

Bhattadev University
First Semester
Multi-Disciplinary Courses (MDCs)

The following Multi-Disciplinary Courses (MDCs) are offered for students admitted under Bhattadev University and studying in the First Semester:

Sl. No.	Department	Course Code	Course Name
1.	Anthropology	ANT1101003MD	Basics of Anthropology
2.	Arabic	ARA1101003MD	Indo-Arab Literature
3.	Botany	BOT1101003MD	Plant Diversity and Human Welfare
4.	Chemistry	CHE1101003MD	History of Chemistry
5.	Commerce	COM1101003MD	Basics of Commerce & Management
6.	Computer Science and Engineering	CSE1101003MD	Introduction to Computer Systems
7.	Economics	ECO1101003MD	Introduction to Economics
8.	Education	EDN1101003MD	Introduction to Education
9.	Geography	GGY1101003MD	Environmental Geography
10.	Hindi	HIN1101003MD	Spoken Hindi
11.	History	HIS1101003MD	History of Assam- I (4th Century CE to 1826 CE)
12.	Mass Communication and Journalism	MCJ1101003MD	Basics of Communication
13.	Mathematics	MAT1101003MD	Arithmetic, Geometry and Statistics
14.	Philosophy	PHI1101003MD	Ethics
15.	Physical Education and Sports	PHE1101003MD	Introduction To Physical Education and Sports
16.	Physics	PHY1101003MD	Physics for Everyone
17.	Political Science	POL1101003MD	Basics of Political Theory
18.	Sanskrit	SKT1101003MD	Fundamental Concepts of Sanskrit
19.	Sociology	SOC1101003MD	Indian Society: Images and Realities
20.	Statistics	STA1101003MD	Descriptive Statistics
21.	Zoology	ZOO1101003MD	Fundamentals of Animal Diversity

Students are required to choose **any one** course from the above list of MDCs as part of their curriculum. However, a student may choose an MDC offered by a department/discipline only if he/she has not studied the corresponding subject or a course offered by the department/discipline at the 10+2 level.

Anthropology

FIRST YEAR

FIRST SEMESTER

Course Code: ANT1101003MD

Course Name: Basics of Anthropology

NCrF Level: 4.5

Course Category: Multidisciplinary Course

Credits: Theory-03, Tutorial-00, Practical-00

Contact Hours: Theory-45.

Marks: End Semester Theory-50.

Course Objectives:

1. Impart the conceptual knowledge of Anthropology.
2. Provide an understanding of human diversity.
3. Explore the varied aspects of human society and culture.

Course Outcomes:

1. Learn about the meaning and scope of anthropology, their major branches and relation with other disciplines.
2. Learn about the aspects of human diversity.
3. Acquire the knowledge of human Society and culture.

Section I:

(15 Lectures, 15 Marks)

Meaning and scope of Anthropology, Major branches of Anthropology: Physical Anthropology, Socio-Cultural Anthropology and Prehistoric Anthropology. Relation of anthropology with other disciplines.

Section II:

(18 Lectures, 20 Marks)

Understanding human diversity: Biomarkers used for assessing diversity: morphological, metrical, bio-chemical and genetic.

Section III:

(12 Lectures, 15 Marks)

Culture and society: Definition and characteristic features of Human society – simple and complex societies. Concept of culture, characteristics of culture and its types.

Suggested Readings:

Bhattacharya D.K. (1987). *Prehistoric Archaeology*. New Delhi: Hindustan Publishing Corporation.
Bhattacharya D.K. (1996). *An Outline of Indian Prehistory*. Delhi: Palika Prakashan.
Bohannon, Paul (2007). *Social Anthropology*. Surjeet Publication. New Delhi.
Das, B. M. (2009). *Outline of Physical Anthropology*. Kitab Mahal, New Delhi
Davis K. (1981). *Human Society*. New Delhi: Surjeet Publications
Dube, S.C. (1992). *Indian Society*. National Book Trust of India. New Delhi
Kapoor, A.K. (1992). *Genetic Diversity among Himalayan Human Populations*. Vinod Publisher, Jammu
Majumdar, D.N & T.N. Madan (1963). *An Introduction to Anthropology*. Asia Publishing House, Bombay
Mandelbaum, David G. (1972). *Society in India*. Popular Prakashan Pvt. Ltd. Mumbai
Montague, M.F. Ashley (2010). *An Introduction to Physical Anthropology*. Surjeet Publications. New Delhi
Upadhyay, V.S. & Gaya Pandey (1993). *History of Anthropological Thoughts*. Concept Publishing Company New Delhi.

