamson model of managerial discretion, Marris model of managerial enterprise, Bain's limit pricing theory, the behavioural model of Cyert and March.

Unit 4

Neoclassical theory of factor pricing: marginal productivity theory, product exhaustion theorem, elasticity of technical substitution, technical progress and factor shares, theory of distribution in imperfect product and factor markets, determination of rent, wages, interest and profits.

Suggested Readings

A. Koutsoyiannis. "Modern Microeconomics", International Edition, Palgrave Macmillan.
Jehle & Renne, "Advanced Microeconomic Theory", Pearson Education, India.
Mas-Colell, Andreu, Michael D.Whinston and Jerry R. Green, "Microeconomic Theory", OUP, New York.
Salvatore, Dominick, "Principles of Micro-Economics", Oxford University Press.
Sen, A. "Microeconomics: Theory and Applications", Oxford University Press, New Delhi.
Stigler, G. "Theory of Price", Prentice Hall of India, New Delhi.
Varian, H. "Intermediate Microeconomics: A Modern Approach" W.W. Norton, New York.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Eco 202: Macroeconomics–II

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Neo–classical and Keynesian Synthesis: The IS–LM model; Extension of IS–LM model with government sector, labour market and flexible prices, Relative effectiveness of monetary and fiscal policies.

Unit 2

Theory of Inflation : Classical, Keynesian and Monetarist approaches; Structuralist theory of inflation; Philips curve analysis – Short run and long run Philips curve; Natural Rate of Unemployment hypothesis; Tobin's modified Philips curve; Adaptive expectations and rational expectations; Policies to control inflation.

Unit 3

Business Cycles: Theories of Schumpeter, Kaldor, Samuelson, Hicks and Goodwin's model; Control of business cycles.

Unit 4

Macroeconomics in an Open Economy: Mundell–Fleming model–Asset markets, Monetary approach to balance of payments. Recent Developments in Macroeconomics: The New classical critique of micro foundations, the New classical approaches; Policy implications of New classical approach; New Keynesian Approach.

Suggested Readings

Ackley, G. "Macroeconomics: Theory and Policy", Macmillan, New York.
Blackhouse, R. and A. Salansi (Eds.) "Macroeconomics and the Real World" (2 Vols.), Oxford University Press, London.
Branson, W.A. "Macroeconomic Theory and Policy", (3rd ed.), Harper and Row, New York.
Dombusch, R. and F. Star, "Macroeconomics", McGraw Hill, Inc., New York.
Hall, R.E. and J.B. Taylor, "Macroeconomics", W.W. Norton, New York.
Heijdra, B.J. and V.P. Fred clock, "Foundations of Modern Macroeconomics" Oxford University Press, New Delhi.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Eco-203: Development Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Economic Development: Meaning and measurement, Features of underdeveloped economies, developing economies, determinants of economic development, Economic and noneconomic factors of development, Obstacles in growth and development, Arguments on Growth Vs Development, Sen's View, Role of state in economic development, Indicators of Development.

Unit 2

Social and Institutional Aspects of Development: Absolute and Relative, causes of poverty, trends in poverty, economic inequality, Kuznet inverted 'U' curve, Population problem and growth pattern - Theory of demographic transition; demographic dividend.

Unit 3

Development Strategies: Vicious circle of poverty; Theory of balanced and unbalanced growth; Rodan's big push; critical minimum effort thesis; import substitution and export promotion; investment allocation criteria, choice of technique.

Unit 4

Indian Development Experience: Growth and development experience of India since independence, Human development and quality of life, The population and economic development, occupational distribution of labour force; Poverty and Income distribution in India, Problems of unemployment and Rising prices.

Suggested Readings

Ghatak, S. "An Introduction to Development Economics", Allen and Unwin, London.
Debraj Ray. "Development Economics", Oxford University Press.
Meier, G.M. "Leading Issues in Economic Development", Oxford University Press, New Delhi,
Thirlwall, A.P. "Growth and Development", Macmillan, London.
Todaro, M.P. "Economic Development in Third World", Oxford University, London.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Eco 204: Public Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Allocation of resources – Provision of public goods; Voluntary exchange models; Impossibility of decentralized provision of public goods (contributions of Samuelson and Musgrave); Demand revealing schemes for public goods – Tiebout model, theory of club goods;

Unit 2

Stabilization Policy – Keynesian case of stabilization policy; Uncertainty and expectations; Failure of inter temporal markets; Liquidity preference; Social goals; Poverty alleviation; Provision of infrastructural facilities, removing distributional inequalities and regional imbalances.

Unit 3

Role of Government in an Economy - The Allocation, Distribution and The Stabilisation Functions; Private Goods, Public Goods, and Merit Goods; Market Failure - Imperfections, Decreasing Costs, Externalities; Wagner's law of increasing state activities; Wiseman- Peacock hypothesis; Pure theory of public expenditure; Structure and growth of public expenditure; Criteria for public investment; Social cost-benefit analysis – Project evaluation; Estimation of costs, discount rate; Reforms in expenditure budgeting; Programme budgeting and Zero base budgeting.

Unit 4

Theory of incidence; Alternative concepts of incidence – Allocative and equity aspects of individual taxes; Benefit and ability to pay approaches; Theory of optimal taxation; Excess burden of taxes; Trade-off between equity and efficiency; Theory of measurement of dead weight losses; The problem of double taxation.

Suggested Readings

Goode, R. "Government Finance in Developing Countries", TMH, New Delhi.
Jha. R. "Modern Public Economics", Routledge, London.
Musgrave, R.A. and P.B.Musgrage, "Public Finance in Theory and Practice", McGraw Hill, Kogakusha, Tokyo.
Atkinson, A.B. and J.E. Siglitz, "Lectures on Public Economics", TMH, New York.
Herber, B.P. "Modern Public Finance", Richard D. Irwin, Homewood.
Joseph E. Stiglitz, "Economics of the Public Sector"

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 205: Research Methodology

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Meaning and objectives of research, meaning and formulation of hypothesis, theory, models of a theory, testing of theories and models; Methodology versus methods of research: research problem and selection of research problem; review of literature and its role in selecting a research problem;

Unit 2

Meaning and need for research design: meaning of population, sample and sample size, meaning, types and characteristics of sample design, random and non-random sample, stratified and multistage random samples, systematic samples.

Unit 3

Methods of data collection: primary and secondary data sources, brief information about databases of Indian economy, nature of cross section, time series and panel data, diagrammatic and tabular presentation of data, pie chart, bar diagram, histogram, scatter diagram, tracing of curve, one way and two way tables.

