



MANONMANIAM SUNDARANAR UNIVERISTY,
TIRUNELVELI-12

SYLLABUS

UG - COURSES – AFFILIATED COLLEGES

Course Structure for B. A. Economics

(Choice Based Credit System)

(with effect from the academic year 2023-2024 onwards)



Semester-III				
Part	Subject Status	Subject Title	Subject Code	Credit
I	LANGUAGE	TAMIL/MALAYALAM/HINDI	E1TL31/ E1MY31/ E1HD31	3
II	ENGLISH	ENGLISH	E2EN31	3
III	CORE V	MACROECONOMICS-I	EMEC31	4
III	CORE VI	MATHEMATICS FOR ECONOMICS	EMEC32	5
IV	ELECTIVE 3	PRINCIPLES OF MARKETING	EEEC31	3
IV	SEC 4	ENTREPRENEURIAL ECONOMICS	ESEC31	1
IV	EVS	ENVIRONMENTAL STUDIES	EEVS31	2
		NAAN MUTHALVAN Economics of Transportation *		2



Total Marks: 100 Internal Exam: 25 marks + External Exam: 75 marks

A. Scheme for internal Assessment:

Maximum marks for written test: **20 marks**

3 internal tests, each of **1 hour** duration shall be conducted every semester.

To the average of the **best two** written examinations must be added the marks scored in. The **assignment** for 5 marks.

The break up for internal assessment shall be:

Written test- 20 marks; Assignment -5 marks Total - 25 marks

B. Scheme of External Examination

3 hrs. examination at the end of the semester

A – Part : 1 mark question two - from each unit

B – Part : 5 marks question one - from each unit

C – Part : 8 marks question one - from each unit

➤ **Conversion of Marks into Grade Points and Letter Grades**

S.No	Marks	Letter Grade	Grade point (GP)	Performance
1	90-100	O	10	Outstanding
2	80-89	A+	9	Excellent
3	70-79	A	8	Very Good
4	60-69	B+	7	Good
5	50-59	B	6	Above Average
6	40-49	C	5	Pass
7	0-39	RA	-	Reappear
8	0	AA	-	Absent

➤ **Cumulative Grade Point Average (CGPA)**

$$CGPA = \frac{\sum (GP \times C)}{\sum C}$$

- **GP** = Grade point, **C** = Credit
- CGPA is calculated only for Part-III courses
- CGPA for a semester is awarded on cumulative basis

➤ **Classification**

- First Class with Distinction : CGPA $\geq 7.5^*$
- First Class : CGPA ≥ 6.0
- Second Class : CGPA ≥ 5.0 and < 6.0
- Third Class : CGPA < 5.0



Part I TAMIL

தமிழக வரலாறும் பண்பாடும்

அலகு 1

தொழில் பழங்கால வரலாறும் சங்ககால வரலாறும்

1. தொழில் தமிழர்
2. பழைய கற்காலம்
3. புதிய கற்காலம்
4. உலோகக் காலம்
5. அகழ்வாராய்ச்சியில் தமிழும் தமிழரும் (கீழடி வரை)
6. திணை வாழ்வியல் (களவு வாழ்க்கை, கற்பு வாழ்க்கை, உணவு, அணிகலன்கள், வாணிகம், விளையாட்டுகள்)
7. கல்வியும் கலைகளும்
8. தமிழ் வளர்த்த சங்கம்
9. சங்க கால ஆட்சி முறை
10. அயல்நாட்டுத் தொடர்புகள்

அலகு 2

ஆட்சியர் வரலாறு

1. மூவேந்தர் வரலாறு
2. பல்லவர் வரலாறு
3. நாயக்கர் ஆட்சி
4. முகம்மதியர் ஆட்சி
5. மராட்டியர் ஆட்சி

அலகு 3

ஐரோப்பியர் கால வரலாறு

1. போர்த்துகீசியர்
2. டச்சுக்காரர்கள்
3. டேனிஸ்கரர்கள்
4. பிரெஞ்சுக்காரர்கள்
5. ஆங்கிலேயர்கள்
6. பாளையக்காரர்கள்
7. இந்தியா விடுதலை போராட்டத்தில் தமிழ்நாடு

