

Humanities, Economics, Arts and Rural Technologies

| Sl. No | New Course code | Name of Course | L-T-P-C | Proposed Level (UG/PG) |
|--------|-----------------|--|----------------|------------------------|
| 1 | HS 101 | 1-Introduction to Fine Arts: Urban Dance in India: A Brief & Partial Introduction in Theory & Practice | 0-0-1-1 (P/NP) | UG |
| 2 | HS 102 | 1-Design thinking and Creativity | 1-0-0-1 | UG |
| 3 | HS 103 | 2-Introduction to Fine Arts: Urban Dance in India: A Brief & Partial Introduction in Theory & Practice | 0-0-1-0 (P/NP) | UG |
| 4 | HS 106 | 2-Design thinking and Creativity | 1-0-0-0 | UG |
| 5 | HS 201 | Economics | 3-0-0-6 | UG |
| 6 | HS 202 | Wellness Software's | 1-0-0-2 | UG |
| 7 | HS 401 | Basics of Accounting & Financial Management | 3-0-0-6 | UG |
| 8 | HS 402 | Technological Entrepreneurship | 3-0-0-6 | UG |
| 9 | HS 403 | Happiness and Well-Being | 2-1-0-6 | UG |
| 10 | HS 404 | Applied Ethics | 3-0-0-6 | UG |
| 11 | HS 405 | Innovation and Social Entrepreneurship | 3-0-0-6 | UG |
| 12 | HS 406 | Introduction to Game Theory | 3-0-0-6 | UG |
| 13 | HS 407 | Macroeconomics | 3-0-0-6 | UG |
| 14 | HS 408 | Introductory Psychology | 0.5-0-0-1 | UG |
| 15 | HS 409 | Philosophy | 3-0-0-6 | UG |
| 16 | HS 410 | Modernism and the 'Hero' | 3-0-0-6 | UG |
| 17 | HS 420 | Introduction to Literature | 3-0-0-6 | UG |
| 18 | HS 421 | Intellectual Property Management | 3-0-0-6 | UG |
| 19 | HS 422 | Principles of Finance: Instruments & Investment | 3-0-0-6 | UG |
| 20 | HS 423 | Introduction to Linguistics | 3-0-0-6 | UG |
| 21 | HS 424 | Psychology | 3-0-0-6 | UG |
| 22 | HS 425 | Sociology | 3-0-0-6 | UG |
| 23 | HS 426 | Basic Econometrics | 3-0-0-6 | UG |
| 24 | HS 427 | Visual Narratives | 3-0-0-6 | UG |
| 25 | HS 428 | Indian Economy: An Analytical Perspective | 3-0-0-6 | UG |

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| 26 | HS 429 | International Finance | 3-0-0-6 | UG |
| 27 | HS 430 | Critical Thinking | 3-0-0-6 | UG |
| 28 | HS 431 | Energy Economics and Policy | 3-0-0-6 | UG |
| 29 | HS 432 | Principles of Finance: Portfolio Theory and Financial Engineering | 3-0-0-6 | UG |
| 30 | HS 601 | Communication Skills | P/NP | PG |
| 31 | HS 602 | Literary Theory and Criticism | 4-0-0-8 | PG |
| 32 | HS 603 | Interdisciplinary Approaches to Literary Research | 4-0-0-8 | PG |
| 33 | HS 604 | Advanced Econometrics | 3-1-0-8 | PG |
| 34 | HS 605 | History of Economic Thought | 3-0-0-6 | PG |
| 35 | HS 606 | Meta-ethics | 4-0-0-8 | PG |
| 36 | HS 607 | Research Methodology in Humanities and Social Sciences | 4-0-0-8 | PG |
| 37 | HS 608 | Principles of Microeconomics | 3-0-0-6 | PG |
| 38 | HS 609 | Applied Game Theory | 3-0-0-6 | PG |
| 39 | HS 610 | Seminar on selected topics in Advanced Economic | 2-0-0-4 | PG |
| 40 | HS 620 | Normative Ethics | 4-0-0-8 | PG |
| 41 | HS 621 | Modernism: Theory and Literature | 4-0-0-8 | PG |
| 42 | HS 622 | Postmodernism: Theory and Literature | 3-0-1-8 | PG |
| 43 | HS 623 | Literature and Philosophy | 4-0-0-8 | PG |
| 44 | HS 910 | Seminar | 4 credits | - |
| 45 | HS 433 | Introduction to Indian Knowledge systems-2 (IICS-2) | 3-0-0-6 | UG |
| 46 | HS 434 | Contemporary Indian Economy | 3-0-0-7 | UG |
| 47 | HS 624 | Research Methodology in Philosophy | 3-0-0-6 | PG |
| 48 | HS 625 | Problems in Applied ethics | 3-0-0-6 | PG |
| 49 | HS 435 | Introduction to Industrial Organization | 3-0-0-6 | PG |
| 50 | HS 911 | Seminar-II | 0-0-4-4 | - |
| 51 | HS 902 | Macroeconomics | 3-0-0-6 | PG |
| 52 | HS 436 | Introduction to Indian Knowledge systems-2 (IICS-2) | 3-0-0-6 | UG |
| 53 | - | Money, Banking and Finance | 3-0-0-6 | PG |
| 54 | - | Introduction to Sustainable Development | 3-0-0-6 | UG |
| 55 | - | Shakespeare on Screen | 3-0-0-6 | UG |
| 56 | - | Kannada-1 | 3-0-0-6 | UG |
| 57 | - | Marathi-1 | 3-0-0-6 | UG |

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| 58 | HS 437 | Sanskrit-1 | 3-0-0-6 | UG |
| 59 | HS 438 | Introduction Music-1 | 3-0-0-6 | UG |
| 60 | - | Introduction to Industrial Organization | 3-0-0-6 | UG |
| 61 | - | National Cultural Appreciation (NCA) | - | UG |

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| 1 | Title of the course (L-T-P-C) | 1-Introduction to Fine Arts: Urban Dance in India: A Brief & Partial Introduction in Theory & Practice (0-0-1-1) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | Body and Movement, Classical Dance in India, Contemporaneity: Modern & Postmodern Forms & Modes of Sustenance for a Dancer, Experimenting, Making Your Own Dance Work (Dance-pieces). |
| 4 | Texts/References | |

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| 1 | Title of the course (L-T-P-C) | 1-Design thinking and Creativity (1-0-0-1) |
| 2 | Pre-requisite courses(s) | Nil |
| 3 | Course content | <ol style="list-style-type: none"> 1. Problem Exploration- Students move around and find problems that need solutions. 2. They analyze the problem (not solution) and evolve a problem space. The problem space is converted into a story board and presented in a poster session. 3. Feedback at the poster session is used to refine the problem definition(s). 4. Solution Exploration: Creative solutions (solution space) are now explored and presented using story boards. 5. The solutions are converted into “embodiments” |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. “Stuff Matters” Prof. Mark Miodownik, Penguin 2. “ Design and Technology” by James Garratt, Cambridge University Press. 3. How it works in the home: Walt Disney:9780894340482- Amazon.com. 4. How it works in the City (Walt Disney available on Amazon.com) 5. Change by design – Tim Brown There are some additional books in this “How it Works” series. |

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| 1 | Title of the course (L-T-P-C) | 2-Introduction to Fine Arts: Urban Dance in India: A Brief & Partial Introduction in Theory & Practice (0-0-1-0) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | Body and Movement, Classical Dance in India, Contemporaneity: Modern & Postmodern Forms & Modes of Sustenance for a Dancer, Experimenting, Making Your Own Dance Work (Dance-pieces) |
| 4 | Texts/References | -- |

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| 1 | Title of the course (L-T-P-C) | 2-Design thinking and Creativity (1-0-0-0) |
| 2 | Pre-requisite courses(s) | Nil |
| 3 | Course content | <ol style="list-style-type: none"> 6. Problem Exploration- Students move around and find problems that need solutions. 7. They analyse the problem (not solution) and evolve a problem space. The problem space is converted into a story board and presented in a poster session. 8. Feedback at the poster session is used to refine the problem definition(s). 9. Solution Exploration: Creative solutions (solution space) are now explored and presented using story boards. 10. The solutions are converted into “embodiments” |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. “Stuff Matters” Prof. Mark Miodownik, Penguin 2. “Design and Technology” by James Garratt, Cambridge University Press. 3. How it works in the home: Walt Disney :9780894340482- Amazon.com. 4. How it works in the City (Walt Disney available on Amazon.com) 5. Change by design – Tim Brown There are some additional books in this “How it Works” series. |

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| 1 | Title of the course (L-T-P-C) | Economics (2-1-0-6) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | <p>Basic economic problems. resource constraints and Welfare maximizations. Nature of Economics: Positive and normative economics; Micro and macroeconomics, Basic concepts in economics. The role of the State in economic activity; market and government failures; New Economic Policy in India. Theory of utility and consumer choice. Theories of demand, supply and market equilibrium. Theories of firm, production and costs. Market structures.</p> <p>Perfect and imperfect competition, oligopoly, monopoly. An overview of macroeconomics, measurement and determination of national income. Consumption, savings, and investments. Commercial and central banking. Relationship between money, output and prices. Inflation - causes, consequences and remedies. International trade, foreign exchange and balance payments, stabilization policies : Monetary, Fiscal and Exchange rate policies.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. P. A. Samuelson & W. D. Nordhaus, Economics, McGraw Hill, NY, 1995. 2. A. Koutsoyiannis, Modern Microeconomics, Macmillan, 1975. R. Pindyck and D. L. Rubinfeld, Microeconomics, Macmillan publishing company, NY, 1989. 3. R. J. Gordon, Macroeconomics 4th edition, Little Brown and Co., Boston, 1987. 4. William F. Shughart II, The Organization of Industry, Richard D. Irwin, Illinois, 1990. 5. R.S. Pindyck and D.L. Rubinfeld. Microeconomics The (7th Edition), Pearson Prentice Hall, New Jersey, 2009. 6. R. Dornbusch, S. Fischer, and R. Startz. Macroeconomics (9th Edition), McGraw-Hill Inc. New York, 2004. |