Unit 4

Analysis of data: measures of central tendency and dispersion, Hypothesis testing: parametric and no-parametric tests of hypothesis; linear regression, simple, partial and multiple correlation coefficient, rank correlation, simple and multiple regression models, Multivariate analysis techniques: factor analysis, cluster analysis, conjoint analysis, multidimensional scaling, discriminant analysis, Analysis of variance; Report writing.

Suggested Readings

C.R. Kothari, "Research Methodology", Wiley Eastern Ltd., New Delhi,
Don. E. Ethridge, "Research Methodology in Applied Economics".
W.G. Cochran, "Sampling Techniques", John Wiley, New York,
W.J. Goode and P.K. Hatt, "Methods in Social Research", McGraw Hill, New York,
T.S. Wilkinson and P.L. Bhandarkar, "Methodology and Techniques of Social Research", Himalaya Publishing House, Bombay.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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G.J.U.S&T, Hisar

Eco 206: Viva voce (External)

Maximum Marks: 50 (Total Credit:2.5)

Note: To be evaluated by external examiners.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Open Electives: Semester II

Eco-207: Contemporary Issues in Indian Economy

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Changing structure of Indian economy, Imbalance in occupational pattern and contribution to GDP, Determinants of growth rate of GDP in India, Behaviour of saving and investment in recent years, Infrastructure bottlenecks in Indian economy, Impact of institutional factors on development of Indian economy.

Unit 2

Issues of productivity in agriculture sector and trends in its diversification; Issues of competitiveness of Indian manufacturing sector and emergence of knowledge intensive industries in India.

Unit 3

Centre-State finance relations; Recent Finance Commissions, NITI Ayog; other sources of transfer; Tax revenue of the central and state governments; evaluation of Indian tax structure; Goods and services tax in India.

Unit 4

Recent foreign trade policy in India; Composition and Direction of India's foreign trade, Indian government's policy towards foreign capital; foreign investment inflows, foreign aid and India's external debt.

Suggested Readings

Dhirendra Nath Konar, "Contemporary Issues of Indian Economy". Akansha Publishing House, Delhi,
Uma Kapila, "India's Economic Development since 1947 (Latest Edition),Academic Foundations,
Reserve Bank of India, Handbook of Statistics on Indian Economy (Latest editions),
Government of India, Ministry of Finance, "Economic Survey" (Latest editions),
Government of India, Planning Commission, "Union Budgets" (Latest editions)
Government of India, Minister of Commerce, Department of Commerce, "India's Foreign Trade Policy" (Latest),
Government of India, Department of Industrial Policy and Promotion, SIA Newsletters, FDI Factsheets (Various Issues),
Timothy Besley, "Contemporary Issues in Development Economics", Pulgrave Macmillan
Kaushik Basu. "The Oxford Companion to Economics in India"; Oxford University Press, New Delhi,
Mahendra Dev, S. "Inclusive Growth in India", Oxford University Press, New Delhi,

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco-208: Environmental Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Conceptual background of environmental economics; review of microeconomics and welfare economics; Distinction between environmental economics and natural resource economics.

Unit 2

Relation between development and environmental stress; Environmental Kuznet's curve hypothesis – theory and empirical evidence; concept of sustainable development; indicators of sustainability; various approaches to environmental accounting.

Unit 3

Sustainable development: Concepts; measurement
Issues of Environmental economics: Pareto optimality and market failure in the presence of externalities.

Unit 4

Market failure; Pigouvian solution; Buchanan's theory; Coase's theorem and its critique; Pigouvian *vs* Coasian solution; Subsidies for Abatement of pollution-The case in the short and long run; choice between taxes and quotas under uncertainty; implementation of environmental policy.

Suggested Readings

Robert N. Stavins (ed.), "Economics of the Environment: Selected Readings", W.W. Norton,
Maureen L. Cropper and Wallace E. Oates, "Environmental Economics: A Survey", Journal of Economic Literature, Volume 30, pp. 675-740.
Hanley, N., J.F. Shogren, and B. White, "Environmental Economics: In Theory and Practice", Oxford University Press.
Kolstad, C., "Environmental Economics", Oxford University Press.
Bhattacharya, R.N. "Environmental Economics – An Indian Perspective", Oxford University Press, Delhi.
Singh, K. and A. Sisodia, "Environmental Economics: Theory and Applications", Sage Publications, New Delhi.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics

Eco- 209: Fundamentals of Data Analytics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Data analytics: introduction, types of analytics, characteristics of analytics, business analytics, and business intelligence; business analytics process and its relationship with decision making process; Advantage of business analytics: informed decisions, developing distinct capability, creating competitive advantage, key attributes of analytical competitors.

Unit 2

Data-overview, sources of data, process for making sense of data; describing data-observations and variables, types of variables, central tendency, distribution of the data, confidence intervals, hypothesis tests.

Unit 3

Introduction to Predictive Analytics: overview, business intelligence, predictive analytics in relation to business intelligence, statistics, data mining; Big data, importance in decision making; Setting up problem-CRISP-DM, business understanding, Defining data, target variable and measures of success for predictive modelling; Methodology of predictive modelling.

Unit 4

Prediction Methods: Linear Regression- best subset selection, forward selection, backward selection, step-wise regression, Cp mallows and adjusted R-square criteria; k-Nearest Neighbors (k-NN); Regression Trees- CART, CHAID.

Suggested Readings

Davenport H., Harris J.G. and Morison R. "Analytics at Work: Smarter Decisions, Better Results", Harvard Business Review Press.

Schniederjans M.J., Schniederjans D.G. and Starkey C.M. "Business Analytics Principles, Concepts, and Applications with SAS: What, Why, and How", FT Press Analytics.

Myatt G.J. & Johnson W.P. "Making Sense of Data II: A Practical Guide to Data Visualization, Advanced Data Mining Methods, and Applications", Wiley Publication,

Maisel L. and Cokins G. "Predictive Business Analytics: Forward Looking Capabilities to Improve Business Performance" Wiley.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

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Semester - III

Chairperson
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G.J.U.S&T, Hisar

Eco-301: Contemporary Issues in Indian Economy

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Changing structure of Indian economy, Imbalance in occupational pattern and contribution to GDP, Determinants of growth rate of GDP in India, Behaviour of saving and investment in recent years, Infrastructure bottlenecks in Indian economy, Impact of institutional factors on development of Indian economy.

Unit 2

Issues of productivity in agriculture sector and trends in its diversification; Issues of competitiveness of Indian manufacturing sector and emergence of knowledge intensive industries in India.

Unit 3

Centre-State finance relations; Recent Finance Commissions, NITI Ayog; other sources of transfer; Tax revenue of the central and state governments; evaluation of Indian tax structure; Goods and services tax in India.