அலகு 4

விடுதலைக்கிபின் தமிழ்நாட்டு வரலாறு

1. மொழிபோராட்டம்



2. சமூக மறுமலர்ச்சி
3. தொழில்நுட்ப வளர்ச்சி

அலகு 5

மொழிப்பயிற்சி

1. நிறுத்தக் குறிகள்
2. கலைச்சொற்கள்
3. மொழிபெயர்ப்பு

Text Books

- தமிழக வரலாறும் பண்பாடும் - கே. கே. பிள்ளை, உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை
- தமிழர் நாகரீகம் பண்பாடும் - அ. தட்சிணாமூர்த்தி, யாழ் வெளியீடு, சென்னை
- தமிழக வரலாறும் பண்பாடும்-வே.தி.செல்லம், மணிவாசகர் பதிப்பகம், சென்னை

Reference Books

1. தமிழக சமுதாயா பண்பாட்டு கலை வரலாறு - கு சேதுராமன், என்,சி,பி.எச், சென்னை
2. தமிழர் கலையும் பண்பாடும்-அ .கா.பெருமாள், என்,சி,பி.எச், சென்னை
3. ஒரு பண்பாட்டின் பயணம்: சிந்து முதல் வைகை வரை - ஆர். பாலகிருஷ்ணன், ரோஜா முத்தையா ஆராய்ச்சி நூலகம், சென்னை.



MALAYALAM - POETRY

UNIT I

This unit focus on significance of Malayalam Poetry and trends.

To familiarize the early stages of Malayalam poetry- Folklore heritage-Pattu-Bhakthi movement- Cherussery-Ezhutachan- Kunjan Nambiar-

Detailed study:

Jaritha Vilapam (Mahabharatam kilippattu) Ezhutachan

UNIT II

Romanticism –Asan- Ulloor – Vallathol

Detailed study :

1. Veena Poovu (First 7 slokas only)- Asan
2. Aa poomala- Changampuzha

UNIT III

Modernity in Malayalam poetry- First phase

Post Independent India and Modernization of Nation in Malayalam poetry

Detailed study

1. Yuga Parivarthanam- Vailoppilli Sreedhara Menon
2. Gandhiyum Godseyum- N .V.Krishna Warriar

UNIT IV

Modernity in Malayalam poetry- second phase

Detailed Study

1. Gajendra moksham _ Sugathakumari
2. Kozhi – Kadammanitta
3. Megharoopan – Aattoor Ravi Varma
4. Budhanum Attin kuttiyum – A. Ayyappan

UNIT V

This unit introduces the nature of samakalika kavitha It also evaluates s a m a k a l i k a kavitha,- the contemporary poetry originated after modern poetry- women, Dalit, environment and cyber issues.

Detailed study

- 1.Pattanbipuzhamanalil – P P Ramachandran
- 2.Malayalakavithakku oru Kathu- S. Joseph
- 3.Thoramazha – Rafeek Ahammad
- 4.Muttamadikkumbol – Anitha Thampi
- 5.Survey of India-B.M.Manoj

Recommended Text

Puthukavitha Ed by Dr.O.K.Santhosh.Madras University Publication (5 poems only)

- (a) pattambipuzhamanalil,
- (b) Malayala kavithakku oru kathu,
- (c) Muttamadikkumbol,
- (d) Thoramazha,
- (e) Survey of India

Reading List (Print and Online)

1. Aadhunika Malayala Sahitya Charithram prasthanangalilode – Dr. K.M.George (Ed.)
2. Kairaliyute Kadha – N.Krishnapillai
3. Kavitha Sahitya Charithram – M.Leelavathi
4. Adrushyathayute Akhyanangal- Rajesh Chirapadu
5. Adhunikananthara Malayala Kavitha –C.R.Prasad
6. Pen kavitha malayalathil-Sheeba Divakaran,kerala bhasha institute.Thiruvananthapuram
7. Samakalika Malayala kavitha-M.B.Manoj,Samayam Classics. Kanoor
8. Varnnaraji Dr.M.Leelavathi



HINDI - Patra Lekhan aur Paribhashik Shabdavali

Unit I

Niji Patra Lekhan

- Niji Patra – Arth aur Bhed
- Pitaji/Mataji ke naam patra
- Mitra, Bhai aadi ke naam patra
- Paribhashik Shabdawali – 20 words