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| 1 | Title of the course (L-T-P-C) | Wellness Software's (1-0-0-2) |
| 2 | Pre-requisite courses(s) | Calculus I |
| 3 | Course content | <p>SELF AWARENESS: Understanding, feelings, thoughts, sensations & behavior, Understanding Mind Body Connection Yoga & Meditation</p> <p>MANAGING ENVIRONMENTS EFFECTIVELY: Building Interpersonal skills, Team building Skills</p> <p>Student-Teacher Relationships MANAGING LIFE STYLES Understanding & Managing Relationships, Managing Break ups, Understanding and Managing Family Relationships, Life Skills & Resilience Building</p> <p>GADGET HYGIENE, ADDICTIONS, MENTAL ILLNESS Managing Screen Time, Addictive Substances & Life Gadget hygiene, Awareness of Mental illness & Suicide Prevention</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Daniel Goleman, Emotional Intelligence, Published by Bloomsbury, 1995 Edition (ISBN: 9780747528302, 0747528306) 2. Scott Peck, the road less travelled, Published by Penguin, 1996 Edition (ISBN:9780099727408, 0099727404) 3. Mitch Albom, Tuesdays with Morrie, published by Hachette, (ISBN: 9780751527377, 0751527378) 4. Frankl Viktor E., Man's search for meaning, Published by Penguin, 2008 edition, (ISBN: 9781846041242, 1846041244) 5. Clifford T Morgan, Richard A King, John R Weisz and John Shopler, Introduction to Psychology, Published by McGrawhill, 7th Edition, 2004, (ISBN: 9780074622506, 0074622501) |

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| 1 | Title of the course (L-T-P-C) | Basics of Accounting & Financial Management (3-0-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | Basics of financial accounting like accounting principles, understanding balance sheet, profit and loss account, cash flow statements, analysis of financial performance. Basics of Managerial Accounting cover introduction to managerial accounting, cost classifications, C-V-P Analysis, use of cost information for decision making; Evolution of finance as an independent subject; operating environment of finance manager, fundamental concepts of finance: Risk & Return and Time value of money: Capital budgeting techniques: the concept of working capital and working capital policy: management of current assets and current liabilities. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. James Jambalvo, Managerial Accounting, Wiley India Edition 2. R Narayanaswamy, Financial Accounting-A Managerial Perspective, PHI Learning 3. Prasanna Chandra, Fundamentals of Financial Management, Tata McGraw Hill Education Pvt Ltd Principles of Corporate Finance-Richard A Brealey & Steward C Myers (McGraw Hill Pubs) 4. James C Van Horne , Financial Management and Policy, PHI Pubs 5. Ross, Westerfield & Jaffe , Corporate Finance, Tata McGraw Hill 6. Aswath Damodaran, Corporate Finance-Theory and Practice, John Wiley & Sons 7. Brigham & Houston, Fundamentals of Financial Management, Thomson, |

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| 1 | Title of the course (L-T-P-C) | Technological Entrepreneurship (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | <p>Introduction to Entrepreneurship - Characteristics of an Entrepreneur, Understanding Self, Phases of Entrepreneurship, Understanding the Business Context of Technological Entrepreneurship; Identifying and Evaluating Opportunities, Understanding Problem- solution Fit, Product-Market Fit, Value Proposition, Business Model Canvas, Understanding and creating Minimum Viable Product, Agile Product Development and Developing a Proof of Concept; IP for Entrepreneurs - Patents, Trade Marks, Copyrights, Design Protection, Domain Names and Trade Secrets; Preparing a Business Plan: Finding Funding- Bootstrapping, Crowdfunding, Angel Investing, Venture Capital, Bank Loans, Competition and Awards, Pitching for funding; Finance and Accounts; Market Research and Competitive Analysis, Going to market for Technology /Products / Services, Sales & Marketing, Customer Development; Technology Venture Creation and Management - How to start a Start-up and scale up, Role of Incubators and Accelerators, Operation Management; Legal Matters and Commercial Knowledge: Creativity, Motivation, Team Building & Leadership, Role of Mentors and Consultants: Social Innovations and Entrepreneurship : Success and Failure Stories.</p> <p>This course introduces entrepreneurship through lectures, seminars, case studies, readings and assignments to broadly expose students to the area. Some of the topics will be covered, with experience sharing from practitioners and investors. Students may choose the seminars, readings and assignments of their interests and can work on live cases including opportunity discovery and evaluation, validation, market research and competitive analysis, business plan preparation, start-up creation, financing, social entrepreneurship and innovation, etc.</p> |
| 4 | Texts/References | Reading material and case studies will be provided. |

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| 1 | Title of the course (L-T-P-C) | Happiness and Well-Being (2-1-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | <p>In this course, we will explore the concept and different definitions of happiness and well-being, and the connection between happiness, positive attitude, relationships and the purpose and meaning of life. Techniques to achieve happiness in life will be studied. The course will be primarily participatory in nature with class discussions, presentations and journal assignments. The course material will be taken from a variety of sources. The causes that disturb the harmony in life will be analysed and practices to address this satisfactorily will be investigated. The methods of yoga, pranayama different meditation paths and healing techniques will be evaluated so that each student can adopt a suitable combination to suit her needs. Assignments will be aimed at a better understanding of oneself and the society and the environment that we live in.</p> <p>Learning Objectives. After studying this course, the students will be able to:</p> <ul style="list-style-type: none"> ● Identify key psychological, social, cultural and biological factors in happiness and well being ● Understand the relationship between happiness, human connections, and qualities such as compassion, altruism, and gratitude ● Describe the principles behind the specific activities that boost happiness ● Apply lessons from positive & social psychology to their personal and professional lives, enhancing their self-understanding ● Practice research-tested techniques for enhancing happiness ● Analyze human nature in terms of the three gunas and the Pancha kosha model of beings. ● Adopt methods of yoga and meditation for self-improvement and social well-being <p>Course Contents Happiness and wellbeing: definitions and measurement. The Hedonic tradition. Role of social connections in fostering happiness. Kindness and compassion, altruism and happiness, Success, money and happiness. Cooperation, reconciliation and happiness. Mindfulness, attention and focus. Mental habits of happiness: self-compassion, flow, and optimism. The Pursuit of Happiness: Does Being Good or Bad Produce More Happiness? Understanding the Causes of “Suffering.” Cultivating Right” Attention and “Right” Desire. Meaningful Relationships. The strong links between gratitude and happiness. Curiosity, Play, and Creativity. The art of letting go. Finding Your Happiness Fit and the New Frontiers. Happiness and Meaning in Life Yoga, Pancha koshas and Gunas: Guna concept: sawt, rajas and tamas and balancing the gunas. Ashtanga Yoga: Yama, Niyama, Asana and Pranayama Pratyahara, Dharana and Dhyana. Vipassana Meditation and Reiki Kindness and compassion, altruism and happiness, Success, money and happiness. Cooperation, reconciliation and happiness. Mindfulness, attention and focus. Mental habits of happiness: self-compassion, flow, and optimism. The Pursuit of Happiness: Does Being Good or Bad Produce More Happiness? Understanding the Causes of “Suffering.” Cultivating Right” Attention and “Right” Desire. Meaningful Relationships. The strong links between gratitude and happiness. Curiosity, Play, and Creativity. The art of letting go. Finding Your Happiness Fit and the New Frontiers. Happiness and Meaning in Life Yoga. Pancha koshas and Gunas: Guna concept: satwa, rajas and tamasand balancing the gunas. Ashtanga Yoga: Yama, Niyama, Aasana and Pranayama Pratyahar,Dharana and Dhyana.Vipassana Meditation and Reiki</p> |

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| 1 | Title of the course (L-T-P-C) | Applied Ethics (3-0-0-6) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | <p>Normative Ethics consists of fundamental theories of morality. The central question in Normative Ethics is the following. What is the standard/norm to decide the rightness or wrongness of an action? Or what gives an act a moral worth? The following are the main approaches to such questions.</p> <p>Consequentialist Theories Immanuel Kant's Deontological Ethics Virtue Ethical Theories</p> <p>Using the theoretical frameworks in Normative Ethics, some actual ethical issues are studied. Thus, we have some issues or problems in Applied Ethics. Under Applied Ethics, the following topics will be covered.</p> <p>Business ethics, institutional ethics, ethics of the media, issues of medical ethics and environmental ethics.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. MacKinnon, Barbara, and Andrew Fiala. 2015. <i>Ethics Theory and Contemporary Issues</i>. CT: Cengage Learning, Stamford, USA 2. Sher, George (ed.) 2012. <i>Ethics: Essential Readings in Moral Theory</i>. Routledge. New York. 3. Cohen, Andrew I, and Christopher Heath Wellman (eds.) 2005. <i>Contemporary Debates in Applied Ethics</i>. Blackwell Publishing, Oxford, UK. 3. Frey R. G, and Christopher Heath Wellman (eds) 2005. <i>A Companion to Applied Ethics</i>. Wiley-Blackwell, Oxford, UK. 4. Peter, Singer (Ed.).1986. <i>Applied Ethics</i>, OUP, UK. |

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| 1 | Title of the course (L-T-P-C) | Innovation and Social Entrepreneurship (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | <p>The objective of this course is to apply advanced knowledge in science and technology to problems that are socially and economically relevant and to create and nurture social entrepreneurs. Students are expected to undertake a 6-8 weeks' project concerned with societal/ rural issues. The focus will be to enhance income and to improve the quality of life of the population at the bottom of the pyramid. Some illustrative examples are as follows:</p> <ul style="list-style-type: none"> ➤ Value added Agriculture ➤ Waste to Wealth ➤ Low cost housing ➤ Affordable health care ➤ Potable Water supply ➤ Sustainable energy and energy efficiency ➤ Environment protection and Sustainability Any other projects that address societal problems. <ul style="list-style-type: none"> • Students shall select a topic of social relevance and align with the above objectives and study the problem in detail. • Students shall try to find out and evaluate solutions which are techno-commercially viable and have the potential to be scaled up to reach out to uplift the life of millions. • Develop a business model that will make it a sustainable social enterprise. <p>The course will involve self-study under the guidance of an instructor, a few guest lectures by practitioners and/or visit to a social enterprise.</p> <ul style="list-style-type: none"> ➤ The students shall select the project in consultation with the course instructor. ➤ After carrying out the project, the student will submit a report and give a presentation highlighting the observations/results of the project and proposed business plan. This will be reviewed and graded. |
| 4 | Texts/References | <p>Social Innovation and Social Entrepreneurship: Fundamentals, concepts and Tools Luis Portales</p> <p>Palgrave Macmillan This will be supplemented by Indian case studies</p> |