Unit 4

Recent foreign trade policy in India; Composition and Direction of India's foreign trade, Indian government's policy towards foreign capital; foreign investment inflows, foreign aid and India's external debt.

Suggested Readings

Dhirendra Nath Konar, "Contemporary Issues of Indian Economy". Akansha Publishing House, Delhi,
Uma Kapila, "India's Economic Development since 1947 (Latest Edition),Academic Foundations,
Reserve Bank of India, Handbook of Statistics on Indian Economy (Latest editions),
Government of India, Ministry of Finance, "Economic Survey" (Latest editions),
Government of India, Planning Commission, "Union Budgets" (Latest editions)
Government of India, Minister of Commerce, Department of Commerce, "India's Foreign Trade Policy" (Latest),
Government of India, Department of Industrial Policy and Promotion, SIA Newsletters, FDI Factsheets (Various Issues),
Timothy Besley, "Contemporary Issues in Development Economics", Pulgrave Macmillan
Kaushik Basu. "The Oxford Companion to Economics in India"; Oxford University Press, New Delhi,
Mahendra Dev, S. "Inclusive Growth in India", Oxford University Press, New Delhi,

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Eco-302: International Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

International economics: introduction, international trade and Nation's standard of living, current international economic problems;

Unit 2

Trade theories: concept of international trade, basis for and gains from trade, trade based on Absolute Advantages, Comparative advantages, Comparative advantages and opportunity cost; standard theory of trade: production frontier with increasing costs, community indifference curve, equilibrium in isolation.

Unit 3

Factor endowments and Hecksher-Ohlin Theory: factor intensity, factor abundance, factor price equalization, and income distribution, Stopler Samuelson theorem, Leontief paradox; Modern trade theory: economies of scale, imperfect competition, product differentiation.

Unit 4

International Trade Policy: Trade Restrictions; tariffs, partial equilibrium analysis of a tariff, theory of tariff structure, general equilibrium analysis of tariff in small country and large country, optimum tariff; non-tariff barriers: import quotas, other non-tariff barriers and new protectionism, political economy of protectionism.

Suggested Readings

Bhagwati, J. (Ed), "International Trade", Selected Readings, Cambridge University Press, Massachusetts.
Kindleberger, C.P. "International Economics", R.D. Irwin, Homewood.
King, P.G. "International Economics and International Economics Policy A Reader", MC Grow Hill International, Singapore.
Salvatore, D. "International Economics", Prentice Hall, N.J. New York.
Soderston, B.O. "International Economics," Macmillan Press Ltd, London.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 303: Financial Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Introduction to Financial Markets: Capital markets, consumption and investments with and without capital markets, market places and transaction costs and the breakdown of separation; Fisher separation theorem; the agency problem; maximization of shareholder's wealth

Unit 2

Theory of Uncertainty : Axioms of choice under uncertainty; utility functions; expected utility theorem; certainty equivalence, measures of risk-absolute and relative risk aversions; stochastic dominance-first order, second order and third order; measures of investment risk-variance of return, semi-variance of return, shortfall probabilities,

Unit 3

Mean-Variance Portfolio Theory : Measuring portfolio return and risks, effect of diversification, minimum variance portfolio, perfectly correlated assets, minimum variance opportunity set, optimal portfolio choice; mean-variance frontier of risky and risk-free asset, portfolio weights

Unit 4

Index Models, CAPM & APT : Models of asset returns, multi index models, single index model, systematic and specific risk, equilibrium models-capital asset pricing model, capital market line, security market line, estimation of beta,; arbitrage pricing theory

Suggested Readings

Copeland, T. E. and J. F. Weston, "Financial Theory and Corporate Policy", Addison Wesley,
Brealey, R. and S. Myers, "Principles of Corporate Finance", New York, McGraw Hill,
Elton, E.J and M.J. Gruber, "Modern Portfolio Theory & Investment Analysis", John Wiley & Sons,
Houthakker, H.S. and P.J. Williamson, "Economics of Financial Markets", Oxford University Press.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco-304: Industrial Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Concept and organisation of firm ownership, control and objectives of a firm, Theories of Industrial Location; Factors Affecting Location,

Unit 2

Structural Approach: the S-C-P paradigm, Structural characteristics of the market, Its Welfare implications, Market Concentration, Industrial Clusters, and Barriers to entry

Unit 3

Industrial Diversification, Growth and constraints on the Growth of the Firm, Concepts and Measurement of Productivity, Efficiency, and Capacity Utilisation.

Unit 4

Regional Development and concept of core competency of different regions, Theories of competitiveness

Suggested Readings

Barthwal, R.R. "Industrial Economics", Wiley Eastern Ltd., New Delhi.
Divine, P.J. and R.M. Jones *et. al.* "An Introduction to Industrial Economics", George Allen and Unwin Ltd, London.
Singh, A. And A.N. Sadhu, "Industrial Economics", Himalaya, Publishing House, Bombay
Kuchal, S.C. "Industrial Economy of India", Chaitanya Publishing House Allahabad.
Hay, D. And D.J. Morris, "Industrial Economics: theory and Evidence", University Press, New Delhi.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco- 305: Fundamentals of Data Analytics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Data analytics: introduction, types of analytics, characteristics of analytics, business analytics, and business intelligence; business analytics process and its relationship with decision making process; Advantage of business analytics: informed decisions, developing distinct capability, creating competitive advantage, key attributes of analytical competitors.

Unit 2

Data-overview, sources of data, process for making sense of data; describing data-observations and variables, types of variables, central tendency, distribution of the data, confidence intervals, hypothesis tests.

Unit 3

Introduction to Predictive Analytics: overview, business intelligence, predictive analytics in relation to business intelligence, statistics, data mining; Big data, importance in decision making; Setting up problem-CRISP-DM, business understanding, Defining data, target variable and measures of success for predictive modelling; Methodology of predictive modelling.

Unit 4

Prediction Methods: Linear Regression- best subset selection, forward selection, backward selection, step-wise regression, Cp mallows and adjusted R-square criteria; k-Nearest Neighbors (k-NN); Regression Trees- CART, CHAID.

Suggested Readings

Davenport H., Harris J.G. and Morison R. "Analytics at Work: Smarter Decisions, Better Results", Harvard Business Review Press.

Schniederjans M.J., Schniederjans D.G. and Starkey C.M. "Business Analytics Principles, Concepts, and Applications with SAS: What, Why, and How", FT Press Analytics.