Unit II

Samajik Patra Lekhan

- Samajik Patra – Arth aur Bhed
- Aavedan Patra – Noukri, Chutti aadi
- Dak Adhikari ke naam patra
- Paribhashik shabdawali – 20 words

Unit III

Vyavasayik Patra Lekhan

- Vyavasayik Patra – Arth aur Bhed
- Prakashak ke naam patra
- Shikayathi
- Paribhashik shabdawali – 20 words

Unit IV

- Samanya Parichay
- Sarkari Patra
- Ardh-Sarkari Patra
- Gyapan, Paripatra
- Anusmarak
- Paribhashik Shabdawali – 20 words

Unit V

- Precis Writing And Applied Grammar (Ling, Vachan and Karak)

Reference Books

1. Viyavaharik Hindi, Hindi Prachar press, T.Nagar, Madras-600 017
2. Alekhan aur Tippan – Prof. Viraj
3. Alekhan - Kichlu

Related Online Contents (MOOCs, SWAYAM, NPTEL, YouTube, Websites, etc.)

1. <https://youtu.be/-kUPGG0B4tU>
2. <https://www.youtube.com/watch?v=xk14MNb1r7k>



GENERAL ENGLISH

Unit I ACTIVE LISTENING

Short Story

- 1.1 In a Grove – Akutagawa Ryunosuke Translated from Japanese by Takashi Kojima
- 1.2 The Gift of the Magi – O' Henry

Prose

- 1.3 Listening – Robin Sharma
- 1.4 Nobel Prize Acceptance Speech – WangariMaathai

Unit II INTERPERSONAL RELATIONSHIPS

Prose

- 2.1 Telephone Conversation – Wole Soyinka
- 2.2 Of Friendship – Francis Bacon Song on (Motivational/ Narrative)
- 2.3 Ulysses – Alfred Lord Tennyson
- 2.4 And Still I Rise – Maya Angelou

Unit III COPING WITH STRESS

Poem

- 3.1 Leisure – W.H. Davies
- 3.2 Anxiety Monster – RhonaMcFerran

Readers Theatre

- 3.3 The Forty Fortunes: A Tale of Iran
- 3.4 Where there is a Will – Mahesh Dattani

Unit IV Grammar

- 4.1 Phrasal Verbs & Idioms
- 4.2 Modals and Auxiliaries
- 4.3 Verb Phrases – Gerund, Participle, Infinitive

Unit V Composition/ Writing Skills

- 5.1 Official Correspondence – Leave Letter, Letter of Application, Permission Letter
- 5.2 Drafting Invitations
- 5.3 Brochures for Programmes and Events

Text Books (Latest Editions)

1. Wangari Maathai – Nobel Lecture. Nobel Prize Outreach AB 2023. Jul 2023.
2. Mahesh Dattani, Where there is a Will. Penguin, 2013.
3. Martin Hewings, Advanced English Grammar, Cambridge University Press, 2000
4. Essential English Grammar by Raymond Murphy

Web Resources

1. WangariMaathai – Nobel Lecture. Nobel Prize Outreach AB 2023. Mon. 17 Jul 2023.
<https://www.nobelprize.org/prizes/peace/2004/maathai/lecture/>
2. Telephone Conversation - Wole Soyinka https://www.k-state.edu/english/westmank/spring_00/SOYINKA.html
3. Anxiety Monster-RhonaMcFerran www.poetrysoup.com



MACRO ECONOMICS-I

Learning Objectives

- To understand the national income and its related concepts
- To analyse the classical theory of full employment and its advantages
- To illustrate the Keynesian under employment theory and its applications
- To evaluate the theories of Consumption and its types
- To acquire knowledge on inflation and its types

UNIT I

National Income

National Income: Definition –Concepts: GDP,GNP and Per Capita Income- National Income Measurement: Expenditure, Income and ValueAdded Approaches- Real and Nominal GDP – National Income Accounting - GDP Deflator – Green GDP – Happiness Index - Circular Flow of Income and Expenditure

UNIT II

Full Employment: Classical Theory

Introduction - Aggregate Demand and Aggregate Supply – Assumptions of Classical Theory – Say's Law – Wage and Price Flexibility - Employment and Output determination in Classical Model -Three Ranges in Aggregate Supply (AS)Curve

UNIT III

Under Employment: Keynesian Theory

Keynes's Critique of Classical Theory – Involuntary Unemployment – Underemployment Equilibrium- Effective Demand – Components - Wage Rigidity – Liquidity Preference - Consumption Function: Meaning and Attributes.