Arabic

First Semester

NCrF Level:4.5		Pre-requisite: Nil		Semester and Level: 1 st Semester (Level 100)		Mark Distribution		
Course Sl.No.	Type of Course	Course Code	Course Name	L.T.P.C	InternalMa rks	Theory end semester	Practical	Total
1	Multidisciplinary Course	ARA1101003MD	Indo-Arab Literature	2-1-0-3	Nil	50	Nil	50

Course Objectives (COs)

- CO1: Trace the history of Indo-Arab connections and the rise of Arabic in India.
- CO2: Examine Arabic language and literary growth under successive Islamic dynasties.
- CO3: Study key Indian Arabists and their contributions to Arabic scholarship.

Course Learning Outcomes (CLOs): Students will be able to:

- CLO1: Outline early Indo-Arab relations and the introduction of Arabic in India.
- CLO2: Describe Arabic literary developments under the Ghaznavids, Mamluks, Tughlaqs, and Mughals.
- CLO3: Identify major works and impact of Dehlawi, Shah Waliullāh, al-Khairābādī, and al-Ḥassanī.

Unit No.	Unit name :إسم الوحدة	Unit Content :محتويات الوحدة	No. of Classes	Marks
I	Unit- :Background of Arabic language in India	➤ Historical background of Indo-Arab relationship. ➤ The era of prophet Muhammad (PBUH) and India. ➤ The emergence of Arabic language in Indian Society ➤ Growth and development of Arabic language and literature in India	15	15
II	Unit: Development of Arabic Language and Literature in India in Different Islamic Periods	➤ The Ghaznawid Dynasty. ➤ The Mamluk or Slave Dynasty. ➤ The Tughlaq Dynasty. ➤ Mughal Dynasty.	15	15
III	Unit- Prominent Indian Arabic Scholars and their Literary Contributions to the Development of Indo-Arab Literature:	➤ Sheikh Abd Al-Haqq Muhaddith Al-Dehlawi ➤ Shah Wali Allah Delawi ➤ Fadl Haqq Al- Khairabadi ➤ Sayyid Abd Al-Hai Al-Hassani	15	20
Text Books: Rahman, Dr. Hafizur and Islam Dr. Hafiz Md.Nazrul, <i>Indo-Arab Literature</i> 1 st Ed. 10 th Sep. 2025				

Recommended Books:

- Ahmad, Dr. Ashfaq, Musahamah al- Hind Fi al- Nathr al- Arabi Khilala al-Qarn al- Ishrin, Ist ed. Delhi, Makoff Printers, 2003
- Ahmad, Dr. Ashfaq, Nafhah al-Hind: Tarazim al-Shukhsiyyat al-Hindiyyah Fi al-Thaqafah al-Arabiyyah al-Islamiyyah, New Delhi,2006
- Al-Bilgrami, Syed Ghulam Ali Azad, Aatharu Azad: Sabhah al-Marjan Fi Aathar Hindustan, Beirut, 2015
- Al-Hasani, Abd al-Hai, al-Ilam Biman Fi Tarikh al-Hind Min al-Aa’lam, Lucknow, Muassasah al-Sahafahwa al-Nashr, Nadwah al-Ulama,1992
- Ahmad, Dr. Ashfaq, Nafhah al-Hind: Tarazim al-Shukhsiyyat al-Hindiyyah Fi al-Thaqafah al-Arabiyyah al-Islamiyyah, New Delhi,2006.
- Al-Farooqi, Dr. Zubair Ahmad, Musahamah Dar al-Uloom Bi Deoband Fi al-Adab al-Arabi Hatta Aama 1980, New Delhi, Dar al-Farooqi, 1990
- Ahmad, Dr. Ashfaq, Nafhah al-Hind: Tarazim al-Shukhsiyyat al-Hindiyyah Fi al-Thaqafah al-Arabiyyah al-Islamiyyah,New Delhi,2006
- Al-Nadwi, Abul Hasan Ali, al-Muslimuna Fi al-Hind, 4th ed. Lucknow, al-Majma al-Islami al-Ilmi,1998

Botany

SEMESTER I

Course Code: BOT1101003MD

Course Name: Plant Diversity and Human Welfare

(L-2, T-1, P-0, C-3)

THEORY

(Lectures: 45)

Course Objectives:

1. Conceptualize Plant diversity and its different aspects.
2. Learn about different measures for biodiversity conservation.
3. Learn the role of plants in human welfare.