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| 1 | Title of the course (L-T-P-C) | Introduction to Game Theory (3-0-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | Definition of games, normal form and strategies, Best response, dominance, Nash equilibrium, Iterated elimination of dominated strategies, Mixed strategies. Applications: oligopoly, tariffs, crime, conflict, voting and auctions. Bayesian games and applications. Extensive form games, backward induction and sub game perfect equilibrium and applications. Perfect Bayesian equilibrium. Repeated games. Bargaining games and applications. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. An Introduction to Game Theory by M. O. Osborne, Indian ed. (2012), Oxford University Press. 2. Game Theory by Drew Fudenberg & Jean Tirole, MIT Press (1991) 3. Strategy: An Introduction to Game Theory by Joel Watson, 2nd ed. (2013), VivaBooks. |

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| 1 | Title of the course (L-T-P-C) | Macroeconomics (3-0-0-6) |
| 2 | Pre-requisite courses(s) | HS201 |
| 3 | Course content | <ol style="list-style-type: none"> 1. Introduction: The major macroeconomic issues-Economic Growth, Inflation, Unemployment, Inequalities in Distribution of Income and Wealth, Financial Stability, Sustainable Balance of payments. 2. National Income (NI): Concepts, Definitions and Identities, Approaches to measurement of NI, Limitations and Omissions in Measurement of NI 3. Major Schools of thought in Macroeconomics: <ol style="list-style-type: none"> 3.1. Classical and Neoclassical Schools of Thought: Theories of output, employment, prices and interest rate, Quantity theory of money, Cash Transactions and Cash Balance versions, Classical dichotomy. 3.2. Keynes and Keynesians-Aggregate Demand, Aggregate Supply, Consumption (Savings) Function and Investment Multiplier, Output Determination, Role of Government-Monetary and Fiscal Policies in Growth Promotion, Demand for Money: Active and Idle cash balances, Liquidity Preference and Liquidity Trap, Phillips Curve, Inflation-Unemployment trade-off, IS-LM Model and Policy Effectiveness 3.3. Monetarism: Restatement of Quantity Theory of Money, Stability of Demand Function for Money, Expectations Augmented Phillips Curve, Adaptive Expectations, Short-run vs Long-run Phillips Curve 3.4. New Classicists: Rational Expectations, Lucas Critique and Policy Ineffectiveness, Rules vs Discretion, Monetary Policy Rules: Friedman, Taylor and McCallum Rules 3.5. New Keynesians: Sticky Wages and Prices and Coordination Failures, Asymmetric Information and Moral Hazard, Adverse Selection 3.6. New Consensus Macroeconomics. 4. Inflation: Measurement, Causes, Consequences and Remedies 5. Fiscal Policy: Growth and Equity, concepts of deficits, internal and external debt, debt vs money financing, sustainability of debt. 6. Opening the Economy: Balance of payments, Exchange rates- nominal and real, bilateral and effective, exchange rate systems, fixed vs flexible exchange rates |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Dilip M. Nachane, 2019, Critique of the New Consensus Macroeconomics and Implications for India, Springer Nature Switzerland AG 2. Macroeconomics by G. Mankiw, Worth Publishers, 7th edition (2009). 3. Macroeconomics by R. Dornbusch, S. Fisher & R. Startz, McGraw- Hill education, 11th edition (2017). 4. Errol D'Souza, Macroeconomics, 2/e, Pearson Education, 2012. 5. Macroeconomics Theories and Practices by R. T. Froyen, Pearson Education India, 10th edition (2013). |

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| 1 | Title of the course (L-T-P-C) | Introductory Psychology (0.5-0-0-1) |
| 2 | Pre-requisite courses(s) | |
| 3 | Course content | <p>Subject-matter of Psychology : Major processes. Basic and applied fields. Emotions. Personality. Psychology of adjustment: Coping with stress. Perception; Learning and Memory. Higher cognitive processes. Social issues.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Essential Psychology – Banyard, Davies, Norman & Winder (Sage Publications, 2012) 2. Psychology: The science of mind and behaviour- Passer & Smith (McGraw-Gill, 2013) |

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| 1 | Title of the course (L-T-P-C) | Philosophy (0.5-0-0-1) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | <ol style="list-style-type: none"> 1. What is Philosophy? (Philosophy in India and West) 2. Main Branches of Philosophy 3. Three Laws of Thought 4. Epistemology and Logic (Indian and Western) 5. Metaphysics (Universal and Particular, Substance and Attributes, Causality, Space, Time, Soul, God, Freedom) 6. Three Great Greek Philosophers: Socrates, Plato and Aristotle 7. Modern Philosophy: Rationalism and Empiricism (Descartes, Locke, Berkeley and Hume) 8. Ethics (Utilitarianism, Categorical Imperative of Kant, Ethical Relativism, Bio-Medical Ethics, Ethical Issues) 9. Indian Philosophy Component (Nishkama-karma of Gita, Virtue Ethics of Buddhism, Advaita Vedanta). Meaning of Life. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Ganeri, Jonardon, Philosophy in Classical India: An Introduction and Analysis (London: Routledge, 2001). 2. Maritain, Jacques, An Introduction of Philosophy (New York and Oxford: Rowman & Littlefield, 2005). 3. Mohanty, J. N. Classical Indian Philosophy: An Introductory Text (New York and Oxford: Rowman & Littlefield, 2000). 4. Nagel, Thomas, What Does It All Mean? A Short Introduction to Philosophy (Oxford: Oxford University Press, 2004). 5. Russel, Bertrand, The Problems of Philosophy (Oxford: Oxford University Press, Reprint by Kalpaz Publication, 2017). 6. Sharma, Chandradhar, A Critical Survey of Indian Philosophy (Delhi: Motilal Banarsidass, 2016). 7. Thilly, Frank, A History of Philosophy (New Delhi: SBW Publishers, 2018). 8. Williams, Bernard, Morality: An Introduction to Ethics (Cambridge: Cambridge University Press, 2012). |

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| 1 | Title of the course (L-T-P-C) | Modernism and the 'Hero' (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | Fiction/Non-Fiction of Franz Kafka, Albert Camus, Saadat Hasan Manto, Samuel Beckett, among others. |
| 4 | Texts/References | |

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| 1 | Title of the course (L-T-P-C) | Introduction to Literature (3-1-0-6) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | What is Literature, Genres of Literature, Literary Texts and Co Major Themes in Literature |
| 4 | Texts/References | Glossary of Literary Terms by MH Abrams, The Norton Antho of Poetry edited by Margaret Ferguson, Animal Farm by Geor Orwell, The Penguin Book of Modern Indian Short Stories- Stephen Alter, Oxford Book of English Short Stories Reissue Edition (English, Paperback, A. S. BYATT), Three Theban Pl Antigone; Oedipus the King; Oedipus at Colonus (English, Paperback, Sophocles) |

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| 1 | Title of the course (L-T-P-C) | Intellectual Property Management (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | <p>Historical Development of Intellectual Property in Industrialised Society, Patent Basics, Patent Systems around the world, Application of patents in different technology areas including Software and Business Methods, How to read a Patent, Introduction to Patent Databases and Analysis Tools, Patent Searching and Analysis, Use of Patent Information for Research and Business Planning, Introduction to TRIZ , Evaluation of Patents, IPR Beyond Patents (Copyright, Trade Marks, Designs and other forms of IP rights), IP Management including IP Strategy for Start-ups and Corporates, IP Licensing, IP Acquisition and Enforcement,</p> <p>Case studies and Tutorial.</p> |
| 4 | Texts/References | Reading material will be provided |

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| 1 | Title of the course (L-T-P-C) | Principles of Finance: Instruments & Investment (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | <p>Financial Assets: Structure of Financial Markets: including Money and Capital Market and various underlying</p> <p>Valuation: Understanding time value of money, Risk adjusted Return Intrinsic Valuation of financial assets: Debt and Equity with discounted cash flow model</p> <p>Risk Management: Basics of risk assessment, covering Market, Credit, Liquidity, Operational and Reputational Risk, and risk mitigation using hedging tools</p> <p>Macroeconomics and Financial Market Central banks and financial markets, Liquidity management, Quantitative Easing, inflation expectations</p> <p>Investments Rationale: Behavioural Finance and current studies, role on non-linearity in financial investment, modelling and real world divergence, heuristics</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. "Investments": Zvi Bodie, Alex Kane, Alan J. Marcus and Pitabas Mohanty; 11th edition, McGraw Hill 2. "Options and Other Derivatives"; John C. Hull and Sankarshan Basu; 10th Edition; Pearson Education 3. "The Psychology of Money": Morgan Housel 4. Principles of Corporate Finance by Richard A. Brealey, Stewart C. Myers, and Franklin 5. Allen, McGraw Hill, 2017 <p>Relevant handouts where required will be handed out and students are expected to refer to the material covered in the handouts during the course.</p> |

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| 1 | Title of the course (L-T-P-C) | Introduction to Linguistics (3-0-0-6) |
| 2 | Pre-requisite courses(s) | It is a first level course, and no prerequisite needed |
| 3 | Course content | <p>The Introduction to Linguistics course has been designed to provide an overview of the nature of language, linguistic knowledge and the scientific study of human language. It will introduce students to the basic concepts in Linguistics and will provide a reasonable taste of the core subfields of Linguistics. Under this course, the following topics will be covered.</p> <p>Introduction: What is language? Introducing the study of language. Design features of language.</p> <p>Phonetics: The sounds of human languages, articulatory and acoustic properties, classification and description of speech sounds, measuring acoustic properties of speech sounds, using the Praat software.</p> <p>Phonology: Organization of speech sounds, phoneme inventories, phonological processes, using features to build larger phonological units of syllables and words, acoustic analysis of syllable or phrase level features.</p> <p>Morphology: The internal structure of words, morphological processes, word formation rules, using morphological knowledge in text processing.</p> <p>Syntax: Grammaticality, syntactic properties, sentence structures, variation and universals of syntactic structures, syntax enhanced machine translation.</p> <p>Semantics: Components of linguistic meaning, lexical and compositional semantics.</p> |
| 4 | Texts/References | <p>Dawson, Hope, and Michael Phelan. Language files: Materials for an Introduction to Language and Linguistics. The Ohio State University Press. 2016.</p> <p>Fromkin, Victoria, Robert Rodman, and Nina Hyams. An Introduction to Language. Walsworth, Cengage Learning, 2011.</p> <p>Ladefoged, Peter, and Keith Johnson. A course in phonetics. Cengage learning, 2014.</p> <p>Ladefoged, Peter, and Sandra Ferrari Disner. Vowels and consonants. John Wiley & Sons, 2012.</p> <p>Katamba, Francis and John Stonham. Morphology. 2nd edn. London: Palgrave Macmillan. 2006.</p> <p>6. Schmitt, Norbert, ed. An introduction to applied linguistics. Routledge, 2013.</p> <p>7. Jurafsky, Dan. Speech & language processing. Pearson Education India, 2000.</p> |