Myatt G.J. & Johnson W.P. "Making Sense of Data II: A Practical Guide to Data Visualization, Advanced Data Mining Methods, and Applications", Wiley Publication,

Maisel L. and Cokins G. "Predictive Business Analytics: Forward Looking Capabilities to Improve Business Performance" Wiley.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics

Eco- 306: Financial Modelling using Excel

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Financial Analysis: Financial statements & Statement Analysis – Income statements, current assets, valuing inventories for balance sheet, capital & cash flow analysis, Ratio analysis. Financial planning & control – budgeting & planning cycle, forecasting & projections, measuring quality.

Unit 2

Investment Decisions – PV, NPV, IRR, Multiple Internal rate of returns.

Unit 3

Investment Analysis: Portfolio models- Mean & variances, efficient portfolio, Betas & Security Market Line; Value at risk;

Unit 4

Option pricing models- option payoffs, option strategies, Binomial option pricing model, Black - Scholes model; Bond & Duration - Duration mean and pattern, immunization strategies; Modelling the terms structure.

Suggested Readings

Carlbeng, Canard, "Business Analysis with Microsoft EXCEL", QUE Press.
Benninga, Siman, "Financial Modelling", The MIT Press.
Palepo, Healy Benard, "Business Analysis & Valuation: Using Financial Statements".
Gupta, V., "Financial Analysis Using Excel", VJ Books.
Holden, Craigtr, "Spreadsheet Modelling in Corporate Finance", Prentice-Hall.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 307: Economics of Infrastructure

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Infrastructure and economic development– Infrastructure as a public good; Social and physical infrastructure; Special characteristics of public utilities. The peak load, Off load problem; Dual principle controversy; Economies of scale of joint supply; Marginal cost pricing vs. other methods of pricing in public utilities; Cross subsidization – free prices, equity and efficiency.

Unit 2

The structure of transport costs and location of economic activities; Demand for transport – Models of freight and passenger demand; Model choice; Cost functions in the transport sector; Principle of pricing; Special problems of individuals modes of transport; Inter-model condition in the Indian situation.

Unit 3

Rate making in telephone utilities; Principles of decreasing costs in telephone industry – Measurement of standards of service in telephone and postal utilities.
Primacy of energy in the process of economic development; Factors determining demand for energy; Effects of energy shortages; The search for an optimal energy policy in the Indian context.

Unit 4

Bulk supply and pricing of electricity – The relative economics of thermal, hydel and nuclear power plants – The case for a National Power Grid, financing water utilities - Urban and rural water supply; The exploitation of National Gas; Pricing problem.

Suggested Readings

National Council of Applied Economic Research, "India Infrastructure Report: Policy Implications for Growth and Welfare", New Delhi.
Parikh, K.S. "India Development Report", Oxford, New Delhi.
Economics of Infrastructure), Vol. VI, ICSSR, ICSSR.
Crew, M.A. and P.R. Kleindorfer, "Public Utility Economics", MacMillan, New York.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 308: Agriculture Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Nature and scope of agricultural economics; economic development with unlimited supplies of labour; Lewis-Fei-Ranis model; Lewis versus the Harris-Todaro view of underemployment in LDCs, wage spill over and unemployment in a wage- gap economy; measurement problems of surplus labour and disguised unemployment; theory of agricultural production, three stages of production function.

Unit 2

Agricultural labour force and productivity: farm size and productivity, supply functions and price responsiveness, contractual arrangements, employment and wages in rural markets; interdependence between agricultural and industry; terms of trade between agriculture and industry.

Unit 3

Rural credit markets and institutions in developing countries; rural infrastructure prospects and strategies for land reforms; some theoretical aspects of agricultural policies; agricultural diversification, food processing, and standardisation.

Unit 4

Agricultural development strategies: induced technical and institutional change, green revolution; microeconomics of the rural sector; the new development economics; risk and uncertainty in agriculture, environment and agricultural a development; WTO and agriculture.

Suggested Readings

A.P. Thirlwall, "Growth and Development", ELBS.
D Ray, "Development Economics", OUP.
S. Ghatak, "Introduction to Development Economics", Rutledge.
Kaushik Basu, "Analytical Development Economics-The Less Developed Economy Revisited," OUP.
D. Lal, "The Poverty of Development Economics", OUP.
G. Meier, "Leading issue in Economic Development", OUP.
Meier and Rauch, "Leading Issues in Economic Development", OUP
M.P. Todaro and S.C. Smith, "Economic Development", Pearson.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson

Eco 309: Summer Training Seminar

Maximum Marks: 50 (Total Credit:2.5)

Note: To be evaluated by the internal faculty.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Open Electives – Semester III

Eco OE 310: Counselling Skills for Managers

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Objective: *To develop basic skills among students to independently handle a wide range of employee counselling and performance counselling.*

Course Contents:

UNIT-I

Introduction to Counselling- Emergence, Growth, Definition, Need, Goal, Role and Characteristics of Counsellor and Counselee, Difference between Counselling and Psychotherapy, and General Principles of Counselling.

UNIT-II

Approaches to Counselling- Psycho-analytical (Sigmund Freud Theory), Therapeutic (Alfred Adler Theory), Behaviouristic (B. F. Skinner Theory), Cognitive (Albert Ellis Model) and Humanistic Approaches (Carl Rogers Approach);

UNIT-III

Counselling Process- 5-D Model, the Phases of Counselling Process, Counselling Environment and Procedure, and the Core Conditions of Counselling; Counselor's Attitude and Skills of Counselling- Verbal and Non-verbal Communication Modalities, Listening Skills, Listening Barriers and Strategies to Overcome Listening Barriers;

UNIT-IV

Organizational Applications of Counselling Skills- Identifying Problems and Coping Strategies with regard to Occupational Stress and Performance Management; Special Problems in Counselling- Selection of Counselling Strategies and Interventions, Changing Behaviour through Counselling; Ethical and Legal Aspects of Counselling, and Current trends in Counselling.

Suggested Readings:

1. Cormer, L.S., and Hackney, H., *The Professional Counselor's Process Guide Helping*, Englewood Cliffs, Prentice Hall Inc.
2. Moursund, J., *The Process of Counselling and Therapy*, Englewood Cliffs, Prentice Hall Inc.
3. Munro, C A, *Counselling: A Skills Approach*, Methuen.
4. Reddy, Michael, *Counselling at Work*, British Psychological Society and Methuen.
5. Rao, S. Narayana, *Counselling and Guidance*, Tata McGraw Hill.
6. Gladding, S. T, *Counselling- A Comprehensive Profession*, Pearson.
7. Singh, Kavita, *Counselling Skills for Managers*, Prentice Hall of India.