Course Learning Outcomes:

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

1. Identify exotic plant species.
2. Identify forest trees based on the characteristics of bark, flowers and fruits.
3. Understand the preservation methods of fresh and dry fruits.

Section I:

(L-7, T-3)

Plant diversity and its scope:

Genetic diversity, Species diversity, Plant diversity at the ecosystem level, Agro biodiversity and cultivated plant taxa, wild taxa; Values and uses of biodiversity: Ethical and aesthetic values; Methodologies for valuation, Uses of plants.

Section II:

(L-8, T-4)

Loss of biodiversity: Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agro biodiversity, projected scenario for biodiversity loss.

Management of plant biodiversity: Organizations associated with biodiversity management- Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations, Biodiversity information management and communication.

Section III:

(L-7, T-4)

Conservation of biodiversity:

Conservation of genetic diversity, species diversity and ecosystem diversity, In situ and *ex situ* conservation; Social approaches to conservation, Biodiversity awareness programmes; Sustainable development.

Section IV:

(L-8, T-4)

Role of plants in relation to Human Welfare: Importance of forestry, their utilization and commercial aspects

a) Avenue trees, b) ornamental plants of India. c) Alcoholic beverages through ages.

Fruits and nuts: Important fruit crops their commercial importance. Wood, fiber and their uses.

Suggested Readings

1. Krishnamurthy, K.V. (2004). An Advanced Text Book of Biodiversity - Principles and Practices. Oxford and IBH Publications Co. Pvt. Ltd. New Delhi.
2. Singh, J. S., Singh, S.P. and Gupta, S. (2006). Ecology, Environment and Resource Conservation. Anamaya Publications, New Delhi.
3. Rogers, P.P., Jalal, K.F. and Boyd, J.A. (2008). An Introduction to Sustainable Development. Prentice Hall of India Private Limited, New Delhi.

Chemistry

MULTIDISCIPLINARY COURSE

CHE1101003MD: History of Chemistry

Total lectures: 45(L+T)

Credits: 3 (L: 02, T: 01, P: 00)

Course Objective: *This course introduces students with historical development of chemistry.*

Learning Outcome: *On completion of this course, the students will be able to learn understanding of chemical science during different eras indifferent parts of the world, analyze the role played by the Chemical science in different eras in the evolution of modern-day science, and ethics in science*

Unit 1: (L: 10hr, T: 05hr)

Old traditions of Chemical sciences in various countries, Ancient Technology, Medicine in the ancient times, Ayurvedic Chemistry, Alchemy

India, Islamic & Chinese Alchemy, Metal extraction in the ancient times, Fiber, cloth and dying chemistry in the ancient times, Paper and ink in ancient times

Unit 2: (L: 07hr, T: 03r)

Construction materials in the ancient times, The iron pillar of Delhi, Science & Technology in the West, Medieval and Renaissance Medicine

Unit 3: (L: 07hr, T: 03hr)

Modern traditions and methods, The Chemical Revolution: From Boyle to Dalton, Priestley's discovery of dephlogisticated air, Lavoisier and oxygen

Unit 4: (L: 06hr, T: 04hr)

Discoveries and Inventions in the context of state of art and impact, Development of chemistry during the industrial revolution, Development of chemistry during World War, Ethics in science.

Recommended Books:

1. Brock, W. H. *The Chemical Tree: A History of Chemistry*, W. W. (Norton & Co.: New York, 2000).
2. Bell, M. S. *Lavoisier in the Year One*, (W. W. Norton & Co.: New York, 2005).
3. Tripathi, V. Ed. *Archaeometallurgy in India*, (Cambridge University Press, 1998).

Commerce

COM1101003MD: Basics of Commerce & Management

Total Lectures: 45

Course Credit- 03

Course Objectives

- a) To provide students with foundational knowledge of business operations and financial management, focusing on the key principles that drive organizational success.*
- b) To introduce students to the core concepts of financial accounting, including the recording, classification, and summarization of financial transactions.*
- c) To build student competencies in interpreting and analysing financial information, enabling informed decision-making in a business environment.*

Course Outcomes

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

- a) Record, classify, and summarize financial transactions using fundamental accounting principles and techniques.*
- b) Prepare essential financial statements—such as the income statement, balance sheet, and cash flow statement—in line with accounting standards.*
- c) Analyse basic financial data and statements to support effective business decision-making and organizational planning.*

Unit 1: Foundations of Business & Management

(15 Lectures)

Meaning of Trade and Commerce; Forms of Business Organization; Private, Public and Global Enterprises; Business Services; Emerging modes of business, Social Responsibilities of Business.