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| 1 | Title of the course (L-T-P-C) | Psychology (3-0-0-6) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | Understanding human experience and behavior: Definition, schools, methods, branches and application of psychology for engineers; Measuring human abilities: Intelligence, Personnel testing; The individual working life: Personality - definition, approaches and theories; Psychological problems of everyday life: Stress and coping; Psychological disorders, Work and mental health; Human learning; Motivation : the concept and theoretical framework, motivating people at work; Attitude and work behavior; Group dynamics Intergroup relations, conflict resolutions; Leadership and management. |
| 4 | Texts/References | -- |

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| 1 | Title of the course (L-T-P-C) | Sociology (3-0-0-6) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | <ol style="list-style-type: none"> 1. What is sociology, some sociological concepts: social structure, status, role, norms, values etc. Socialization, and culture and change. 2. Social stratification - various approaches and concept of social mobility. 3. Population and society - Trends of demographic change in India and the world, Human Ecology, Trends of Urbanization in the developing countries and the world. 4. Major social institutions - Family and marriage, caste and tribe and organizations: (i) formal organization (bureaucracy) (ii) informal organization. 5. Processes of social change Modernization (including Sanskritization), industrialization, environmental/ecological changes and development. 6. Social movements-protest movements, reformist movement and radical movements in India. |
| 4 | Texts/References | -- |

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| 1 | Title of the course (L-T-P-C) | Basic Econometrics (3-0-0-6) |
| 2 | Pre-requisite courses(s) | HS201, EE201 |
| 3 | Course content | Classical Linear Regression Model (CLRM), Assumptions of the CLRM and its violation, Hypothesis Testing, Gauss Markov Theorem, Properties of the Estimator, Multiple Regression Model, Heteroscedasticity, Autocorrelation and Multi-collinearity, Introduction to Time Series, Discrete Choice, Estimation Procedures Ordinary Least Square(OLS), Generalized Least Squares(GLS), IV(Instrumental Variable), Maximum Likelihood Estimation(MLE) and Generalized Method of Moments(GMM) |
| 4 | Texts/References | Econometric Methods by Jack Johnston and John Dinardo, McGraw- Hill Education (Irwin); 4th edition(1996) Introductory Econometrics: A Modern Approach by Jeffery M. Woolridge, South-Western Cengage Learning (Mason, OH); 5 th edition(2014) Basic Econometrics by Damodar Gujarati, Dawn Porter,Sangeetha Gunasekar, McGraw Hill Education (Chennai); 5 th edition(2017). |

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| 1 | Title of the course (L-T-P-C) | Visual Narratives (3-0-0-6) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | <p>Module1:Visual Narratives-Definitions, Approaches</p> <p>Module2:Meta-Narratives- Form, Viewing and Meaning making</p> <p>Module3:Being and Language in Visual Narratives</p> <p>Module4:Issues of Technology, Ethics and Identity</p> <p>Module5:Gender, Visibility and Choice</p> <p>Module6:Global Politics and Visual Narratives</p> <p>Module7:Texts and Contexts from India</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Manney, Dawn. 2015. Visual, Narrative and Creative Research Methods: Application, reflection and ethics. Routledge, New York. 2. Mulvey, Laura.2019. Afterimages: On Cinema, Women and Changing Times. Reaction Books. 3. Garrett, Brian. 2006. What is this thing Called Metaphysics? Routledge, New York. 4. MacKinnon, Barbara, and Andrew Fiala. 2015. Ethics Theory and Contemporary Issues. CT: Cengage Learning, Stamford, USA. 5. Shaw, Dan. 2012. Morality and the Movies: Reading ethics through film. Continuum International Publishing Group, New York. |

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| 1 | Title of the course (L-T-P-C) | Indian Economy: An Analytical Perspective (3-0-0-6) |
| 2 | Pre-requisite courses(s) | Economics: HS 201 |
| 3 | Course content | <p>India's growth story: Growth performance of India during the post- independence period; Strategies for Development-State vs Markets, Import-substitution vs export promotion; Growth models and Planning in India; Sectoral growth perspective; Consumption, Savings and Investment trends in India.</p> <p>Monetary Policy: Instruments-Direct and Indirect; Monetary Policy Frameworks-Monetary Targeting, Multiple Indicators Approach, Flexible Inflation Targeting; Inflation in Indian Economy- measurement and analysis.</p> <p>India's Financial Sector: A synoptic view of institutions and regulation of India's financial sector, financial repression and interest rate structure in India; Financial Sector Reforms in India.</p> <p>Fiscal Policy in India: Trends and composition of tax receipts, expenditures; Deficits and Financing; Fiscal reforms in India-FRBM Act and fiscal prudence, State Finances, Public debt and its sustainability.</p> <p>External Sector in India: Trends and composition of exports and imports, Trade and current account deficits, WTO and India's trade, Capital flows to India and their management, India's Exchange rate regimes and India's balance of payments.</p> <p>Employment, Poverty and Inequality in India – Measurement issues, Regional and sectoral dimensions in employment, poverty and inequality, Recent debates on poverty and employment, Impact of COVID -19.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Acharya, Shankar (2021), India's Economy 2015-2020, Academic Foundation, New Delhi. 2. Balakrishnan, Pulapre (2010), Economic Growth in India, OUP India. 3. Basu, Kaushik. (ed.) (2005), India's Emerging Economy. OUP India. 4. Joshi, V. and I. M. D. Little (1994), India: Macroeconomics and Political Economy, OUP India. 5. Joshi, V. and I. M. D. Little. 1996. India's Economic Reforms (1991-2001). Clarendon Press, USA. 6. Joshi, Vijay (2017), India's Long Road: The Search for Prosperity, OUP USA. 7. Kapila, Uma (2020), Indian Economy Since Independence (31t Edition), Academic Foundation, New Delhi. 8. Mohan, Rakesh. (ed). 2002. Facets of the India Economy, OUP India. 9. Mohan, Rakesh and Partha Ray (2017), Indian Financial Sector: Structure, Trends and Turns, IMF Working Paper International Monetary Fund # WP/17/7, available at https://www.imf.org/en/Publications/WP/Issues/2017/01/20/Indian-Financial-Sector-Structure-Trends-and-Turns-44554 10. Panagariya, Arvind, (2011), India: The Emerging Giant, OUP USA. <p>In addition, journal articles, internet resources (text and data) would be used.</p> |

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| 1 | Title of the course (L-T-P-C) | International Finance (3-0-0-6) |
| 2 | Pre-requisite courses(s) | Nil |
| 3 | Course content | International Trade Vs. International Finance; What is International Finance all about?; Balance of Payments–Principles; Disequilibrium in BOP; BOP Crisis in India in 1991; Functions of the Foreign Exchange Markets; Foreign Exchange Markets and Exchange Rate Determination; Purchasing Power Parity (PPP); Monetary Approach to Balance of Payments (Exchange Rate Determination); Asset Market Approach to Exchange Rate Determination; Dornbusch's Overshooting Model; Covered & Uncovered Interest Rate Parity; Open-Economy Macroeconomics and the International Monetary Policy; Adjustment Mechanisms with Flexible and Fixed Exchange Rates; Elasticities and absorption approaches; Management of Capital Inflows and Impossible Trinity; Issues with respect to Financial Liberalization and Globalization; Capital Flows; Latin American Currency Crises; East Asian Economic Crisis; Global Financial Crisis and Euro Crisis. |
| 4 | Texts/References | <ol style="list-style-type: none"> 2. Gandolfo, G. (2013). International Economics II: International Monetary Theory and Open-Economy Macroeconomics. Springer Science & Business Media. 3. Gopinath, G., Helpman, E., & Rogoff, K. (Eds.). (2014). Handbook of International Economics. Elsevier. 4. Krugman, P., Obstfeld, M. & Melitz, M. (2012). International Economics: Theory and Policy. New Delhi: Pearson Education. 5. Rogoff, K. S., & Reinhart, C. (2009). This Time Is Different: Eight Centuries of Financial Folly. Princeton, NJ: Princeton University Press. 6. Salvatore, D. (2016). International Economics: Trade and Finance. John Wiley International Student Edition. 7. Sodersten, B., & Reed, G. (1994). International Economics. Palgrave Macmillan. 8. Appleyard, D. R., & Field Jr, A. J. (2001). International Economics. McGraw-Hill, New York. |

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| 1 | Title of the course (L-T-P-C) | Critical Thinking (3-0-0-6) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | <p>Unit 1: Introduction: Critical thinking and Informal logic (a) What is critical thinking? (b) What is the distinction between formal and informal logic?</p> <p>Unit 2: Argument, constituents of the argument and the relations between the constituents of the argument (a) Argument and the standard form of an argument, (b) Basic Sentential Logic semantics, (c) Syllogisms and Venn Diagrams, (d) Formal Nature of Syllogistic Argument</p> <p>Unit 3: Fallacies: The Principal Forms of Illogical Thinking (a) Informal fallacies (Fallacies of relevance, defective induction, presumption and ambiguity), (b) Formal Fallacies: Existential fallacy and Formal syllogistic fallacies</p> <p>Unit 4: Induction and Scientific Reasoning (a) Inductive Arguments and Arguments from Analogy, (b) Causal Reasoning and Inference to the Best Explanation, (c) Briefly on Ockham's Razor</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Bergmann, Merrie, Moor, James and Jack Nelson. 2008. The Logic Book. 5th edition, McGraw-Hill. 2. Copi, Irving M, Cohen, Carl, Jetli, Priyadarshi and Monica Prabhakar. 2014. Introduction to Logic. 14th edition, Pearson. 3. Grennan, Wayne. 1997. Informal Logic: Issues and Techniques: A proposal for a new system of argument evaluation. Montreal: McGill-Queen's University Press. 4. Noel Moore, Brooke and Richard Parker. 2009. Critical Thinking. 9th edition, McGraw-Hill. 5. Sinnott-Armstrong, Walter, and Robert 6. J. Fogelin. 2009. Understanding Arguments: An Introduction to Informal Logic. 8th edition, Wadsworth Publishing. |