UNIT IV

Theories of Consumption

Keynesian Absolute Income Hypothesis – Duesenberry's Relative Income Hypothesis – Friedman's Permanent Income Hypothesis.

UNIT V

Investment Function

Meaning – Autonomous Investment – Induced Investment- MEC – MEI – Theory of Multiplier – Super Multiplier - Principle of Accelerator.

Textbooks

1. Mankiw. N Gregory (2000), Macroeconomics, Worth Publishers, New York
2. VaishM.C.(2003) Macro Economic Theory, S.Chand & Company Ltd New Delhi



3. Paul Krugman and Robin Wells(2015) Macroeconomics Worth Publisher
4. H.L. Ahuja, Macro Economics: Theory and Policy S.Chand, 2016
5. Andrew B. Abel and Ben S.Bernanke, Macro Econmics, Pearson Education, Inc., 7th Edition, 2011.

Reference Books

1. RudigerDornbusch , Stanley Fischer, and Richard Startz (2000), Macroeconomics, Tata McGraw-Hill Publishing Company, New Delhi.
2. Parkin, M., 2014. Macro Economics. 11th Edition. Essex: Pearson
3. Blanchard, Olivier and David R. Johnson (2013) Macroeconomics, Pearson.
4. Mueller, M.G. (Ed.) (1978), Readingsin Macroeconomics, Surjeet Publications, New Delhi
5. Roger E.A. Farmer (2002), Macro Economics, Thompson Asia Pvt Ltd., Singapore.

Web Resources

1. <http://www2.econ.iastate.edu/tesfatsi/sources.htm>
2. <https://www.khanacademy.org/economics-finance-domain/macroeconomics>
3. <https://www.econlib.org>
4. <https://economics.mit.edu/>
5. <https://hbswk.hbs.edu/>

MATHEMATICS FOR ECONOMICS

Learning Objectives

- To integrate the concepts of Economics with Mathematical tools.
- To use Matrices to find solutions in Economics.
- To describe the applications of Matrix algebra and its uses
- To know the differentiation and its function
- To understand the second order derivatives and its maxi mini function

UNIT I

Introduction

Variables, Constants, Equations and its types – Uses and limitations of Mathematics in Economics- Functions of one or more variables – Linear function, Parabola, Rectangular Hyperbola- Exponential, Logarithmic, Power function and Homogenous Function – Applications in Economics

UNIT II

Matrix Algebra and Determinants

Types of Matrices- Matrix Operations – Addition – Subtraction- Matrix Multiplication – Transpose –Determinants, Inverse and Properties (Problems).

UNIT III

Applications of Matrix Algebra

Solving a system of Linear Equations – Cramer's Rule and Matrix Inverse Method-



Leontief's Input-Output Model – Open and Closed Model- Components, Uses, and Limitations- Hawkins – Simon Conditions for Viability of Input and Output Model (Problems).

UNIT IV

Differentiation

Differentiability of a Function – Slope of a Curve – Increasing and Decreasing Functions – Rules- Exponential and Logarithmic Functions-Implicit Differentiation– Economic Applications: Marginal and Elasticity Concepts – Relationship between AR, MR, and Price Elasticity of Demand – Relationship Between Average and Marginal Cost.

UNIT V

Optimization (Single Variable)

Second Order Derivatives–Maximization and Minimization of a Function– Economic Applications – Output and Revenue Maximization -Cost Minimization – Profit Maximization under Perfect Competition, Monopoly, Discriminating Monopoly (Problems).