Note:

1. The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
2. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco OE – 311: Fundamentals OF Econometrics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Objective: *Econometrics is concerned with quantifying economic relations, with the provision of numerical estimates of the parameters involved and testing hypotheses embodied in economic relationships. This course aims to provide a basic introduction to econometric analysis, to enable students to examine existing theories with empirical data. In doing so, it examines the difficulties inherent in confronting theory with business data in order to quantify relationships, in dealing with errors and problems in variables which can be only observed but not controlled, and the means of compensating for uncertainty in data.*

Course Contents: UNIT-I
Nature, scope and methodology of econometrics; Simple Linear Regression Model: Assumptions, Procedures and properties of OLS estimator, Co-efficient of determination, Tests of significance, Maximum Likelihood Method.

UNIT-II
Multiple Linear Regression Analysis: Method of least squares, Properties of OLS estimator, Test of significance of regression coefficients, R2 and adjusted R2; Econometric Problems: Multicollinearity, Autocorrelation and Hetroscedasticity.

UNIT-III
Dummy variables-Nature and uses, Regression on dummy variables, Regression on Dummy Dependent Variable-The basic idea of the Linear Probability Model (LPM), Probit and Logit Models. Dynamic Econometric Models: Koyck distributed lag model, the adaptive expectation model, and the partial adjustment model.

UNIT-IV
Simultaneous Equation Models: Structural, Reduced and final forms, Identification-Order and rank conditions, Methods for estimating the simultaneous models-Basic idea of Indirect Least Square (ILS) and Two Stage Least Square (2SLS) methods. Seemingly Unrelated Regressions (SUR), SUR versus OLS.

Suggested Readings:
1. Greene, William H., *Econometric Analysis*, Macmillan.
2. Johnston, J., *Econometric Methods*, McGraw -Hill.
3. Gujrati, Damodor N., *Basic Econometrics*, McGraw-Hill.
4. Stock J. H. and Watson M.W. *Introduction to Econometrics*, Addison-Wesley Series in Economics, 2nd Edition (2006).
5. Koutsoyiannnis, A., *Theory of Econometrics*, Harper & Row.
6. Kmenta, J., *Theory of Econometrics*, Macmilan.
7. Maddala, G.S., *Introduction to Econometrics*, Macmillan.

Note:
1. The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
2. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco OE – 312: Personal Finance

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Objective: *The main objective of this course is to make students learn the various aspects of personal finance.*

Course Contents:

UNIT-I

Personal Finance: Meaning and importance. Financial planning: meaning, process and role of financial planner. Risk profiling: client data analysis, life cycle, wealth cycle. Asset allocation: Strategic, Tactical, Fixed and Flexible.

UNIT-II

Risk Management: Meaning, process and importance. Distinguish between risk assessment, risk management and risk avoidance. Assessment of requirement of Health Insurance, Life Insurance and General Insurance. Choice of products for risk coverage.

UNIT-III

Investment Management: meaning and importance. Investment avenues: equity, debt, gold, real estate, mutual funds, exchange traded funds. Portfolio management: meaning, construction, evaluation and revision. Loan management: meaning, types, importance and assessment.

UNIT-IV

Tax planning: basics terms of income tax, advance tax, tax deduction at source, deductions under section 80C, 80 CCC, 80 D and 80 G. Taxation of investment products. Retirement planning. Management of nomination, power of attorney and will.

Suggested Readings:

1. Kapoor Jack R, *Personal Finance*, The McGraw-Hill companies.
2. Huang. Stanley S C and Randall, Maury R., *Investment Analysis and Management.* Allyn and Bacon.
3. Gaungully, Ashok, *Insurance Management*, New Age Publishers, New Delhi.
4. Ahuja, G K & Gupta Ravi, *Systematic Approach to Income Tax*, Allahabad, Bharat Law House.
5. Pandian, *Security Analysis and Portfolio Management*, Vikas Publishing House, New Delhi.

Note:

1. The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
2. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco OE-313: Applications of Marketing

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Objective: *The main objective of this course is to acquaint the students with the various aspects of applications of the marketing principles in corporate world.*

UNIT-I

Consumer Behaviour: Introduction to consumer behaviour, Interrelationship between Consumer Behaviour and Marketing Strategy, Consumer Decision Making Process.

Sales and Distribution: Introduction to Sales, Its Importance, objectives and functions; sales territories and quota; Distribution Channels: Role of Distribution Channels, Distribution Channels.

UNIT-II

Retailing: Introduction to Retailing; Organised Vs Unorganised retailing, Types of Retailers.

Online marketing: Introduction to online marketing, retail websites, comparison shopping engines, social networks and online communities, social media listening.

UNIT-III

Marketing of Services: Introduction to Services, Characteristics of Services compared to Goods, Gap model of Service Quality, Service classification. Advertising: Introduction to Advertising, Role of advertising in the marketing process, Developing and managing an advertising program.

UNIT-IV

Industrial Marketing: Meaning and Concept of Industrial Marketing, Types of Industrial Customers, Classification of Industrial Products, Industrial Buying Process. Rural Marketing: Introduction to rural markets in India, Classification of products and services in rural marketing, rural demand and problems in rural marketing.

Suggested Readings:

1. Schiffman, L., & Wisenblit, J., *Consumer Behaviour*, Prentice Hall PTR.
2. Still, Richard R., Edward W. Cundiff, and Norman A.P. Govoni: *Sales Management*, Prentice Hall, New Delhi.
3. Christopher Lovelock, Jochen Wirtz and Jayanta Chatterjee, *Services Marketing*, Pearson Education
4. Bowersox and Others, *Physical Distribution Management*, Tata McGraw Hill, New Delhi.
5. Levy Micheal, Weitz Barton A. And Pandit Ajay, *Retailing Management*, Tata McGraw Hill, New Delhi
6. Havalder, Krishna K., *Industrial Marketing*, TMH, New Delhi.
7. George E. Belch, Michael A. Belch and Keyoor, Purani, *Advertising and Promotion,* McGraw Hill Education.
8. Charlesworth, A., *Internet Marketing: A Practical Approach*, BH Publications.
9. Acharya S. S. and Agarwal N. L., *Agricultural Marketing in India*, Oxford & IBH Publishing Co.

Note:

1. The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
2. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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Eco OE-314: Export Import Procedures and Documentation

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Objective: *The aim of the course is to acquaint the students with the export-import procedures and documentation*

Course Contents:

UNIT-I

Export Preliminaries, Documentation in international trade: Aligned Documentation System (ADS); Commercial documents, Regulatory documents, Documents related to goods, shipment, payment, inspection and legal regulated documents, Official machinery for consultation.