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| 1 | Title of the course (L-T-P-C) | Energy Economics and Policy (3-0-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | <ul style="list-style-type: none"> • General Orientation: Energy Flow Diagram, Understanding the Energy Crisis - OPEC and Oil price shocks in the 1970s, Energy Value Chain, Global Trends in Energy Use, Resources & Reserves Growth Rates in Consumption, Estimates of Duration of Fossil Fuels, Primary and Secondary Source of Energy. • Energy Economics: Energy Demand and Supply, Simple Payback Period, Criteria for Assessing Energy Projects – (Net Present Value (NPV), Benefit/Cost Ratio (B/C), Inflation, Internal Rate of Return (IRR), Pricing in Energy Markets: Functioning of Power Exchange and Commodity Exchanges (Energy), Financing Energy – Debt/ Equity- Sources of funds, innovative financing models, Cost of Energy. Private Investment in Energy Sectors, International Carbon Markets and Carbon Finance. • Energy Policy: Energy and Quality of Life, Energy Security, National and International Perspective, Energy Inequality, Indicators of energy poverty, Affordability, Climate Change, UNFCCC, Kyoto Protocol, National Action Plan on Climate Change, Renewable Energy, Cross Border Energy Cooperation, Energy and Environment, Power Policy, Regulation of Indian Energy Sectors Electricity, Oil & Gas and Coal Sectors. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Stevens, P. (2000). An Introduction to Energy Economics. In Stevens, P. (ed.) The Economics of Energy, Vol. 1, Edward Elgar, Cheltenham, UK. 2. Bhattacharyya, Subhes. C. (2011). Energy Economics: Concepts, Issues, Markets and Governance. Springer. London, UK. 3. Hartwick, J. M, and Olewiler, N. D. (1986). The Economics of Natural Resource Use. Harper and Row Publishers, New York, USA. 4. GEA, 2012: Global Energy Assessment - Toward a Sustainable Future, Cambridge University Press, Cambridge, UK and New York, NY, USA and the International Institute for Applied Systems Analysis, Laxenburg, Austria 5. Hiren Sarkar and Gopal K. Kadekodi, Energy pricing in India: perspectives, issues and options, 1988. 6. Tietenberg, T., and L. Lewis. "The Allocation of Depletable and Renewable Resources: An Overview." In Environmental & Natural Resource Economics. 8th ed. Addison-Wesley, 2008, pp. 134–55. ISBN: 9780321485717. 7. Tiwari, G. N., & Mishra, R. K. Advanced Renewable Energy Sources. Royal Society of Chemistry. 2011. 8. Laurance R. Geri, David E. McNabb. Energy Policy in the U.S.: Politics, Challenges, and Prospects for Change. CRC Press. 2011. 9. Wilson, J. Q., ed. "The Politics of Regulation." In The Politics of Regulation. Basic Books, 1982, pp. 357–94. ISBN: 9780465059683. |

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| 1 | Title of the course (L-T-P-C) | Principles of Finance: Portfolio Theory and Financial Engineering (3-0-0-6) |
| 2 | Pre-requisite courses(s) | Principles of Finance: Investment and Instruments |
| 3 | Course content | <p>Portfolio Theory and Capital Asset Pricing Model Markowitz Portfolio Theory covering Risk and Return relationship Role of Capital Asset Pricing Model (CAPM) Project on designing optimal portfolio using asset selection based on historical backtesting, with Machine Learning acting as enabler</p> <p>Risk Analysis: Understanding Portfolio Risk and benefits of Diversification How to generate historical time series using backfilling Methodologies, with logistic regression using basic Python dictionaries Measuring risk through Monto Carlo and Historical Simulation for a hypothetical portfolio and its impact on Banks' capital ratios Reducing Risk with Options</p> <p>Financial Engineering Valuation of options using Black Scholes Method and its application in real world Pricing of options in financial industries Commonly trades structure derivatives i.e. Credit: collateralized debt obligation (CDOs) for both speculative and hedging needs FX/Rates: Swap and Cross Currency Options Bond Options covering default probability</p> |
| 4 | Texts/References | <p>Options and Other Derivatives"; John C. Hull and Sankarshan Basu; 10th Edition; Pearson Education</p> <p>"The Psychology of Money": Morgan Housel</p> <p>Principles of Corporate Finance by Richard A. Brealey, Stewart C. Myers, and Franklin Allen, McGraw Hill, 2017</p> <p>Relevant handouts where required will be handed out and students are expected to refer to the material covered in the handouts during the course</p> |

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| 1 | Title of the course (L-T-P-C) | Communication Skills |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | Why Communication Skills? , Types of Communication, Communication and Research: Academic Reading, Writing, Listening and Appreciation, Grammar and Style, Research Ethics, Gender and Cultural Issues. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. The Craft of Research by Wayne C. Booth, Gregory G.Colomb, Joseph M. Williams. 2. A Manual for Writers of Research Papers, Theses, and Dissertations, Eighth Edition, 3. The Elements of Style by William Strunk Jr., 4. Communication Skills for Engineers and Scientists Sangeeta Sharma & Binod Mishra. 5. A New Approach to Research Ethics: Using Guided Dialogue to Strengthen Research Communities by Henriikka Metajoke, Arto Metajoke. |

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| 1 | Title of the course (L-T-P-C) | Literary Theory and Criticism (4-0-0-8) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | Introduction to Theories of Literature, Important Literary and Critical Concepts, Overview of Literary history and Approaches, Understanding 'Texts' and Contexts. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. The Norton Introduction to Literature- Twelfth Edition by Kelly J Mays. 2. Contemporary Literary and Cultural Theory: From Structuralism to Ecocriticism by Pramod Nayar. 3. The Reach of Criticism: Method and Perception in Literary Theory by Paul H. Fry. 4. Companion to Comparative Literature, World Literatures and Comparative Cultural Studies by Steven Totosy De Zepetnek, Tuntun Mukherjee. 5. Literary Theory and Criticism by Patricia Waugh. |

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| 1 | Title of the course (L-T-P-C) | Interdisciplinary Approaches to Literary Research (4-0-0-8) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | Aims and Scope of Literary Research, Literary Research and Interdisciplinarity, Methods of Interdisciplinary Research, Literary Research and the Question of 'Outcome' |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Inter disciplinarily by Joe Moran, 2nd edition, (Routledge) 2010. 2. Prospecting: From Reader Response to Literary Anthropology by Iser W.a Nd Wolfgang Aser (The Johns Hopkins University Press, February 1, 1993). 3. The Oxford Handbook of Interdisciplinarity edited by Robert Frodeman, Julie Thompson Klein (Oxford University Press) Reprint edition (March 21,2012), 4. Literary Theories: A Case Study in Critical Performance by William Baker (Red Globe Press) 1996 edition (October 25,1996), 5. The Handbook to Literary Research edited by Delia da SousaCorrea, 6. W. R. Owens (Routledge) 2nd edition (20 August 2009). |

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| 1 | Title of the course (L-T-P-C) | Advanced Econometrics (3-1-0-8) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | <p>Ordinary Least Squares (OLS), Generalized Least Squares (GLS) and Maximum Likelihood Estimation (MLE); Properties of estimators; Hypothesis Testing (t- and F-test; Wald, Likelihood Ratio, Lagrange Multiplier Testing Principles); Discrete Choice models; Limited Dependent Variable; Time Series: Stationary and Non-stationary Series. AR, MA, and ARMA processes. Unit roots. (Augmented) Dickey Fuller test. Integrated Series. Trend Stationary and Difference Stationary Series. Cointegration.</p> <p>Endogeneity in linear regression models: Omission of Relevant Explanatory Variables; Measurement Error in Explanatory Variables; Simultaneity; Lagged Dependent Variable as a Regressor and Serially Correlated Errors; Instrumental Variables (IV) Estimator, choice of Instruments; 2SLS estimator; Simultaneous equations; Efficient GMM estimation; Introduction to Panel Data Models: Fixed effect and random effect models; Introduction to quantile estimation.</p> <p>Some econometric applications using R and Stata.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Johnston, J. and J. Dinardo, Econometric Methods, (4th edition), McGraw-Hill, 1997. 2. Greene, W.H., Econometric Analysis, (7th edition), Pearson, 2011. 3. Nachane, Dilip M., Econometrics: Theoretical Foundations and Empirical Perspectives, Oxford University Press, 2006. 4. Research papers prescribed by instructor. |

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| 1 | Title of the course (L-T-P-C) | History of Economic Thought (3-0-0-6) |
| 2 | Pre-requisite courses(s) | Nil |
| 3 | Course content | Introduction: Pre classical economic thought (Physiocrats and mercantilism), Classical Political Economics – Smith, Ricardo, Marx and Malthus, Neoclassical Economic Theories including general equilibrium; welfare economics and Coase theorem, Growth theories; Schumpeterian growth theory; innovation, Macroeconomics; Keynes and the classics, Recent developments: Experimental and behavioral economics; institutional economics, endogenous preference, information economics, Special Topic: Ancient Indian Economic thought. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Economic Theory in Retrospect by Mark Blaug, Cambridge University Press; 5th edition(1997). 2. The Worldly Philosophers: The Lives, Times and Ideas of The Great Economic Thinkers by Robert L. Heliborne, 7th edition, Simon &Schuster (1999) 3. Economics Evolving – A History of Economic Thought by Agnar Sandmo, Princeton University Press(2011) 4. Economic Sutra: Ancient Indian Antecedents to Economic Thought by Satish Y. Deodhar, Penguin Portfolio (2019). 5. Online material and video lectures |

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| 1 | Title of the course (L-T-P-C) | Meta-ethics (4-0-0-8) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | <p>Meta-ethics is that branch of Moral Philosophy or Ethics that is concerned with the nature of morality or moral properties. Some of the questions in meta-ethics would be the following. Are moral standards relative or absolute? Answer to this question will lead to the debate between Moral Realism and Moral Relativism. Can moral judgments or statements be true or false? Are moral judgements or statements truth-apt? This will lead to the debate between Cognitivism (Moral statements are truth-apt) and Non-cognitivism (Moral statements are not truth-apt. They are neither true nor false.) If moral statements are truth-apt, then can they be known? This will lead to the debate between Moral Rationalism (Moral judgments are known a priori) and Moral Skepticism (Moral judgments cannot be known at all). Can there be ethical properties? This will lead to the debate between Ethical Naturalism (There are ethical properties which are reducible to the non-ethical but natural properties.) and Ethical Non-naturalism(There are ethical properties which are irreducible.) The following topics also will be discussed Moral Explanations and Moral Disagreement.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Russ Shafer-Landau (ed.) 2013. Ethical Theory: an Anthology. Wiley-Blackwell, Oxford, UK. 2. Sher, George (ed.) 2012. Ethics: Essential Readings in Moral Theory. Routledge. New York. 3. Hugh LaFollette (ed.) 2000. The Blackwell Guide to Ethical Theory. Blackwell Publishers, Oxford, UK. 4. Peter Singer (ed.) 1991. A Companion to Ethics. Blackwell Publishers, Oxford, UK. 5. Sturgeon, Nicholas. "Moral Explanations." In Ethics: Essential Readings in Moral Theory. 2012. Routledge.NY. 6. Geoffrey, Sayre-McCord. 1988. Essays on Moral Realism. Cornell University Press. NY. 7. Foot, Philippa. "Morality as a System of Hypothetical Imperatives." In Ethical Theory: An Anthology. 2013. Wiley-Blackwell, Oxford, UK. |