Textbooks

1. Mehta and Madnani (2019) Mathematics for Economists Sultan Chand and Sons
2. Edward T. Dowling,(2002) “Mathematical Methods for Business and Economics”, Schaum’s Outline Series, 3rd Edition, Mc Graw Hill
3. Renshaw Geoff, (2005) Maths for Economics, 3rd Edition Oxford University Press, Oxford
4. Carl P Simon & Lawrence E. Blume, “Mathematics for Economists”, Published by W. W. Norton & Company, 2010
5. Ian Jacques, “Mathematics for Economics and Business”, Pearson, 2018

Reference Books

1. Chiang, A. C., Fundamental Methods of Mathematical Economics, McGraw-Hill, 1984
2. G. Hadley, Linear Algebra Addison – Wesley Publishing Company, 1977.
3. K. Sydsaeter and P Hammond, Mathematics for Economic Analysis, Pearson Educational Asia, Delhi 2002
4. Mabett. Alan J Workout for Mathematics for Economist McMillan 1986.
5. R.G.D. Allen, Mathematical Analysis for Economists Macmillan and Co.Ltd., 2008

Web Resources

1. <https://www.coursera.org/learn/mathematics-for-economists>
2. <https://mitpress.mit.edu/9780262294805/mathematics-for-economics/>
3. <https://hummedia.manchester.ac.uk/school/soss/economics/pg/psmaths/pre-sessionmathbook.pdf>
4. <https://mitpress.mit.edu/9780262046626/mathematics-for-economics/>



PRINCIPLES OF MARKETING

Learning Objectives

- To understand the nature and scope of marketing and its functions
- To acquire knowledge on buying behavior, market segmentation and Consumer Protection Act
- To know the product, pricing decisions and pricing of new products
- To gain knowledge on promotional methods, advertising mediums and sales promotion.
- To analyse the marketing techniques and marketing services

UNIT I

Introduction

Marketing: Definition, Nature and Scope – Marketing Functions– Modern Concept of Marketing– Classification of Markets – Buying – Transportation – Warehousing – Standardization – Grading.

UNIT II

Buying Behaviour and Market Segmentation

Buying Behaviour– Classification - Buying Decision Process– Buying Motives – Consumer Protection Act 1986 and Latest Amendments- Market Segmentation: Concept and Methods - Product Differentiation Vs. Market Segmentation - Marketing Mix

UNIT III

Product and Pricing Decisions

Product: Meaning and Classification - Product Mix –Branding- Brand Decisions – Packaging and Labelling – Product Support - Product Life Cycle - New Product Development -Pricing Objectives - Pricing Policies and Strategies – Pricing of New Products

UNIT IV

Distribution and Promotion Decisions

Channels of Distribution: Meaning and Importance - Wholesaling and Retailing – Promotional Methods – Promotion Mix – Advertising: Objectives, Characteristics and Types of Advertising Mediums - Publicity – Personal Selling: Importance and Process - Sales Promotion and Distinctive Characteristics.

UNIT V

Modern Marketing Techniques

Modern Marketing— Direct Marketing– Social Marketing- Relationship Marketing– E- Marketing - Green Marketing – Marketing of Industrial and Consumer Products –



Marketing of Services – Marketing of Agricultural Products –Market Information System (MIS).

Textbooks

1. Dr.Rajan Nair(2020),Marketing, Sultan Chand and Sons.
2. Philip Kotler, (2016), Marketing: An Introduction, Asia Pacific Holding Private Limited
3. Karunakaran K (2011) Marketing Management (Text and Cases in Indian Context), Himalaya Publishing House Mumbai
4. Seema Gupta (2022) Digital Marketing 3rd Edition McGraw Hill
5. Gary M. Armstrong, Stewart Adam, Sara Marion Denize, Michael Volkov, Philip Kotler, “Principles of Marketing”, Pearson, 2017

Reference Books

1. Pillai, R.S.N and Bhagvathi (2010), Modern Marketing Principles and Practices. S Chand &CoLtd.,
2. Dr.C. B.Gupta,Dr.N.Rajan Nair(2020), Marketing Management ,Sultan Chand &Sons.
3. Varshney,R.Land B. Bhattacharyya(2022), International Marketing Management, Sultan Chand and Sons.
4. Dr.C.B.Mamoria, Pradeep Jain, Priti Mitra,(2013), Theory and Practice of Marketing,KitabMahal
5. Sheena Iyengar(2011) The Art of Choosing,Little Brown Book Group

Web Resources

1. <https://marketingland.com>
2. <https://www.worldsupporter.org/en/chapter/41634-summary-principles-marketing-kotler>
3. <https://mailchimp.com/marketing-glossary/marketing-mix-7ps/>
4. <https://www.linkedin.com/learning/paths/become-an-online-marketing-manager>
5. <https://www.wordstream.com/learn>

ENTREPRENEURIAL ECONOMICS

Learning Objectives

- To describes the factors influencing entrepreneurship
- To know the various theories of motivation and its advantages
- To Identify the opportunities to create value for others
- To evaluate the creativity and entrepreneurship.
- To analyse the sources of finance for business.

