ANDHRA KESARI UNIVERSITY ::ONGOLE

Multidisciplinary Course

w.e.f. AY 2025-26

SEMESTER-IV

FUNDAMENTALS OF ECONOMICS

Credits: 2 **2 hrs/week**

UNIT I- BASIC CONCEPTS (08 Hours)

Meaning of Economics, Nature and Scope of Economics, Micro & Macro Economics meaning and difference.

UNIT II- MICRO ECONOMIC CONCEPTS (10 Hours)

Theory of Demand and Supply, Meaning of utility, diminishing marginal utility; indifference curves analysis and consumers equilibrium; Production Function, Types of Costs and Revenue, Classification of Markets.

UNIT III- MACRO ECONOMIC CONCEPTS (12 Hours)

Meaning - Concepts and measurement of National Income ; Definition of Money-Types and Functions ; Evolution and Functions of Central Bank, Commercial Banks; Meaning of Inflation- causes and Anti-inflationary policies, Monetary and Fiscal Policy.

References:

Ahuja H. L. Principles of Micro economics, S. Chand Limited, Delhi.

Koutsoyiannis, A. (1990), Modern Microeconomics, Macmillian.

Gupta, S.B, Monetary Economics, S Chand & Co, New Delhi.

Dwivedi,D.N , Microeconomics-Theory & Applications‖, Pearson.

Stonier,A.W&Hague.Douglas.C ,A Text Book of Economic Theory, Pearson.

Ackley.G , Macroeconomics: Theory And Policy, Macmillan, New York

Dwivedi,D.N , Macroeconomics: Theory and Policy , Tata McGraw Hill Education

Jhingan, M.L , Macroeconomics ,Vrinda Publications, New Delhi.

10/9/25

(Dr. Yadla Kandala Narendra)

BoS Chairperson, Economics (UG)

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SEMESTER-IV

INDIAN PHILOSOPHY

Credits: 2 **2 hrs/week**

Learning Objectives:

The student should understand and appreciate the diverse philosophical theories of ancient India. The student should develop rational perspectives on pertinent questions of the world and human life, as viewed by ancient thinkers. The student should comprehend the intellectual heritage and legacy of free thinking in India.

Learning Outcomes: On successful completion of the course, the student

1. Understands what Philosophy is and its significance in human life.
2. Gains knowledge of Indian philosophical tradition and intellectual heritage.
3. Develops a critical understanding of philosophical theories of ancient systems.
4. Examines the rational character of Indian theories of knowledge.
5. Appreciates the ethical insights of ancient thinkers.

Unit-I

Introduction to Philosophy – Metaphysics, Epistemology and Ethics - Indian Philosophical Tradition – Vedas – Philosophical Speculations of Upanishads – Darsanas – Orthodox and Unorthodox Systems of Philosophy – Metaphysical Diversity – Overview.

Unit -II

Indian Epistemology – Knowledge – Sources of Knowledge (Pramanas) – Perception (Pratyaksha) – Inference (Anumana) – Sabda (Testimony) – Other Pramanas – Theories of Error – Nyaya Philosophy

Unit –III

Ethics – Morality and Ethics – Significance of Ethics in Indian Philosophy - Rita – Hedonism of Materialists - Dharma – Karma – Moksha - Ethics of Renunciation – Nirvana – Pamcha Vratas – Purusharthas - Duties of a Student - Varna and Asrama - Ethics of Bhagavad-Gita – Nishkama Karma – Sthithaprajna

Activities:

Group Discussions
Debates
Assignments
Essay Writing
PPT Presentation
Charts/Poster presentation

Reference Books:

- An Introduction to Indian Philosophy by Satishchandra Chatterjee and DM Dutta, Motilal Banarsidass Publishers, 2016
- The Essentials of Indian philosophy by M. Hiriyanna, Motilal Banarsidass Publishers, 1995
- A Source Book in Indian Philosophy by Dr. Sarvepalli Radhakrishnan, Princeton University Press, 2014
- A History of Indian Philosophy by Surendranath Dasgupta, the University of California, 1922
- A Critical Survey of Indian Philosophy by Chandradhar Sarma, Motilal Banarsidass Publishers, 2000.
- The Six Ways of Knowing by D. M. Datta, Open Source, 1960

Approved and forwarded

BOS – Chairman.

ANDHRA KESARI UNIVERSITY ::ONGOLE

Multidisciplinary Course

w.e.f. AY 2025-26

SEMESTER-IV

PERFORMING ARTS

Credits: 2 — 2 hrs/week

Learning Outcomes:

After successful completion of this course, the student will be able to:

1. Acquire the basic knowledge in performing arts
2. Understand the modern stage and performance on the stage
3. Comprehend and improve the skills related to performing arts on the stage
4. Understand various Telugu folk arts and their significance
5. Know the modes of presentation and skills pertaining to folk arts.