UNIT-II

Export contract: Distinction between domestic sales contract and export sales contract, Major laws for export contracts, Elements in export contracts, Dispute settlement, Role of ICC; INCOTERMS, Containerization.

UNIT-III

Export order processing; shipping and custom clearance of export and import cargo; central excise clearance; Role of clearing and forwarding agents. Types of risks in international trade, Cargo Insurance and claim Procedures

UNIT-IV

Methods of payment in international trade; documentary collection of export bills, UCPDC guideline, Instruments of payments, Pre-shipment and post-shipment finance, Negotiation of documents with banks, Main Provisions of FEMA; Procedure and documentation for availing export incentives.

Suggested Readings:

1. C. Rama Gopal, *Export Import Procedures, Documentation and Logistics*, New Age International Publishers, New Delhi.
2. M. D. Jitendra, *Export Procedures and Documentation*, Rajat Publications.
3. Pervin Wadia, *Export Markets and Foreign Trade Management*, Manishka Publications.
4. Paras Ram, *Export: What, Where and How*, Anupam, Publications.
5. Government of India, Handbook *of Import - Export Procedures*.
6. Nabhi's *Exporters Manual and Documentation.*
7. Nabhi's *New Import-Export Policy Procedures*

Note:

1. The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
2. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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Eco OE-315: Corporate Governance and Business Ethics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Objective: *The objective of this course is to sensitize the students about the various ethical and corporate governance issues in business management in the current environment.*

UNIT-I
Evolution of corporate governance; developments in India; regulatory framework of corporate governance in India; SEBI guidelines on corporate governance; reforms in the Companies Act.

UNIT-II
Corporate management vs. governance; internal constituents of the corporate governance; key managerial personnel (KMP); chairman- qualities of a chairman, powers, responsibilities and duties of a chairman; chief executive officer (CEO), role and responsibilities of the CEO.

UNIT-III
Introduction to Business Ethics: The concept, nature and growing significance of Ethics in Business, Ethical Principles in Business, Ethics in Management, Theories of Business Ethics, Ethical Issues in Business, Business Ethics in 21st Century.

UNIT-IV
Ethics in various functional areas of Business: Ethics in Finance, Ethics in HRM, Ethics in Marketing, Ethics in Production and Operation Management.

Suggested Readings:
1. Mallin, Christine A., *Corporate Governance (Indian Edition)*, Oxford University Press, Delhi.
2. Blowfield, Michael, and Alan Murray, *Corporate Responsibility*, Oxford University Press.
3. Francesco Perrini, Stefano, and Antonio Tencati, *Developing Corporate Social Responsibility-A European Perspective*, Edward Elgar.
4. Sharma, J.P., *Corporate Governance, Business Ethics & CSR*, Ane Books Pvt Ltd, New Delhi.
5. Manuel G. Velasquez, *Business Ethics*, Pearson Prentice Hall.
6. Ravindranath B. & Narayana B., *Business Ethics*, Vrinda Publications Pvt. Ltd

Note:
1. The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course.
2. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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Open Electives Semester- III

Eco: 316 Econometric Method

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Regression Analysis: Linear regression model, two variables and multi variables, BLUE property, general and confidence approach to hypothesis testing, partial effects and elasticity, goodness of fit, model evaluation, matrix approach to linear regression models

Unit 2

Extension of Linear Regression Models: Consequences and detection of multicollinearity, heteroskedasticity, and autocorrelation; and remedial measures

Unit 3

Dummy Variables: Regression on qualitative and quantitative variables, dummy variable trap, structural stability of regression models, Chow test, piecewise linear regression model

Unit 4

Simultaneous Equation Models: Simultaneity bias, structural versus reduced form, identification: rank versus order condition, exact and over identifications, methods of estimation including indirect least squares, two-stage least squares.

Suggested Readings

Wooldridge, J., "Introductory Econometrics: A Modern Approach", South Western
Ramanathan, R., "Introductory Econometrics with applications", Thomson Asia Private Limited,
Gujarati, N.D., "Basic Econometrics", McGraw Hill,
Johnston, J., "Econometric Methods", McGraw Hill
Brooks, C., "Introductory Econometrics for Finance", Cambridge University Press,

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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Eco-317: Economics of Business Strategy

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Theory of the Firm and its Objectives, Boundary of a firm, Change in boundary of a firm (Mergers and acquisitions),

Unit 2

Entry Deterrence, Accommodation and Exit Mergers and acquisitions, Fixed costs as barriers to entry, sunk costs and pre-commitment, the taxonomy of business strategies, entry deterrence, limit pricing, predation.

Unit 3

Product Differentiation and Pricing Strategies, Characteristic Approach, the notion of product space, equilibrium in price and location, Pricing- Cost plus pricing, bundling, auction, quality and pricing, limit pricing theory

Unit 4

Rationale of Firm in Market economy, Resource Based view of Firm, Component of Value Creation, - Architecture, Reputation, and Knowledge, Competitive Advantage of a Firm: Concept, Value Creation, Cost Advantage, Origin of Competitive Advantage- Creative Destruction, Innovation, Etc.

Suggested Readings

Andreu Mas- Colell, Michael D. Whinston & Jerry R. Green, "Microeconomic Theory", Oxford University Press.
Timorthy C. G. Fisher& Robert G. Waschik, "Managerial Economics: A Game Theoretic Approach", Routeledge.
Paul Milgram & John Roberts, "Economics, Organization & Management", Prentice Hall.
D.N. Sengupta & Anandya Sen, "Economics of Business Policy", Oxford University Press.
Steven E Landsberg, "Price Theory & Application", Dryden.
Walter Nicholson, "Microeconomic Theory", Thomson.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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Eco-318: Fundaments of Data Mining

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Introduction to Data Mining: basic concepts in data mining, machine learning, scientific methods, theoretical basis of data mining process, data measurement, exploratory data analysis, data visualization, measurement of data similarity and dissimilarity.

Unit 2

Data Processing: overview, data cleaning, data integration, data reduction, data transformation and data discretization; Data Warehouse and Online Analytics Processing: data warehouse, data cube and OLAP, data warehouse design and usage; Data Cube Technology- data cube computation, and its methods.

Unit 3

Principles of Data Mining: predictive modelling- classification and regression, model fitting as optimization, evaluation of predictive performance, over fitting, regularization; clustering and pattern detection.

Unit 4

Text Mining: information retrieval and search, text classification, unsupervised learning; Web Data Analysis: Web data- collection and interpretation, analyzing user browsing behavior, learning from click through data, predictive modelling and online advertising, link analysis and the Page Rank algorithm. Social Network Analysis: descriptive analysis of social networks, network embedding and latent space models, network data over time: dynamics and event-based networks link prediction.