Unit 2: Business Environment

(15 Lectures)

Meaning and features of business environment, Importance of business environment; Dimensions of business environment Economic environment, Social environment, Technological environment, Political environment and Legal environment; Economic environment in India- Impact of Government Policy changes on business and industry.

Unit 3: Introduction to Management

(15 Lectures)

Meaning and Significance of Management, Principles of Management; Functions of Management- Production Management, Financial Management, Human Resource Management and marketing Management; Process of Management - Planning, Organizing, Staffing, Directing, Coordinating and Controlling.

Please note: Evaluation of Assignment marks will be based on case study analysis.

Suggested Readings:

1. Business Organisation and Management by P.C. Tulsian, Pearson Education.
2. Business Environment by V. C. Sinha & Ritika Sinha, SPBD Publishing House.
3. Business Environment by Amit Kumar, Sahitya Bhawan Publications.
4. Principles and Practice of Business Management by L M Prasad, Sultan Chand & Sons.

Computer Science and Engineering

	Bhattadev University, Bajali Department of Computer Science and Engineering							CURRICULUM		
	Programme	B.Sc. / B.A. / B.Com. FYUGP			Year of Regulation		2026–27			
	Department	Computer Science and Engineering			Semester		I			
Course Code	Course Name	Pre-Requisite	Credit Structure				Marks Distribution			
			L	T	P	C	IA	PR	ESE	Total
CSE1101003MD	Introduction to Computer Systems	—	3	0	0	3	0	0	50	50
			CLO's		Statement				Bloom's Taxonomy	
Course Objectives	To introduce students from different disciplines to the basic concepts of computers and digital technologies.	CLO1		Explain the basic concepts of computers, software, operating systems and digital technologies.				Understand		
	To develop awareness of office productivity tools used in academic and professional environments.	CLO2		Use word processing, spreadsheet and presentation tools for creating digital documents and presentations.				Apply		
	To introduce Internet services, online communication and digital collaboration tools.	CLO3		Use Internet services, email, cloud storage and online collaboration tools effectively.				Understand, Apply		
	To create awareness of artificial intelligence and its applications in various fields.	CLO4		Describe the basic concepts and applications of artificial intelligence and generative AI tools.				Understand, Analyze		
	To create awareness of cyber safety, digital payments and online privacy.	CLO5		Identify common cyber threats and apply safe practices while using digital services and online payments.				Apply, Evaluate		
	To encourage ethical, responsible and productive use of digital technologies.	CLO6		Demonstrate responsible digital citizenship and ethical use of technology in everyday life.				Apply, Create		

SYLLABUS				
No.	Content	Hours	CLOs	
I	Introduction to computers and their applications in everyday life. Types of computers and smart devices. Basic components of a computer system: input devices, output devices, storage devices and processing units. Hardware and software concepts. Operating systems and their functions. Role of computers in education, business, healthcare, agriculture, governance and communication. Digital information and digital transformation in modern society.	12	CLO1 CLO6	
II	Word processing using Microsoft Word/Google Docs. Creating and formatting documents. Spreadsheet basics using Excel/Google Sheets: tables, simple calculations and charts. Presentation tools using PowerPoint/Google Slides. Creating professional reports and presentations. Cloud storage and file sharing. Introduction to online collaboration tools.	11	CLO2 CLO3	
III	Internet and web browsers. Search engines and effective information searching. Email communication. Social media and professional networking. Online meetings and video conferencing tools. Introduction to Artificial Intelligence and Generative AI tools. Responsible use of AI tools such as ChatGPT and Gemini. Applications of AI in education, business, healthcare and society.	11	CLO3 CLO4	
IV	Cybersecurity basics. Common online threats such as phishing, malware and online fraud. Password security and privacy protection. Safe use of social media. Digital payments using UPI, digital wallets and online banking. Digital footprints and online reputation. Ethical use of technology, plagiarism, copyright awareness and responsible digital citizenship.	11	CLO4 CLO5 CLO6	
Total Hours (4 Modules)		45		
Text Books:				
1. Priti Sinha and Pradeep K. Sinha, <i>Computer Fundamentals</i> , BPB Publications.				
2. Anita Goel, <i>Computer Fundamentals</i> , Pearson Education.				
3. Reema Thareja, <i>Fundamentals of Computers</i> , Oxford University Press.				
Reference Books:				
1. V. Rajaraman and N. Adabala, <i>Fundamentals of Computers</i> , PHI Learning.				
2. Peter Norton, <i>Introduction to Computers</i> , McGraw-Hill Education.				
3. Alexis Leon and Mathews Leon, <i>Introduction to Computers</i> , Leon Tech World.				