SYLLABUS:

Unit-I: Introduction to performing Arts 06 Hrs

Arts – and its definition; Fine Arts; Arts - Learning &Imitation – Rasaas,Bhaavas and Rasa Sutra.Dasaroopakaas; Nrittha, Nrithya,Natya; Action – Kinds of Actions; Ancient Costume style .

Unit-II: Performing Arts – Stage Arts 10 Hrs

Origin of Drama (Theatre); Features of Stage; Varieties of Modern Telugu Drama; Famous Telugu Dramas.

Stage performance; Dramatic Actor and its definition; Actor–characteristics, Functions and Responsibilities.

Traits of an Actor – Diction, Articulation, Dialogue modulation, Time sense, Observation, Mime, Improvisation, Commentary,

Dress code, Make-up, lighting &Stage Direction.

Unit-III:Performing Arts – Forms 10 Hrs

Folk Arts, theirnature and significance – Brief introduction to Pagativeshaalu, Bommalaatalu, Veedhinaatakaalu, Yakshagaanaalu, Harikathalu, Burrakathalu, Oggukathalu, Chindu,Yakshagaanam, Kolaatamand Pulivesham.

Co-curricular Activities Suggested: (4 hrs)

1. Collection of information on modern stage plays, natakasamajams and audio visual material.
2. Providing training classes/inviting lectures with the help of local artists
3. Visit to a real time performing folk arts, if possible.
4. Mock experience classesof Stage plays and Folk arts.
5. Assignments, Group discussion, Quiz etc.

References:

1. Andhra Naataka Ranga Charithra –Mikkilineni Radha Krishna Murthy
2. Telugu SahithyaSameeksha (Vol-II) – Dr. G. Nagaiah
3. Telugu NaatakaVilaasam – Dr. P.S.RAppa Rao
4. Telugu JaanapadaVignanam – Prof. Tangirala Venkata Subba Rao
5. JaanapadaVignandhyayanam – Prof. G.S. Mohan
6. NaatyaSasthramu (VisleshanathmakaAdhyayanam) – Dr. P.S.RAppa Rao
7. SahithyaSilpaSameeksha – Prof. PingaliLakshmikantham
8. Nurella Telugu NatakaRangam – Prof. ModaliNagabhushanaSarma
9. Websites on Performing Arts.

APPROVED AND FORWARDED

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(BOS-chairman)

ANDHRA KESARI UNIVERSITY ::ONGOLE

Multidisciplinary Course

w.e.f. AY 2025-26

SEMESTER-IV

INTRODUCTION TO GEOGRAPHY

Credits: 2 — 2 hrs/week

Course Description:

This course serves as an introduction to the field of geography, exploring the fundamental concepts, theories, and methods used to study the Earth's physical features, human societies, and their interactions. Through lectures, readings, discussions, and practical exercises, students will develop a comprehensive understanding of geographic principles and how they shape our world.

Course Objectives: By the end of this course, students should be able to:

1. Define and explain key geographic concepts and terms.
2. Describe and analyse the Earth's physical features, including landforms, climate, and ecosystems.
3. Understand the spatial distribution of human populations, cultures, and societies.
4. Analyse the interactions between humans and the environment.
5. Interpret maps, globes, and spatial data.

Course Outcomes: Students will be able to:

1. Demonstrate understanding of fundamental geographic concepts.
2. Identify and describe the absolute and relative locations of different places on the Earth's surface, using latitude and longitude coordinates and geographic landmarks.
3. Read, analyse, and interpret various types of maps.
4. Analyse the ways in which human societies interact with and impact their environments.

Course Outline:

Unit 1:

Introduction – Definition – Scope – Importance of Geography – Geographic Tools and Methods – Five Themes of Geography – Structure and Composition of Earth

Unit 2:

Plate Tectonics and Continental Drift – Landforms – Hydrosphere – Climate and Weather Patterns – Ecosystems and Biodiversity - Distribution and Depletion of natural resources - Environmental Hazards.