Suggested Readings

Han J., Kamber M. , Pei J. "Data Mining: Concepts and Techniques", The Morgan Kaufmann Series in Data Management Systems.

Provost F. "Data Science for Business: What you need to know about data mining and data-analytic thinking", O'Reilly Media.

Miner G. and Nisbet R. "Handbook of Statistical Analysis and Data Mining Applications", Academic Press.

Ledolter J. "Data Mining and Business Analytics with R", Wiley.

Witten I.H. and Frank E. "Data Mining: Practical Machine Learning Tools and Techniques", The Morgan Kaufmann Series in Data Management Systems.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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Semester - IV

Eco-401: Economics of Business Strategy

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Theory of the Firm and its Objectives, Boundary of a firm, Change in boundary of a firm (Mergers and acquisitions),

Unit 2

Entry Deterrence, Accommodation and Exit Mergers and acquisitions, Fixed costs as barriers to entry, sunk costs and pre-commitment, the taxonomy of business strategies, entry deterrence, limit pricing, predation.

Unit 3

Product Differentiation and Pricing Strategies, Characteristic Approach, the notion of product space, equilibrium in price and location, Pricing- Cost plus pricing, bundling, auction, quality and pricing, limit pricing theory

Unit 4

Rationale of Firm in Market economy, Resource Based view of Firm, Component of Value Creation, - Architecture, Reputation, and Knowledge, Competitive Advantage of a Firm: Concept, Value Creation, Cost Advantage, Origin of Competitive Advantage- Creative Destruction, Innovation, Etc.

Suggested Readings

Andreu Mas- Colell, Michael D. Whinston & Jerry R. Green, "Microeconomic Theory", Oxford University Press.
Timorthy C. G. Fisher& Robert G. Waschik, "Managerial Economics: A Game Theoretic Approach", Routeledge.
Paul Milgram & John Roberts, "Economics, Organization & Management", Prentice Hall.
D.N. Sengupta & Anandya Sen, "Economics of Business Policy", Oxford University Press.
Steven E Landsberg, "Price Theory & Application", Dryden.
Walter Nicholson, "Microeconomic Theory", Thomson.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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G.J.U.S&T, Hisar

Eco-402: Labour Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Labour – Its Characteristics; Role of Labour in Economic Development, Mobility and productivity of labour. Supply of Labour: Static Labour-Leisure Choice, Effects of Social Programs and Income Taxes, The Life-Cycle Model, Investments in Human Capital, Collective Models of Household Labour Supply, Occupational Choice;

Unit 2

Demand of Labour: Static Cost, Profit and Labour Demand Functions, Elasticity of Derived Demand: the Hicks-Marshall Rules, Adjustment Costs and Dynamic Labour Demand; Equilibrium in Labour Market: Compensating Differences, Efficiency Wages, Segmented Labour Markets, Migration.

Unit 3

Classical, Neo-classical and Bargaining Theories of Wage Determination; Concepts of Minimum Wage, Living Wage and Fair Wage in Theory and Practice; Discrimination in Labour Markets; Productivity and Wage Relationship; Analysis of Rigidity in Labour Markets; National Wage Policy; Wages and Wage Boards in India; Bonus System and Profit Sharing.

Unit 4

Theories of Origin and Growth of Labour Movement - Growth, Pattern and Structure of Labour Unions in India, Achievements and Failures of Labour Unions; Industrial Relations -Industrial Disputes and industrial Peace; Causes of industrial Disputes and their Settlement and Prevention Mechanism.

Suggested Readings

Campbell R. McConnell, Stanley L. Brue, and David A. Macpherson's "Contemporary Labour Economics", Student Edition
George J. Borjas, "Labour Economics" McGraw-Hill,
Pierre Cahuc and Andre Zylberberg, "Labour Economics", the MIT Press.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco-403: Environmental Economics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Conceptual background of environmental economics; review of microeconomics and welfare economics; Distinction between environmental economics and natural resource economics.

Unit 2

Relation between development and environmental stress; Environmental Kuznet's curve hypothesis – theory and empirical evidence; concept of sustainable development; indicators of sustainability; various approaches to environmental accounting.

Unit 3

Sustainable development: Concepts; measurement
Issues of Environmental economics: Pareto optimality and market failure in the presence of externalities.

Unit 4

Market failure; Pigouvian solution; Buchanan's theory; Coase's theorem and its critique; Pigouvian *vs* Coasian solution; Subsidies for Abatement of pollution-The case in the short and long run; choice between taxes and quotas under uncertainty; implementation of environmental policy.

Suggested Readings

Robert N. Stavins (ed.), "Economics of the Environment: Selected Readings", W.W. Norton,
Maureen L. Cropper and Wallace E. Oates, "Environmental Economics: A Survey", Journal of Economic Literature, Volume 30, pp. 675-740.
Hanley, N., J.F. Shogren, and B. White, "Environmental Economics: In Theory and Practice", Oxford University Press.
Kolstad, C., "Environmental Economics", Oxford University Press.
Bhattacharya, R.N. "Environmental Economics – An Indian Perspective", Oxford University Press, Delhi.
Singh, K. and A. Sisodia, "Environmental Economics: Theory and Applications", Sage Publications, New Delhi.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco- 404: Research Project

Maximum Marks: 200 (Total Credit :10)

Note: To be evaluated jointly by internal and external examiner within the department before the end of final semester examination.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 405: Financial Econometrics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Univariate Smoothing Methods: Moving average, Weighted moving average, Exponential smoothing, Seasonal indexes, Trend-seasonal and Holt-Winters smoothing.

Unit 2

Stationary Time Series Models: Stochastic process, Stationarity, Modelling AR, MA, ARM processes, Deterministic and stochastic trends, unit roots, Testing unit roots – Dickey &Fuller, Phillips and Perron tests.

Unit 3

Return volatility: ARCH, GARCH ,EGARCH and other variations.

Unit 4

Multivariate Models: Intervention analysis, Transfer function models, VAR analysis – Estimation, Identification and the Impulse response function. Long run Models: Cointegration – Eagle-Granger Methodology, Johanson approach, Error correction models, Granger Causality, Exogeniety,

Suggested Readings

Delurgio Stephen A., "Forecasting Principles and Applications", McGraw-Hill.
Patterson K., "An Introduction to Applied Econometrics", Palgrave.
Enders Walter, "Applied Econometrics Time Series", John Wiley.
Diehold Francis X., "Elements of Forecasting", South Western, Thomson.
Spyros G. Makridakis, Steven C. Wheelwright & Rob J. Hyndman, "Forecasting Methods & Application", John Wiley.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 406: Industrial Organization

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Economic Organization and Efficiency: Concept and rationale of formal organization within the market economy, Market structure and Market power,

Unit 2

Efficiency: Efficiency of resource allocations, Efficiency of organization, The Task of Coordination and Motivation: need for information, organizational methods for achieving coordination, Transaction Cost Analysis: Coase Theorems,

Unit 3

Coordination: Market and Management, Price and coordination, Using the price system within the organization, Coordinating plans and action: Economizing on information and communication, coordination and business strategy, management, Decentralization and the means of coordination.