Economics

Semester I

MULTIDISCIPLINARY COURSE

ECO1101003MD

Introduction to Economics

Programme	: Four-Year Undergraduate Programme
NCrF Level	: 4.5
Course Category	: Multidisciplinary Course (MDC)
Credits (L: T: P)	: 3 (3:0:0)
Credit Hours	: Theory: 45 Hours

Course Description

This course presents the basic concepts and principles of Economics and their applicability in society. This course is intended for students with no prior knowledge of Economics. The course provides an overview of microeconomic and macroeconomic concepts, including consumer behaviour, demand and supply, production and cost, national income, economic growth, inflation, unemployment, poverty, and the role of government in economic development. This course would also cover the basics of money, banking, and public finance, as well as new advancements in the digital economy, such as digital payments, blockchain technology, and Central Bank Digital Currency (CBDC). The course attempts to link economic principles to real-world problems, thereby fostering economic literacy and improving students' grasp of economic decision-making in a fast-changing world.

Course Outcomes

At the end of this course, students will be able to:

CO1: Explain the basic concepts, scope, and importance of economics, and distinguish between microeconomics and macroeconomics in analyzing economic problems.

CO2: Apply fundamental microeconomic concepts, including consumer behaviour, demand and supply, elasticity, market equilibrium, production, and costs, to explain individual and market decision-making.

CO3: Explain key macroeconomic concepts, including national income, economic growth and development, inflation, unemployment, poverty, inequality, and the role of government in economic development.

CO4: Describe the functions of money, banking, public finance, financial inclusion, and emerging developments in the digital economy, including blockchain technology and Central Bank Digital Currency (CBDC), and relate them to contemporary economic issues.

Unit 1: Fundamental Microeconomic Concepts [15]

Meaning and Scope of Economics: Nature and importance of Economics, Microeconomics and Macroeconomics; Scarcity, Choice, and the Central Problems of an Economy; Economic Systems: Market economy, Command economy, Mixed economy; Consumer Behaviour and Utility (Conceptual understanding); Demand and Supply: Demand and the Law of Demand, Factors affecting demand, Supply and the Law of Supply, Factors affecting supply; Elasticities of Demand and Supply, Market Equilibrium: Interaction of demand and supply, Equilibrium price and equilibrium quantity.

Unit 2: Macroeconomics [15]

National Income and its related aggregates (Concepts only); National Income and Welfare; Circular flow of Income in a two sector economy, Keynesian Economics: Consumption, Savings, Investment, Aggregate Demand and Supply; Economic Growth and Economic Development; Sustainable and Inclusive Development; Inflation and Unemployment; Poverty and Inequality.

Unit 3: Money, Public Finance, and the Digital Economy [15]

Evolution and Functions of Money; Banking System and Financial Institutions; Financial Inclusion (Concept only); Sources of Government Revenue; Public Expenditure and Public Goods; Economics of Blockchain (Concept only); Central Bank Digital Currency (Concept only); Opportunities and Challenges of Digital Finance (Overview).

Suggested Readings

- 1 Samuelson, P. A., & Nordhaus, W. D. (2019). *Economics*, 20th Edition, New York: McGraw-Hill Education.
- 2 Ahuja, H. L. (2023). *Microeconomics: Theory and Applications*. New Delhi: S. Chand Publishing.
- 3 Ahuja, H. L. (2023). *Macroeconomics: Theory and Policy*. New Delhi: S. Chand Publishing.
- 4 Jhingan, M. L. (2023). *Money, Banking, International Trade and Public Finance*.
- 5 Concept Note on Central Bank Digital Currency, RBI (Available online <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/CONCEPTNOTEACB531172E0B4DFC9A6E506C2C24FFB6.PDF>)
- 6 Blockchain for beginners- EUBOF (Available online: https://blockchain-observatory.ec.europa.eu/document/download/1063effa-59cc-4df4-aeee-d2cf94f69178_en?filename=Blockchain_For_Beginners_A_EUBOF_Guide.pdf)