UNIT I

Introduction

Entrepreneurship: Meaning and Importance - Evolution of term ‘Entrepreneurship’ - Factors influencing Entrepreneurship: Psychological, Social, Economic and Environmental - Characteristics of an Entrepreneur - Types of Entrepreneurs- New Generations of entrepreneurship - Barriers to entrepreneurship



UNIT II**Entrepreneurial Motivation**

Motivation: meaning and Definition – Theories of Motivation: Maslow's, Herzberg's, McGregor's and Achievement Theory - Culture & Society - Values / Ethics – Risk-taking behaviour

UNIT III**Creativity and Entrepreneurship**

Creativity and entrepreneurship - Steps in Creativity - Innovation and inventions - Legal Protection of innovation - Skills of an Entrepreneur - Decision making and Problem Solving (Steps in Decision Making)

UNIT IV**Sources of Finance**

Sources of Finance: Long term Sources -Equity Shares, Preference Shares and debentures- Kinds Private Placements- IPO-SEBI- FDI- Institutional Finance - Banks - IDBI, IFCI, IIBI, ICICI, SIDBI, SFCs in India - Merchant Banks in India - NBFCs in India

UNIT V**Rules and Legislation**

Industrial Disputes Act 1947 - Factories Act 1948 - The Sale of Goods Act, 1950 - Industries Development (Regulations) Act, 1951 - The Industrial Employment (Standing Orders) Act-Environment (Protection) Act, 1986

Textbooks

1. Desai, V. (2009). Dynamics of Entrepreneurial Development and Management. Himalaya Publishing House.
2. Srinivasan, N. P., & Gupta, G. P. (2001). Entrepreneurial Development". Sultan Chand and Sons, New Delhi
3. Simon. C Parker, "The Economics of Entrepreneurship", Cambridge University Press, 2009
4. K.Glancey, R. McQuaidand Jo Campling,"Entrepreneurial economics", PalgraveMacmillan UK, 2000
5. Akland Alexander Tabarrok, "Entrepreneurial Economics", Oxford University Press, 2002

Reference Books

1. Glancey, K., McQuaid, R., &Campling, J. (2000), Entrepreneurial Economics. London: Macmillan.
2. Casson, M., & Buckley, P. J. (2010). Entrepreneurship, Edward Elgar Publishing.
3. Parker, S. C. (2018). The Economics of Entrepreneurship. Cambridge



University Press.

4. Harper, D. A. (2003). Foundations of Entrepreneurship and Economic Development. Routledge
5. Khanka, S. S. (2006). Entrepreneurial Development. S. Chand Publishing.

Web Resources

1. <https://www.startupindia.gov.in/>
2. <https://www.ediindia.org/>
3. <https://skillindia.gov.in/>
4. <https://www.startupindia.gov.in/>
5. <https://indianstartups.com/>

ECONOMICS OF TRANSPORTATION

Learning Objectives

- To understand the importance of Transportation.
- To learn about the different modes of Transportation.
- To describe the characteristics of road transport
- To know the importance of water transport in economic development
- To examine the drawbacks of transportation.

UNIT I

Transport

Meaning - Classification of Transport: Land –Water- Air - Importance of Transport - Limitations.

UNIT II

Road Transport

Characteristics of road transportation - Types of Roads based on Location and Traffic Type – Importance of Road Transport – Problems.

UNIT III

Rail Transport

Characteristics of rail transport- Types – Importance of rail Transport - Drawbacks

UNIT IV

Water Transport

Characteristics of Water Transport- Types – Significance of water transport- Limitations

UNIT V

Air Transport

Characteristics – Types of air transport - Advantages of air transport - Disadvantages.