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| 1 | Title of the course (L-T-P-C) | Research Methodology in Humanities and Social Sciences (4-0-0-8) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | Research design and methods including qualitative, quantitative, and mixed-methods designs. Data- collection methods, data-analysis, exposure to critical thinking, research ethics and different schools of critical theories. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Bergmann, Merrie, Moor, James and Jack Nelson. 2008. The Logic Book. 5th edition, McGraw-Hill, Primis,US. 2. Copi, Irving M, Cohen, Carl and Kenneth McMahon. 2014. Introduction to Logic. 14th edition, Routledge, London & NewYork. 3. Susan T. Gooden and Rajade Berry-James, Why Research Methods Matter, Melvin & Leigh, Publishers, Irvine, California(2018) 4. Claire Lemercier, Claire Zalc, Quantitative Methods in the Humanities: AnIntroduction, University of Virginia Press, University of Virginia,2019 5. Bridget Somekh, Cathy Lewin, Research Methods in the Social Sciences, SAGE, London,California, New Delhi(2004) 6. Kalpana Kannabiran, Padmini Swaminathan, Re- Presenting Feminist Methodologies: Interdisciplinary Explorations, 2017, Routledge, London and New York. 7. Geoff Payne, Judy Payne, Key Concepts in Social Research, 2004, Sage, London, Thousand Oaks, New Delhi |

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| 1 | Title of the course (L-T-P-C) | Principles of Microeconomics (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | <p>Rational choice theory, Consumer theory: Preferences and utility, the consumers' problem, indirect utility and expenditure function, Slutsky equation, Shephard's Lemma and Roy's Identity, properties of demand function</p> <p>Producer theory: Production and cost functions, profit maximisation</p> <p>Perfectly competitive markets: Market equilibrium in short and long run</p> <p>Decisions under risk and uncertainty: contingent commodities, expected utility and attitude toward risk, choice under uncertainty, demand for insurance, demand for risky asset, price of information</p> <p>General Equilibrium and welfare, Monopoly and monopolistic behaviour: pure monopoly, inefficiency and regulation, monopsony, price discrimination Duopoly and Oligopoly: Cournot, Stackelberg and Bertrand models, Asymmetric information: hidden characteristics and adverse selection, Signaling, hidden action and moral hazard problem, principal-agent models Externalities and public goods: externalities and efficiency loss, property rights and Coase theorem, common property resources, public goods and efficiency, free riding problem</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Microeconomic Theory: Basic Principles and Extensions by Walter Nicholson and Christopher Snyder, 12th ed. (2017), Cengage Learning India Pvt. Ltd. 2. The Structure of Economics: A Mathematical Analysis by Eugene Silberberg and Wing Suen, 3rd edition. 3. Microeconomic Analysis by Hal R. Varian, 8th ed. (2010), W. W. Norton & Company 4. Advanced Microeconomic Theory by Geoffrey A. Jehle and Philip J. Reny, 3rd ed. (2011), Pearson. 5. Microeconomics Theory by Mas Colell, Indian ed. (2012), Oxford University Publication. |

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| 1 | Title of the course (L-T-P-C) | Seminar on selected topics in Advanced Economic (2-0-0-4) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | The course will cover some frontier topics in advanced economic analysis through a detailed discussion in seminars |
| 4 | Texts/References | NA |

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| 1 | Title of the course (L-T-P-C) | Applied Game Theory (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | Definition of games, normal form and strategies, Best response, dominance, Nash equilibrium, Iterated elimination of dominated strategies, Mixed strategies. Applications: oligopoly, tariffs, crime, conflict, voting and auctions. Bayesian games. Extensive form games, backward induction and sub game perfect equilibrium and applications. Perfect Bayesian equilibrium. Repeated games. Bargaining games and applications. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. An Introduction to Game Theory by M. O. Osborne, Indian ed. (2003), Oxford University Press. 2. Strategy an Introduction to Game Theory by Joel Watson, 2nd ed. (2013), VivaBooks. 3. Game Theory by Drew Fudenberg & Jean Tirole, MIT Press (1991). 4. A Course in Game Theory by Osborne Martin J. and Rubinstein Ariel, 1st ed., MIT Press. |

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| 1 | Title of the course (L-T-P-C) | Normative Ethics (4-0-0-8) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | <p>Under what conditions could one say that an action is morally right or morally wrong? What gives an act moral worth? Prima facie this question could be answered in at least three possible ways. One response could be that the effect/consequence determines the moral worth of the act. Thus, we have Consequentialist Theories of morality. Under consequentialism, we discuss mainly Extreme and Restricted Utilitarianism. Jeremy Benthan and J S Mill are the important philosophers. As opposed to utilitarians, deontologists would say that acts are morally right or morally wrong irrespective of the consequences that the act would produce. Deontologists would say that the moral worth of the action is dependent on the intention of the agent who performs the action and certain absolute moral principles. Immanuel Kant proposes deontology. Virtue ethical theorists would say that mere satisfaction of the principle (whether it is utilitarian or deontological principle) is not something that gives an act moral worth. The moral worth of the act depends on whether the act being performed is the exemplification of virtue. Aristotle proposes some versions of virtue ethics. Apart from these ethical theories, the course will also discuss Social contract theory.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Barbara MacKinnon and Andrew Fiala. 2015. Ethics Theory and Contemporary Issues. 2. Foot, Philippa. 1978. Virtues and Vices, Blackwell. 3. Russ Shafer-Landau (ed.) 2013. Ethical Theory: an Anthology. Wiley-Blackwell. 4. Scanlon T.1999. 'Reasons', in What We Owe to Each Other, Belknap Press. 5. George Sher (ed.) 2012. Ethics: Essential Readings in Moral Theory. Routledge. 6. Hugh LaFollette (ed.) 2000. The Blackwell Guide to Ethical Theory. Blackwell. 7. Peter Singer (ed.) 1991. A Companion to Ethics. Wiley- Blackwell. |

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| 1 | Title of the course (L-T-P-C) | Modernism: Theory and Literature (4-0-0-8) |
| 2 | Pre-requisite courses(s) | Nil |
| 3 | Course content | Cultural and historical backdrop of Modernism, Modernism and Modernity, Writers of the Modernist Period- James Joyce, T.S. Eliot, Joseph Conrad, Franz Kafka, Virginia Woolf, Samuel Beckett among others. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Modernism by Peter Childs (Routledge) 2nd edition (1 November 2007). 2. The Cambridge Introduction to Modernism by Pericles Lewis (Cambridge University Press) 2007. 3. From Modernism to Postmodernism by Lawrence Cahoon (Wiley-Blackwell) 2nd edition (February 4, 2003). 4. Ulysses by James Joyce (Wordsworth Classics) Mass Market Paperback (4 Jan 2010). 5. The Consequences of Modernity by Anthony Giddens (Stanford University Press, 1 October 1991). 6. Modernity, Modernism, Postmodernism by Manuel Barneito (ed.), 2000. |

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| 1 | Title of the course (L-T-P-C) | Postmodernism: Theory and Literature (3-0-1-8) |
| 2 | Pre-requisite courses(s) | Nil |
| 3 | Course content | Defining the 'Postmodern': Understanding the 'Post' in Postmodernism, Postmodernism and Postmodernity, Postmodernist Theory and Culture, Postmodernist Literature. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. The Idea of the Postmodern: A History by Hans Bertens, Routledge (London & New York),1995. 2. The Blind Assassin by Margaret Atwood, Anchor, 2001. 3. White Teeth by Zadie Smith, Random House (New York),2000. 4. Selected Poems by Jorge Luis Borges, Penguin Books, 2000. 5. The White Tiger by Arvind Adiga, Free Press (New York),2008. 6. Postmodernism, or, The Cultural Logic of Late Capitalism by Fredric Jameson, Duke University Press (Durham),1990. 7. Intimations of Postmodernity by Zygmunt Bauman, Routledge (London & New York), 2003. 8. Philosophers on Art from Kant to the Postmodernists: A Critical Reader, edited by Christopher Kul-Want Columbia University Press (New York),2010. |

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| 1 | Title of the course (L-T-P-C) | Literature and Philosophy (4-0-0-8) |
| 2 | Pre-requisite courses(s) | -- |
| 3 | Course content | Relationship between Literature and Philosophy- from Classical to the Contemporary, Important Philosophical Concepts and their Literary Relevance, Writers and their philosophical attitudes. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Literature and Philosophy: A Guide to Contemporary Debates edited by D. Rudrum. 2. Literature and Philosophy in Dialogue: Essays in German Literary Theory by Hans-Georg Gadamer. 3. Literature as philosophy/philosophy as literature by Donald G. Marshall. 4. Future Crossings: Literature Between Philosophy and Cultural Studies edited by Krzysztof Ziarek, Seamus Deane. |

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| 1 | Title of the course (L-T-P-C) | Introduction to Industrial Organization (3-0-0-6) |
| 2 | Pre-requisite courses(s) | Economics (HS 201) |
| 3 | Course content | <ol style="list-style-type: none"> 1. Introduction to Industrial Economics: Overview of Industrial Economics. Theoretical foundations of Industrial Economics, Basic economic concepts and their relevance to Industrial Economics 2. Introductory Microeconomics: Consumer behaviour and demand, Production functions, Cost functions, Economies of scale and scope, Short-run and Long-run Cost Analysis 3. Game Theory and Strategic Behaviour: Normal Form Games, Extensive Form Games, Repeated Games, Games with Imperfect Information 4. Market Structures: Perfect Competition, Monopoly, Oligopoly, Monopolistic Competition, Collusion, Market Structure and Market Power 5. Pricing Strategies: Price discrimination, Price skimming, Penetration pricing, Bundling 6. Vertical Relations: Double Marginalization and Two-Part Tariffs, Retailer Competition, Investment Externalities, Manufacturer Competition 7. Product Differentiation: Horizontal and vertical differentiation, Product differentiation and market power, Product positioning 8. Strategic Behaviour, Entry and Exit: Entry costs and market structure, Free entry and social welfare, Entry deterrence, Predation, Mergers and acquisitions 9. Research and Development: Market structure and incentive for R&D, Dynamics of R&D competition, Patent races and welfare analysis of patent protection, 10. Network effects, platforms, search and standards |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Industrial Organization, Markets and Strategies (Cambridge University Press (2nd Edition 2015)) by Paul Belle Flamme and Martin Peitz. 2. Industrial Organization: Theory and Applications (The MIT Press, 1st Edition, 6th reprint) By Oz Shy. 3. The Theory of Industrial Organization (Prentice Hall India Learning Private Limited; 1st Edition) by Jean Tirole 4. A Course in Microeconomic Theory. (Princeton University Press (Illustrated Edition 2020)) by D. Kreps 5. An Introduction to Game Theory. (Oxford University Press (1st Edition, 2005)) by Martin J. Osborne |