Education

Multi Disciplinary Courses

EDN1101003MD: Introduction to Education

NCrF Level: 4.5

Programme: Four Year Undergraduate Programme

Course category: Multidisciplinary

Credit (L:T:P:C): 3:0:0:3

Credit Hours: Theory: 45 Hours

Course Objectives:

- To develop an understanding of the concepts, nature and scope of education.
- To explain the forms, aims and agencies of education.
- To apply the principles of education in understanding the role of schools and teachers in society.
- To analyze the relationship between school and community in promoting educational development.
- To evaluate the contribution of education to individual and social development.

Course Outcomes:

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

- Understand the nature and scope of education as a lifelong process.
- Explain the different forms of education and the aims of education in different contexts.
- Apply the principles of education to understand the role of schools teachers and educational agencies in society.
- Analyze the relationship between school and community.
- Evaluate the contribution of education to individual growth and social development.

Unit 1: (Total lectures: 10): Concept of Education

- 1.1. Meaning and definition of education
- 1.2. Education as a bi-polar, Tri-polar and life-long process
- 1.3. Scope of Education

Unit 2: (Total lectures: 15): Types of education

- 2.1. Formal education, its characteristics and agencies
- 2.2. Informal education, its characteristics and role of family as an agency of informal education
- 2.3. Non-formal education and its various agencies

Unit 3 (Total lectures: 10): Aims in education

- 3.1. Individual Vs social aim of education
- 3.2. Vocational aim of education
- 3.3. Aims of education as recommended by the Kothari Commission, 1964-66

Unit 4 (Total lectures: 10): School and community

- 4.1. Conditions of school (material and non-material)
- 4.2. Qualities of a teacher
- 4.3. Relationship between school and community

4.4. School as a miniature society

Recommended books and references

- Barua, Jatin. *Sampurna Siksha*. Guwahati: L. B. S.
- Bhatia, K. K. *An Introduction to Education*. Delhi: Kalyani Publications.
- Das, Dr. L. *A Textbook of Education*. Guwahati: L. B. S.
- Das, Dr. L. *Sampurna Siksha*. Guwahati: L. B. S.
- Murthy, S. K. (1982). *Philosophical and Sociological Foundations of Education*. Ludhiana: Prakash Brothers.
- Noll, Victor H. (1962). *Readings in Educational Psychology*. New York: The Macmillan.
- Safaya, R. N. (1994). *Development of Educational Theory and Practice*. Delhi: Dhanpat Rai & Sons.
- Saxena, N. R. Swarup (2001). *Philosophical and Sociological Foundations of Education*. Meerut: R. Lal Books.

Geography

Curriculum Framework for FYUGP in Geography, 2026 **Syllabus of Multidisciplinary Course (MD)**

NCrF Level: 4.5

Semester - I

Course Name: Environmental Geography

Paper Code: GGY1101003MD

Total Marks: 50

(Theory: 50)

Total Credits: 3 (Theory: 3)

L:T:P :: 3:0:0

Total Hours: 45

(Theory & Tutorial: 45)

Course Learning Objectives

The course aims to:

- To introduce students to the concepts, principles, and scope of Environmental Geography.
- To develop an understanding of the interactions between humans and the environment from a geographical perspective.
- To familiarize students with ecosystem structure, ecological principles, and major environmental issues at local, national, and global scales.
- To develop awareness of environmental management strategies, policies, and sustainable development initiatives, with special reference to India and North East India.

Course Learning Outcomes

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

- CLO1: Explain the meaning, scope, and significance of Environmental Geography and human–environment relationships.
- CLO2: Describe the structure and functioning of ecosystems, ecological principles, and environmental processes.
- CLO3: Analyze major environmental problems and evaluate their geographical causes, impacts, and possible solutions.
- CLO4: Assess environmental management practices, environmental policies, and sustainable development programmes at global, national, and regional levels.

Theory (45 hours)

Unit - I: Fundamentals of Environmental Geography

(12 hours)

1. Meaning, nature, scope and significance of Environmental Geography.
2. Components of the environment: Physical, biological and cultural environment.
3. Human-environment relationship: Determinism, Possibilism and Neo-determinism.
4. Historical evolution of human-environment interaction: Pre-historical period, Historical period and Modern period.