Unit 4

R&D and Innovation and Quality Value of innovation, innovation race, patents, optimal patent length, research joint ventures, governments and international R&D races, network externalities, standards and compatibility, Innovation-durability trade-off.

Suggested Readings

Paul Milgrom & John Roberts, "Economics, Organization & Management", Prentice Hall,
Luis M.B. Cabral, "Industrial Organization", Jaico Publishing House,
Sengupta, D.N. & Anadiya Sen, "Economics of Business Policy", Oxford University Press,
Luis M.B. Cabral, "Introduction to Industrial Organization", Cambridge Mass: The MIT Press,
Carlton, D. W. & J.M. Perloff, "Modern Industrial Organization", Warper Collins,
Caves, R.E., "Multinational Enterprise and Economic Analysis", Cambridge University Press.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 407: Advanced Econometrics

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Distributed Lag Models: Formation of expectations, naïve expectation versus adaptive expectations models, partial adjustment models, distributed lag models; Koyck's model, Almon lag, polynomial distributed lag models, rational expectations models.

Unit 2

Limited Dependent Variable Models: Introduction to binary variables, limitation of LPM, logistic curve, Probit and Logit models.

Unit 3

Panel data Models: Introduction to panel data, pooled model, within and between estimators, fixed effects, random effects, Hausman test, one way and two way model, random coefficients, dynamic panel data models.

Unit 4

Stationary Time Series: Autocorrelation and partial autocorrelation, auto regressive and moving average models, conditions for stationary and invertible process, Box-Jenkins approach, simple exponential smoothing and choice of parameter, seasonal models with trend, seasonal decomposition

Suggested Readings

Hamilton, J. D., "Time Series Analysis", Princeton University Press,
Enders, W., "Applied Econometric Time Series", John Wiley and Sons,
Wooldridge, J. M., "Econometric Analysis of Cross Section and Panel Data", MIT Press,
Greene, W.H. "Econometric Analysis", Pearson Education Inc.,

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
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G.J.U.S&T, Hisar

Eco-408: Applied Multivariate Analysis

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Multivariate Analysis: Concept, the variate, Measurement scales, Measurement error, Methodology of Model Building. Multivariate Analysis of Variance: One independent variable at two levels and one dependent variable, two-group MANOVA, Multiple-group MANOVA, MANOVA for two independent variables or factors. Repeated Measure Analysis of Variance: Between-subject and within-subject factors and designs, univariate & multivariate approaches to repeated measure analysis.

Unit 2

Principal Components Analysis: Geometry of principal components analysis, analytical approach, issues relating to the use of principal components analysis, use of principal components scores. Factor Analysis: Basic concepts and terminology of factor, objectives of factor analysis, geometric view of factor analysis, factor analysis techniques-principal components factoring (PCF), principal axis factoring, factor analysis versus principal components analysis, factor rotation, factor scores.

Unit 3

Discriminant Analysis: Geometric view, analytical approach, classification methods, Fisher's linear discriminant, Mahalanobis distance. Canonical Correlation: Geometry of canonical correlation, analytical approach, canonical variates and the canonical correlation, statistical significance tests for the canonical correlations, interpretation of the canonical variates, practical significance of the canonical correlation. Cluster Analysis: Hierarchical clustering, Nonhierarchical Clustering.

Unit 4

Structural Equation Modelling: Path Analysis, Confirmatory Factor Analysis, Structured Means Models.

Suggested Readings

Tinsley, Harward E and Brown Stered D., "Handbook of Applied Multivariate Statistical and Mathematical Modelling", Academic Press.
Morrison D F. "Multivariate Statistical Analysis", McGraw Hill.
Overall J E and Klett C. "Applied Multivariate Analysis", McGraw Hill.
Hair, Anderson, Tatham and Black, "Multivariate Data Analysis", Pearson.
Nargundlar, R. "Marketing Research", Tata McGraw Hill.
Johnson Richard A and Wichern Dean W. "Applied Multivariate Statistical Analysis", PHI.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco-409: Fundaments of Data Mining

Maximum Marks: 100 (Total Credit: 5)
Internal Assessment: 30 External Assessment: 70
Time Allowed: 3 Hours

Course Contents

Unit 1

Introduction to Data Mining: basic concepts in data mining, machine learning, scientific methods, theoretical basis of data mining process, data measurement, exploratory data analysis, data visualization, measurement of data similarity and dissimilarity.

Unit 2

Data Processing: overview, data cleaning, data integration, data reduction, data transformation and data discretization; Data Warehouse and Online Analytics Processing: data warehouse, data cube and OLAP, data warehouse design and usage; Data Cube Technology- data cube computation, and its methods.

Unit 3

Principles of Data Mining: predictive modelling- classification and regression, model fitting as optimization, evaluation of predictive performance, over fitting, regularization; clustering and pattern detection.

Unit 4

Text Mining: information retrieval and search, text classification, unsupervised learning; Web Data Analysis: Web data- collection and interpretation, analyzing user browsing behavior, learning from click through data, predictive modelling and online advertising, link analysis and the Page Rank algorithm. Social Network Analysis: descriptive analysis of social networks, network embedding and latent space models, network data over time: dynamics and event-based networks link prediction.

Suggested Readings

Han J., Kamber M. , Pei J. "Data Mining: Concepts and Techniques", The Morgan Kaufmann Series in Data Management Systems.

Provost F. "Data Science for Business: What you need to know about data mining and data-analytic thinking", O'Reilly Media.

Miner G. and Nisbet R. "Handbook of Statistical Analysis and Data Mining Applications", Academic Press.

Ledolter J. "Data Mining and Business Analytics with R", Wiley.

Witten I.H. and Frank E. "Data Mining: Practical Machine Learning Tools and Techniques", The Morgan Kaufmann Series in Data Management Systems.

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks.

Chairperson
Department of Economics
G.J.U.S&T, Hisar

Eco 410: Comprehensive Viva voce (External)

Maximum Marks: 50 (Total Credit: 2.5)

Note: To be evaluated by external examiners.

Chairperson
Department of Economics
G.J.U.S&T, Hisar