Unit 3:

Population Distribution and Growth – Cultural Landscapes and Cultural Diffusion – Language, Religion, and Ethnicity – Urban and Rural Landscapes – Migration and Urbanization – Globalization and its Impacts

Activities:

1. Case Studies in Geography
2. Applying Geographic Knowledge to Real-World Scenarios
3. Regional Studies: Exploring Different Parts of the World

Assessment Methods:

1. Quizzes and Examinations
2. Individual or Group Projects
3. Class Participation and Discussions
4. Map Interpretation Exercises
5. Presentations
6. Research Papers

Recommended books:

1. "*Geography: Realms, Regions, and Concepts*" by Harm J. de Blij and Peter O. Muller
2. "*The Geography Book: Activities for Exploring, Mapping, and Enjoying Your World*" by Caroline Arnold
3. "*How to Lie with Maps*" by Mark Monmonier
4. "*The Penguin State of the World Atlas*" by Dan Smith

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Approved and forwarded

(BOS-chairman)

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Multidisciplinary Course

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SEMESTER-IV

BASIC STATISTICS

Credits: 2 **2 hrs/week**

Objective: To provide basic understating of general statistical tools and their elementary applications and to create awareness on Indian Statistical System.

Learning outcomes

Unit-I: To understand the concept of Statistics and its merits and demerits. Distinguishing primary and secondary data. Classification, Tabulation and Pictorial representation of data.

Unit - II: To understand the basic nature of data and how a single value describes the entire data set.Measuring the degree of departure of a distribution from symmetry and reveals the direction of scatterdness of the items.

Unit - III: To understand the spread of the data and to draw conclusions from the comparison of averages.

To understand the concept of correlation and regression and to learn the degree of association between two variables and establishing relationship between the variables.

Unit I: Meaning, scope and limitations of Statistics

Collection of data: Primary and Secondary, Classification and Tabulation, Construction of frequency distribution.

Graphical Representation: Histogram, Bar, Pie and Frequency polygon.

(8hrs)

Unit II: *Measures of Central Tendency*: Features of good average, Arithmetic Mean, Median, Mode. Empirical relationship between Mean Median and Mode and skewness based on central values. (8hrs)

Unit III: *Measures of Dispersion:* Range, Quartile Deviation(QD), Mean Deviation(MD), Variance, Standard Deviation(SD), relationship between QD, MD and SD.Familiarizationof the concepts relating to Correlation and Linear Regression line. (8hrs)

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Books for Study:

1. Statistics (Theory, Methods, Application) D C Sancheti, V K Kapoor, Sultan Chand and Sons, New Delhi

2. Statistical Methods, S.P. Gupta, Sultan Chand and Sons, New Delhi

3. Statistics (Theory and Practice) B.N Gupta, Sahitya Bhavan, Agra

Web sites for free download books for Statistics
https://www.pdfdrive.com/introduction-to-statistics-books.html
http://www.freebookcentre.net/SpecialCat/Free-Statistics-Books-Download.html https://bookboon.com/en/statistics-ebooks
http://onlinestatbook.com/Online_Statistics_Education.pdf

Co-curricular activities:

Objective is to apply the theoretical concept to real life data which enhances the learning and interpretation ability to the current environment.

CoCA I: (i) Collect primary or secondary data and establish frequency distribution.
(ii) Suitable pictorial/ Graphical representation to the established frequency distribution

CoCA II: (i) Select the data and then calculate AM,Median and Mode and interpret the result.
(ii) Calculate the skewness based on central values and interpret the degree of departure of a distribution from symmetry and the direction of scatterdness of the items.

CoCA III: (i) Calculate the dispersion values of a data for a single or double data sets and todraw conclusions from the comparison of averages.
(ii) Select the bivariate data (for example, select marks of any two subjects of your course) and calculate the degree of association and establish the linear relationship and find the forecasting value.

CoCA IV: If there is an internet facility at your college/home, go through the Ministry of Statistics and Program Implementationsite *www.mospi.gov.in*to know about the Indian Statistical System and *https://desap.cgg.gov.in*or www.apdes.in to know about the Andhra Pradesh Directorate of Economics and Statistics(APDES) and its activities.

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SEMESTER-IV

INTRODUCTION TO NANOTECHNOLOGY

Credits: 2 — 2 hrs/week

Course Objective:

The objective of the course "Introduction to Nanotechnology" is to provide students with a comprehensive understanding of the principles, applications, and implications of nanotechnology from a multidisciplinary perspective.

Programme Outcomes:

By the end of the course, students will be able to:

1. Define and describe the fundamentals of nanotechnology: Students will develop a clear understanding of the basic concepts and principles of nanotechnology, including nanoscale materials, structures, and phenomena. They will grasp the unique properties and behavior of materials at the nanoscale and how they differ from macroscopic systems.

2. Understand the fabrication and characterization techniques in nanotechnology: Students will learn about the techniques and tools used to fabricate, manipulate, and characterize nanoscale materials and devices. They will explore techniques such as lithography, self-assembly, microscopy, spectroscopy, and nanofabrication methods.