Unit - II: Ecosystems, Ecology and Human Adaptation (12 hours)

1. Ecosystem: Concept, Types, Components, Structures and Functions.
2. Ecology: Meaning, Scope and Basic ecological principles.
3. Human adaptation in different biomes: Equatorial regions, Hills and mountains and Desert regions.

Unit - III: Major Environmental Problems (10 hours)

1. Environmental pollution: Air pollution, Water pollution, Soil pollution and Noise pollution.
2. Deforestation and Desertification.
3. Greenhouse effect, Global warming and climate change.
4. Biodiversity depletion and conservation.

Unit - IV: Environmental Management and Sustainable Development (11 hours)

1. Environmental management: Concept, Objectives and Approaches.
2. Sustainable development: Concept, Goals and principles.
3. Environmental programmes and policies: Global initiatives, National environmental policies and programmes, Environmental programmes in North East India.
4. Role of individuals and communities in environmental conservation.

Suggested Readings:

- *Environmental Geography*, Chandna, R.C. (2019), Kalyani Publishers.
- *Environmental Geography*, Savindra Singh (2020), Prayag Pustak Bhawan.
- *The Human Impact on the Natural Environment*, Goudie, A. (2018), Wiley-Blackwell.
- *Principles of Environmental Science*, Cunningham, W.P. & Cunningham, M.A. (2019), McGraw-Hill.
- *Environmental Science*, Miller, G.T. & Spoolman, S. (2020), Cengage Learning.
- *Textbook of Environmental Studies*, Bharucha, E. (2019), Universities Press.
- *Fundamentals of Ecology*, Odum, E.P. & Barrett, G.W. (2017), Cengage Learning.
- *Environmental Geography*, Singh, R.B. (Ed.) (2018), Heritage Publishers.
- *Environmental Geography*, Saxena, H.M. (2018), Rawat Publications.
- Reports and Environmental Policies, Ministry of Environment, Forest and Climate Change (Government of India).
- Publications on biodiversity conservation, National Biodiversity Authority (India).
- Reports of the North Eastern Council and State Pollution Control Boards of North East India.

Hindi

चार वर्षीय स्नातक कार्यक्रम पाठ्यक्रम

विषय : हिन्दी

छमाही : प्रथम

कोर्स-कोड : HIN1101003MD

कोर्स का नाम : स्पोकेन हिन्दी

(SPOKEN HINDI)

कुल अंक : 50

उद्देश्य: विद्यार्थियों की हिन्दी कथन क्षमता को विकसित करना इस प्रश्न-पत्र का उद्देश्य है ।

उपलब्धि : विद्यार्थी इस प्रश्न पत्र के जरिये खड़ीबोली हिन्दी के कथित रूप को विकसित कर पायेंगे, जिससे वे दैनन्दिन जीवन के सभी संदर्भों में मौखिक स्तर पर हिन्दी का प्रयोग कर पायेंगे ।

इकाई	क्रेडिट	पाठ्य-विषय	कक्षा-संख्या
1	1	स्पोकेन हिन्दी : अवधारणा,स्वरूप,उपयोगिता हिन्दी की स्वर एवं व्यंजन ध्वनियां एवं उनकी उच्चारण विधियाँ ।	15
2	1	दैनिक जीवन में प्रयुक्त शब्दावली : शरीर के अंग,मनुष्य एवं मानवीय संबंध,पोशाक,गहने,खाद्य पदार्थ,साग- सब्जी,पशु-पक्षी,पेड़-पौधे, घरेलू चीजें,काम करने की औजार, दिनों के नाम, महिने के नाम,संख्या-गिनती ।	15
3	1	अभिवादन, अपना परिचय-प्रदान, दूसरे की परिचय प्राप्ति, आत्मीय-जनों एवं मित्रों के साथ वार्तालाप, अपरिचित जनों के साथ बातचीत,विभिन्न कार्यालय आदि के संदर्भों में संबद्ध-जनों के साथ विविध प्रकार के वाक्यों के जरिये विचारों का आदान-प्रदान ।	15

संदर्भ ग्रंथ :

1. शुद्ध हिन्दी - डॉ हरदेव बाहरी, लोकभारती प्रकाशन, इलाहाबाद ।
2. आधुनिक हिन्दी व्याकरण और रचना - डॉ वसुदेवनंदन प्रसाद, भारती भवन, पटना ।
3. मानक व्यावहारिक हिन्दी व्याकरण तथा रचना - श्यामजी गोकुल वर्मा, आर्य बुक डिपो, नई दिल्ली ।
4. शुद्ध हिन्दी कैसे सीखें - राजेंद्र प्रसाद सिन्हा, भारती भवन, पटना ।