Reference books

1. Puri. V.K & S.K. Misra (2022) Indian Economy
2. K. R. Gupta, J. R. Gupta, “ Indian Economy”, Altanic, 2008
3. Sankaran, S., Indian Economy, Margham Publications, Chennai, 2015
4. Ramesh Singh, “Indian Economy”, Mc Graw Hill, 2022



Web Resources

1. <https://www.yourarticlelibrary.com/transport>
2. https://en.wikipedia.org/wiki/Transport_in_India
3. <https://navata.com/cms/5-key-features-of-road-transportation/>
4. <https://www.euston96.com/en/rail-transport/>
5. <https://www.aplustopper.com/water-transportation-advantages-and-disadvantages/>
6. <https://thediplomaticinsight.com/air-transport-characteristics-advantages-disadvantages/>

ENVIRONMENTAL STUDIES

Course Objectives:

The main objectives of this course are:

- Enable the students to be aware of our natural resources, ecosystems and their linkages to society, livelihood, environment and conservation.

Unit I

Multidisciplinary Nature of Environmental Studies and Natural Resources:

Concept of Renewable and non-renewable resource, Natural resources and associated problems: Forest resources: Deforestation, Timber extraction, mining, dams and their effects. Water resources: Over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Land resources: Land degradation, man induced landslides, soil erosion and desertification.

UNIT II

Ecosystem: Concept of an Ecosystem, Structure and Functions of Ecosystem, Energy flow in the Ecosystem; Ecological Succession, Food Chains, Food webs and Ecological Pyramids, Characteristic Features of the following Ecosystem: Forest Ecosystem, Grassland Ecosystem and Desert Ecosystem, Aquatic Ecosystem (Ponds, Streams, Lakes, Rivers and Ocean Estuaries)

UNIT III

Biodiversity and its Conservation: Definition, levels and values of biodiversity; Threats to biodiversity- habitat loss, poaching of wildlife, man-wildlife conflicts, IUCN categories of threat; Terrestrial and marine hotspots of biodiversity in India; Conservation of Biodiversity - In-situ and Ex-situ conservation; Conservation schemes :Gir lion sanctuary project, Project tiger, Project elephant, Conservation of sea turtles in India. Ecotourism

UNIT IV

Environment Pollution: Types, causes, effects, and control - Air, Water, Soil and Noise pollution. Nuclear hazards and human health risks. Solid waste management: Control measure of urban and industrial waste. Climate change global warming, ozone layer depletion, acid rain, and impacts on human communities and agriculture



UNIT V

Social Issues and the Environment: Sustainable Development, Water Conservation, Resettlement and rehabilitation of people. Disaster Management: Floods, earthquake, cyclone and landslides. Consumerism and waste products; Environment Protection Act; Air and water (Prevention and control of Pollution) Act; Wild life protection Act; Forest conservation Act; Environmental movements (Chipko, Silent valley, Bishnois of Rajasthan). Environmental ethics. Environmental communication and public awareness.

Reading list

1. Erach Bharucha, 2021, Textbook of Environmental Studies for Undergraduate Courses, Third Edition, Orient blackswan Pvt. Ltd., Hyderabad.
2. V.K. Ahluwalia, Environmental Studies (Second Edition), Ane books India, T-Nagar, Chennai.
3. Y.K. Singh, 2006, Environmental science, New Age International (P) Ltd., Publishers, New Delhi.
4. S. P. Misra, 2023, Essential Environmental Studies, 4th Edn, Ane Books Pvt. Ltd., New Delhi.
5. G.S. Vijayalakshmi, A.G.Murugesan and N.Sukumaran, 2006, Basics of Environmental Science, Manonmaniam Sundaranar University Publications, Tirunelveli.

Recommended texts

1. N.Arumugam and V. Kumaresan, 2014, Environmental studies, 4th edition, Saras Publication, Nagercoil, TamilNadu.
2. M.Basu, and S. Xavier, 2016, Fundamentals of Environmental Studies, Cambridge University Press.
3. A.K. Mitra and R. Chakraborty, 2016, Introduction to Environmental Studies, Book Syndicate.
4. J.S. Singh, S.P.Singh, and S.R. Gupta, 2014, Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.