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| 1 | Title of the course (L-T-P-C) | Money, Banking and Finance (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NA |
| 3 | Course content | <p>Money, Banking & Finance: Why Study Money, Banking, and Financial Markets?; An Overview of the Financial System; What Is Money?: Meaning, Functions and Evolution of Money.</p> <p>Financial Markets: The Meaning of Interest Rates; The Behavior of Interest Rates; The Risk and Term Structure of Interest Rates; The Stock Market, the Theory of Rational Expectations, and the Efficient Market Hypothesis.</p> <p>Financial Institutions: An Economic Analysis of Financial Structure; Banking and the Management of Financial Institutions; Economic Analysis of Financial Regulation; Banking Industry: Structure and Competition; Financial Crises</p> <p>Central Banking and the Conduct of Monetary Policy: Central Banks and the RBI; The Money Supply Process; Tools of Monetary Policy; The Conduct of Monetary Policy: Strategy and Tactics; Inflation Targeting – History and Relevance in Indian Context.</p> <p>Policies for Economic Stability: Choosing the long-run inflation rate; Inflation and Output Stability; Taylor’s Rule; Uncertainty and Policy Mistakes; Making Interest Policy; Deviations from Taylor’s Rule; Basel Norms and Their Implications.</p> |
| 4 | Texts/References | <p>TEXTBOOKS</p> <ol style="list-style-type: none"> 1. Ball, L. (2011). Money, Banking and Financial Markets. Worth Publishers Inc. 2. Burton, M., & Brown, B. (2014). Financial System of the Economy: Principles of Money and Banking: Principles of Money and Banking. Routledge. 3. Durlauf, S.N., and Blume, L. (2010). Monetary Economics. Palgrave McMillan 4. Handa, J. (2009). Monetary Economics. Routledge. 5. Mishkin, F. S. (2007). The Economics of Money, Banking, and Financial Markets. Pearson Education. 6. Reinhart, C. M., & Rogoff, K. S. (2009). This Time Is Different: Eight Centuries of Financial Folly. Princeton University Press. <p>JOURNAL ARTICLES</p> <ol style="list-style-type: none"> 7. Jayadev, M. (2013). Basel III Implementation: Issues and Challenges for Indian Banks. IIMB Management Review, 25(2), 115-130. 8. Sen, S., & Ghosh, S. K. (2005). Basel Norms, Indian Banking Sector and Impact on Credit to SMEs and the Poor. Economic and Political Weekly, 40(12), 1167-1180. |

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| 1 | Title of the course (L-T-P-C) | Introduction to Sustainable Development (3-0-0-6) |
| 2 | Pre-requisite courses(s) | NIL |
| 3 | Course content | <p>Concepts, and principles of sustainability Economic development and sustainability, Between and within countries inequality, Poverty alleviation and social inclusion Planetary boundaries, Global environmental threats, and pathway to Sustainable Development, Measuring social wellbeing Food security, Sustainable cities and community, Sustainable agriculture, Climate change, saving biodiversity and protecting ecosystem services Sustainable Development Goals and policy framework, Corporate Social Responsibility & Sustainability Overview of Sustainability in Indian Knowledge System (IKS) Exposure to sustainability indicators and assessment tools.</p> |
| 4 | Texts/References | <p>TEXTS</p> <ol style="list-style-type: none"> 1. The Age of Sustainable Development, Jeffrey D. Sachs. Columbia University Press, 2015, ISBN: 9780231173155 2. Ecological Economics, Herman E. Daly & Joshua Farley, Island Press; 2nd edition, 2010, ISBN: 9781597266819 3. Tietenberg and Lewis. "Environmental and Natural Resource Economics." Routledge; 11th edition, 2018, ISBN: 9781138632301 |

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| 1 | Title of the course (L-T-P-C) | Shakespeare on Screen (3-0-0-6) |
| 2 | Pre-requisite courses(s) | Nil |
| 3 | Course content | Interface between Literature and Film; Relation between the Stage and the Screen; Theories of Adaptation; Overview of the Transcultural Filmic Adaptations of Shakespeare; Reading Key Shakespeare Plays in Conjunction with Shakespeare Films; Comparative Reading of Key Scenes from a Single Shakespeare Play in Conjunction with Its Multiple Filmic Adaptations; Key Themes in Shakespeare; Is Shakespeare a Universal Genius or an Imperial Product? |
| 4 | Texts/References | <p>TEXTS</p> <p>Select plays and films from the following list will be discussed.</p> <ol style="list-style-type: none"> 1. Hamlet (Arden Edition, Third Series, rev. ed., edited by Ann Thompson and Neil Taylor, 2016) Film adaptations: Hamlet (dir. Lawrence Olivier, 1948); Haider (dir. Vishal Bharadwaj, 2014) 2. Macbeth (Arden Edition, Third Series, edited by Sandra Clark and Pamela Mason, 2015) Film adaptations: Macbeth (dir. Roman Polanski, 1971); Maqbool (dir. Vishal Bharadwaj, 2004) 3. King Lear (Arden Edition, Third Series, edited by R. A. Foakes, 1997) Film adaptations: Korol Lir (dir. Grigori Kozintsev, 1971), Ran (dir. Akira Kurosawa, 1985) 4. Othello (Arden Edition, Third Series, rev. ed., edited by E. A. J. Honigmann, 2016) Film adaptations: Othello (dir. Orson Welles, 1951); Omkara (dir. Vishal Bharadwaj, 2006) 5. The Tempest (Arden Edition, Third Series, edited by Virginia Mason Vaughan and Alden T. Vaughan, 2011) Film adaptations: Forbidden Planet (dir. Fred M. Wilcox, 1956); Resan till Melonia (dir. Per Åhlin, 1989) 6. The Comedy of Errors (Arden Edition, Third Series, edited by Kent Cartwright, 2016) Film adaptations: Bhranti Bilas (dir. Manu Sen, 1963); Ambuttu Imbuttu Embuttu (dir. Ashok Kashyap, 2005); <p>REFERENCES</p> <ol style="list-style-type: none"> 1. Henderson, Diana E. <i>A Concise Companion to Shakespeare on Screen</i>. Wiley-Blackwell, 2006. 2. Hutcheon, Linda and Siobhan O'Flynn. <i>A Theory of Adaptation</i>. 2nd edition. Routledge, 2013. 3. Jackson, Russell ed. <i>The Cambridge Companion to Shakespeare on Film</i>. 2nd edition. Cambridge University Press, 2007. 4. Mulvey, Laura. "Visual Pleasure and Narrative Cinema." <i>Screen</i>, vol. 16, no. 3, Autumn 1975, pp. 6-18. 5. Truffaut, François. "A Certain Tendency in French Cinema." <i>Movies and Methods: An Anthology</i>, edited by Bill Nicholas, pp. 224-237. University of California Press, 1976. |

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| 1 | Title of the course (L-T-P-C) | Introduction to Indian Knowledge systems-2 (IIKS-2) (3-0-0-6) |
| 2 | Pre-requisite courses(s) | |
| 3 | Course content | <p>A broad overview of disciplines included in the IKS, and historical developments. The present course will consider Number system and units of measurement, Mathematics, Metals & Metal working, Town planning & Architecture, Irrigation & water management, and Aeronautics. The emphasis on different topics will be based on students' interests.</p> <p>Module-1: Introduction Indian Knowledge System – An Introduction, Organization, and importance of IKS. Historicity and some salient aspects of IKS. Module 2: Number Systems and Units of Measurement: Number systems in India - Historical evidence, Salient aspects of Indian Mathematics, Bhūta-Saṃkhyā system, Kaṭapayādi system, Measurements for time, distance, and weight, Piṅgala and the Binary system.</p> <p>Module 3: Mathematics Introduction to Indian Mathematics, Unique aspects of Indian Mathematics, Indian Mathematicians and their Contributions, Algebra, Geometry Trigonometry, Binary mathematics & combinatorial problems in Chandah Śāstra and concept of Magic squares.</p> <p>Module 4: Applications of Engineering: Metal and Metal processing Wootz Steel: The rise and fall of a great Indian technology, The Indian heritage, Mining and ore extraction, Metals and metal processing technology, Iron and steel in India, Lost wax casting of idols and artefacts, Apparatuses used for extraction of metallic components.</p> <p>Module 5: Applications of Engineering: Civil Engineering Irrigation & water Management, Irrigation systems & practices in ancient India, Perspective on town planning, Vāstu-śāstra – The science of architecture, Eight limbs of Vāstu, Temples in India, Temple architecture in India.</p> <p>Module 6: Aeronautics Airplane parts, Materials used in construction of Airplane, Propulsion, Yantras or Machinery, Varieties of airplanes, Rukma Vimana, Shakuna Vimana, Sundara Vimana, Tripura Vimana.</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. An Introduction to Indian Knowledge Systems: Concepts and Applications, B Mahadevan, V R Bhat, and Nagendra Pavana R N; (Prentice Hall of India), 2022. 2. Indian Knowledge Systems: Vol I and II, Kapil Kapoor and A K Singh; (D.K.Print World Ltd), 2005. 3. Early Indian Architecture: Cities and City-Gates, Coomaraswamy, Ananda K., Munshiram Manoharlal Publishers, 2002. 4. https://www.drishtiiias.com/printpdf/temple-architecture 5. Mathematics in ancient and medieval India, Bag A K(Chaukhamba Orientalia),1979. 6. History of Hindu mathematics, part I&II, Datta B and Singh A N,(Asia Publishing House),1962. 7. Vymaanik shastra-Aeronautics, Maharshi Bharadwaj translated by Subbaraya Shastry (Coronation Press), 1973. |