3. Evaluate the ethical and societal implications of nanotechnology: Students will critically assess the ethical, social, and environmental implications of nanotechnology. They will explore issues related to privacy, health and safety, sustainability, and public perception, enabling them to make informed judgments and decisions regarding the responsible development and deployment of nanotechnology.

Syllabus:

Unit 1: Introduction to Nanotechnology

Overview of Nanotechnology: Definition, scope, and interdisciplinary nature of nanotechnology. Historical Development: Understanding the historical background and key milestones in the field of

nanotechnology. Nanoscale Science: Introduction to the unique properties and phenomena at the nanoscale, including quantum effects and surface-to-volume ratio. Nanotechnology Applications: Exploring the diverse range of applications of nanotechnology in various fields such as medicine, electronics, energy, and materials science.

Unit 2: Nanomaterials and Fabrication Techniques

Nanomaterials: Introduction to different types of nanomaterials, including nanoparticles, nanotubes, and nanocomposites. Understanding their synthesis, characterization, and properties. Top-Down Fabrication: Exploring top-down fabrication techniques, such as lithography and etching, used to create nanostructures and devices. Bottom-Up Fabrication: Introduction to bottom-up fabrication techniques, such as self-assembly and molecular nanotechnology, for the creation of nanoscale structures. Characterization Techniques: Overview of characterization techniques used to analyse and measure nanomaterials, including microscopy, spectroscopy, and diffraction methods.

Unit 3: Implications and Ethics of Nanotechnology

Environmental and Health Impacts: Understanding the potential environmental and health impacts of nanotechnology, including the risks associated with nanoparticles and nanomaterials. Ethical Considerations: Exploring ethical considerations related to nanotechnology, including privacy concerns, responsible research, and societal implications. Regulatory Framework: Introduction to the regulatory frameworks and safety standards for the development and commercialization of nanotechnology products. Future Perspectives: Discussing emerging trends, challenges, and future prospects in the field of nanotechnology, including advancements in nanomedicine, nanoelectronics, and nanomanufacturing.

Reference Books:

1. "Introduction to Nanotechnology" by Charles P. Poole Jr. and Frank J. Owens: This book provides a comprehensive introduction to the field of nanotechnology. It covers the basics of nanoscale science and engineering, fabrication techniques, nanomaterials, and various applications of nanotechnology.

2. "Nanotechnology: Principles and Applications" by Sulabha K. Kulkarni and Prakash C. Ghosh: This book offers an overview of the principles and applications of nanotechnology. It covers nanomaterials, nanofabrication methods, characterization techniques, and the role of nanotechnology in different sectors such as electronics, medicine, energy, and environmental remediation.

3. "Introduction to Nanoscience and Nanotechnology" by Gabor L. Hornyak, Joydeep Dutta, et al.: This textbook provides a comprehensive introduction to nanoscience and nanotechnology. It covers the fundamental concepts, fabrication techniques, characterization methods, and applications of nanotechnology. It also discusses societal and ethical considerations related to nanotechnology.

4. "Nanotechnology: Basic Science and Emerging Technologies" by Mick Wilson, Kamali Kannangara, et al.: This book presents the fundamental concepts and emerging technologies in nanotechnology. It covers nanoscale physics, chemistry, materials science, and engineering aspects of nanotechnology. It also explores the potential impact of nanotechnology on various fields, including medicine, electronics, and energy.

5. "Introduction to Nanotechnology" by Poole and Owens: This introductory textbook covers the basics of nanotechnology, including nanoscale phenomena, nanomaterials, fabrication techniques, and

applications in electronics, medicine, and energy. It provides a solid foundation for understanding the principles and potential of nanotechnology.

Student Activity

1. Assign students to create a timeline that highlights the key milestones and discoveries in the field of nanotechnology. They should include significant events, breakthroughs, and contributions from different scientists and researchers. Encourage students to incorporate visuals and descriptions to depict the historical development of nanotechnology.

2. Organize a class discussion or debate where students compare and contrast top-down and bottom-up fabrication techniques for creating nanostructures and devices. Assign students to research and present the advantages, limitations, and real-world applications of each technique. Encourage students to critically analyze and discuss the suitability of each technique for different scenarios.

3. Assign students to research and prepare a report on the potential environmental and health impacts of nanotechnology. Students should explore the risks associated with nanoparticles and nanomaterials, such as their release into the environment, bioaccumulation, and potential toxicological effects. They should analyse case studies and scientific literature to assess the current understanding of these impacts and propose strategies for risk assessment and mitigation.

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