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| 1 | Title of the course (L-T-P-C) | Kannada-1 (3-0-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | History and development of Kannada. Structure and grammar of Kannada Classical works Kannada such as Vachana Sahitya Leading modern literary works (Fiction, poetry, plays and critical writing) in Kannada Major translations of important literary works into Kannada Translations of technical works (science and technology) into Kannada |
| 4 | Texts/References | Malegalalli Madumagalu, Kuvempu, 1967, Amazon.in, 2015 Kannada Sahitya Charitre, Ram Shri Mugali, Gita Book House, 2023 Chidambara Rahasya, Poornachandra Tejaswi, Sahitya Bhandara, 1985 Mookajjiya Kanasugalu, Kota Shivarama Karanth, S.B.S. Publishers Distributors (1968) Kavirajamarga, Amoghavarsha I (800 C. E.) |

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| 1 | Title of the course (L-T-P-C) | Marathi-1 (3-0-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | Modern Marathi Literature Folk Art and Folk Literature Linguistic study and grammar of Marathi History and Trends in Modern Marathi Literature Western Poetics Principles of Literary Criticism Marathi Criticism |
| 4 | Texts/References | Marathi Vyavaharik Marathi, Dr.Snehal Tavare, Pune Snehvardhan Prakashan (1994) Mahandambeche Dhawale (Padya), Dr. Suhasini Irlekar, Pune Snehvardhan Prakashan (1977) Madhyayugin Marathi Sahityavishayi, Dr. Satish Badave, Prashant Publications (2015) Naach Ga Ghuma (Atmcharitra), Madhavi Desai, Indrayani Sahity Prakashan online from MarathiBoli.com (2015) |

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| 1 | Title of the course (L-T-P-C) | Sanskrit-1 (3-0-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | <p>Introduction to Sanskrit grammar and literature</p> <p>Epic and Purana literature, Vedas and Upanishads (selected passages and a small Upanishad such as Ishopanishad and chapters from the Bhagavadgeeta)</p> <p>Sanskrit prose and poetry (with examples from Kalidasa, Bhavabhuti, Magha and Bharavi)</p> <p>Sanskrit dramas (Selected acts from plays such as Abhidnyan Shakuntalam)</p> <p>Popular tales, fables and nibanandas Selected Sanskrit Maxims (Aphorisms) Modern Sanskrit Literature</p> <p>Translations of technical works into and from Sanskrit</p> |
| 4 | Texts/References | <p>Outlines of Sanskrit Literature, M. N. Joshi, Roopa Publications, Dharwad, 2016</p> <p>Sanskrit Kavya, K. Krishnamurthy, Vidyut Prakashana, Mysore, 2003</p> <p>The ten classical Upanishads Vol-1, P. B. Gajendragadkar, Bharatiya Vidya Bhavan, 2014</p> <p>Essentials of Rigveda, SAKSI, Bangalore, 2013</p> <p>The history of Sanskrit Literature, C. V. Vaidya, Parimala Publications, Delhi, 2013</p> <p>The Bhagavadgeeta with English Translation, Swami Chidbhavananda, Tapovana Publishing House, Thirucrapalli, 1965</p> |

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| 1 | Title of the course (L-T-P-C) | Introduction Music-1 (3-0-0-6) |
| 2 | Pre-requisite courses(s) | None |
| 3 | Course content | <p>Theory: History of Indian Music. Popular Folk and Classical Music Origin and development of Hindustani and Carnatic Music Shrutis, Swaras and Saptakas, Notation systems Thats, Ragas and a few common Talas. Ten common Thats and one raga in each that:</p> <p>Bhairav, Bhimpalaa, Kalyan and Bhairavi</p> <p>Musical Instruments and their pitches Western Classical Music: Melody and Harmony Popular music Practicals: One raga in each of the four Thats mentioned above either vocal or in any musical instrument:</p> |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Hindustani music - by G.H.Ranade, Popular Prakashan, 1951 2. Indian music - by B.V.Keskar, Popular Prakashan, 1967 3. Melodic types of Hindustan by Narendra Kumar Bose, Jaico Publishing House, 1960. 4. Musical instruments of India – e-Book, Ministry of Information and Broadcasting, 2015 5. Bhatakande Sangeet Shastra – by Pandit V.N.Bhatakande (part I to IV), Sangeet Karyalaya, Hatharas, 2000 6. Sangeet Visharad – edited by L. N. Garg, Sangeet Karyalaya, Hatharas, 1998 7. Tabla - by Aravind Mulgaokar, Maharashtra Text Book Board, 1975 8. Raag Bodh Parts 1 to VI, B. R. Deodhar, Popular Publications (2011). |

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| 1 | Title of the course (L-T-P-C) | Introduction to Industrial Organization (3-0-0-6) |
| 2 | Pre-requisite courses(s) | 3-0-0-6 |
| 3 | Course content | <ol style="list-style-type: none"> 1. Introduction to Industrial Economics: Overview of Industrial Economics. Theoretical foundations of Industrial Economics, Structure-Conduct-Performance paradigm 2. Introductory Microeconomics: Consumer behaviour and demand, Production functions, Cost functions, Economies of scale and scope, Short-run and Long-run Cost Analysis 3. Game Theory and Strategic Behaviour: Normal Form Games, Extensive Form Games, Repeated Games, Games with Imperfect Information 4. Market Structures: Perfect Competition, Monopoly, Oligopoly, Monopolistic Competition, Collusion, Market Structure and Market Power 5. Pricing Strategies: Price discrimination, Price skimming, Penetration pricing, Bundling 6. Vertical Relations: Double Marginalization and Two-Part Tariffs, Retailer Competition, Investment Externalities, Manufacturer Competition 7. Product Differentiation: Horizontal and vertical differentiation, Product differentiation and market power, Product positioning 8. Strategic Behaviour, Entry and Exit: Entry costs and market structure, Free entry and social welfare, Entry deterrence, Predation, Mergers and acquisitions Research and Development: Market structure and incentive for R&D, Dynamics of R&D competition. |
| 4 | Texts/References | <ol style="list-style-type: none"> 1. Industrial Organization, Markets and Strategies (Cambridge University Press (2nd Edition 2015)) by Paul Belleflamme and Martin Peitz 2. Industrial Organization: Theory and Applications (The MIT Press, 1st Edition, 6th reprint) By Oz Shy 3. The Theory of Industrial Organization (Prentice Hall India Learning Private Limited; 1st Edition) by Jean Tirole 4. A Course in Microeconomic Theory. (Princeton University Press (Illustrated Edition 2020)) by D. Kreps <p>An Introduction to Game Theory. (Oxford University Press (1st Edition, 2005)) by Martin J. Osborne</p> |

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| 1 | Title of the course (L-T-P-C) | National Cultural Appreciation (NCA) |
| 2 | Pre-requisite courses(s) | NA |
| 3 | Course content | <p>The NCA course will have four five segments: theatre, music, puppetry and dance. It is also possible to add more segments to this course based on the availability of the instructors and the demand from the students. The first-year B.Tech students will select any two of the segments. The course will run in both 1st semester and 2 semesters. The first-year B.Tech students will opt for one segment in each semester of their 1st year. The choice of/from these courses will be based on their merit and performance. Different segments will have different evaluation criteria. Each segment will be offered by an Instructor. Capping on the number of students may be done by the instructor of a segment.</p> <p>Theatre Segment</p> <ol style="list-style-type: none"> 1. Introduction to theatre <ol style="list-style-type: none"> a. Concept of Play and Performance b. Folk: Both from Classical and Contemporary perspectives 2. Explicating the styles of performance (stylization covers Realistic, Surrealistic, modern and postmodern aspects) 3. Engaging with text (Play), focusing speech and movement 4. Practicing spot improvisation 5. Playscript 6. Skit improvisation and practice. 7. Demo by the participants <p>Music Segment</p> <ol style="list-style-type: none"> 1. To give an understanding of what music is and what it means to us. 2. Explain the concept of pitch, sound, tone, etc. 3. Explain the meaning of Navarasas and the process of finding them with musical notes. 4. Explanation of Shruti and Laya and its significance. 5. Briefly exploring the science of music. 6. Exploring the ability of a student to express a story with music. 7. Practice and Demonstration by students with a description of pitch, sound, tone, voice, and music. <p>Puppetry Segment</p> <ol style="list-style-type: none"> 1. Exploring the history and theories of Puppetry 2. Exploring different forms of puppetry. 3. Give practice to students in multiple performance expressions 4. Provide the students with experience with a variety of tools and materials involved in puppetry art. 5. Students are guided to take movement classes, fabric manipulation classes, design classes, drawing classes, rendering classes and stop motion classes. <p>Dance Segment</p> <ol style="list-style-type: none"> 1. Introduction to the Dance <ol style="list-style-type: none"> a. Concept of Dance and the Concept of Performance b. Different forms of dance 2. The dance segment will explore the Indian Contemporary/Freestyle dance practices 3. Focus is given to the comprehensive improvisation of movement of a choreographer/dancer. 4. Observing the capability of dancers, improvisation of movement will be choreographed. <p>Visual Arts and Crafts Segment</p> <ol style="list-style-type: none"> 1. Exploring Styles and schools of Fine arts- Paintings .through History including Indian artists 3. Exploring Crafts around the world and India 4. Evolution of applied arts-crafts into Design Technology -the Science behind Aesthetic perception & appreciation 5. Art as Therapy- Assignments on exploring 'self' through art expression. 6. Craft workshop by invited expert |

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| | | <p>7. Assignments on creativity using Generative AI</p> <p>8. Quizzes on identifying Art and Craft genres.</p> |
| 4 | Texts/References | <p>REF:</p> <ol style="list-style-type: none"> 1. Partha Mitter, Indian Art (2001), Oxford University Press 2. B.N. Goswamy, the spirit of Indian painting: close encounters with 100 great works, 1100 – 1900 (2014), PENGUIN 3. Nitin Singhania; Indian Art and Culture 5th Edition Paperback – McGraw Hill . 2023. 4. Banes S., & Lepecki, A., The senses in performance. New York: Routledge, 2007. 5. Hollander J., Indian folk theatres. London: Routledge, 2007. 6. Vergine L., Body art and performance: The body as language. Milan: Skira, 2007. 6. Lal A., The Oxford companion to Indian theatre. New Delhi: Oxford University Press, 2004. 7. Wade B. C., Music in India: The classical traditions. New Delhi: Manohar, 2001. 8. Mittal A., Hindustaani music and the aesthetic concept of form. New Delhi: D.K. Printworld, 2000. 9. Ragini D., Dance dialects of India. Delhi: Motilal Banarsidass, 1990. |