MULTI DISCIPLINARY COURSES (MDC)

SEMESTER: I

Course Title: HISTORY OF ASSAM- I (4th CENTURY CE TO 1826 CE)

Course Code: HIS1101003MD

NCrF Level: 4.5

Programme: FYUGP

Course Category: Multidisciplinary Course

Credit (L:T:P): 03 (2:1:0)

Credit Hours: 45 (Theory: 30 Hours, Tutorial: 15 Hours)

Course Objectives: This course is designed with the objective of familiarising the learners with the how the process of state formation started in Assam from 4th century CE to the medieval period. It will give idea how Assam witnessed various foreign invasions, and with unique war strategy and defense mechanism succeeded in retaining its sovereignty against the powerful aggressors. The course will enrich students with cultural developments such as literature, language, art and architecture during this period.

Course Outcomes: On completion of the course, the students will be able to:

- Understand the chronology of ancient and medieval history of Assam.
- Know about the administrative machinery developed by the Ahoms.
- Evaluate the role of Sankardeva towards the Assamese society.

Section-I (20 marks, 18 lectures)

1.1 Historical Dynasties: Varmanas- Pushya Varman, Bhuti Varman, Bhaskar Varman; Salastambhas- Sri Harsha, Harjarvarman; Palas- Brahmapal, Ratna Pal, Dharma Pal

1.2 Foundation and Consolidation of the Ahom Kingdom: Sukapha, Suhungmung, Pratap Singha

1.3 Koch Kingdom: Narnarayan and Chilarai

Section-II (20 marks, 18 lectures)

2.1 Ahom-Mughal Conflict: Mirjumla's Invasion, Battle of Saraighat

2.2 Ahom Rule at its Zenith: Gadadhar Singha, Rudra Singha, Siva Singha

2.3 Downfall of the Ahoms: Moamoria Uprising, Burmese Invasion

Section-III (10 marks, 9 lectures)

- 3.1 Sri Sankardeva and Neo-Vaishnavite Movement
- 3.2 Ahom Administration: Paik, Khel and Posa System
- 3.3 Literature, Art and Architecture under the Ahoms

Suggested Readings:

- Acharyya, N. N: *A Brief History of Assam*, Osmos Publications, New Delhi, 2007
- Barpujari, H. K.: *The Comprehensive History of Assam* Vol. I, Publication Board of Assam
- Barpujari, H.K.: *The Comprehensive History of Assam*, Vol II, Publication Board, Assam
- Barua, B. K: *A Cultrural History of Assam*, Guwahati, 1951
- Baruah, K. L.: *Early History of Kamrupa*, Guwahati, 1966
- Baruah, S. L: *A Comprehensive History of Assam*, Munshiram Monoharlal Publishers Pvt. Ltd., New Delhi, 1985
- Chatterjee, S. K: *The Place of Assam in the History and Civilization of India*, Gauhati University, 1973
- Choudhury, P. C.: *The History Civilization of the People of Assam*
- Dutta, D: *History of Assam*, Sribhumi Publishing Company, 1953
- Gait, E.A.: *A History of Assam*. 2nd edition, LBS Publication, Guwahati, 1962.
- Bhuyan, A .C, and: (ed) *Political History of Assam*, Vols. II & III.
- Devi, L: *The Ahom-Tribal Relations*
- Gait, E. A: *A History of Assam*, 2nd edition, LBS Publication, Guwahati, 1962.
- Gogoi, L: *A History of System of Ahom Administration*
- Nath, D: *History of the Koch Kingdom*
- Neog, M: *Sankardeva and His Times*
- Sarma, A. C: *Tai-Ahom System of Government*

Mass Communication and Journalism

PAPER CODE: MCJ1101003MD

BASICS OF COMMUNICATION

Credit L: T:P:C: 3:0:0:3

Total Marks: 50

Course Objectives:

- i. To introduce the basics of communication.
- ii. To familiarize students with different communication processes.
- iii. To provide knowledge about the Traditional form of Communications.

Course outcomes:

- i. Students will be able to describe the communication process.
- ii. Students will be able to explain various forms of communication.

Unit-1:

- 1.1 Communication: Concept and definition
- 1.2 Types of communication
- 1.3 Verbal and non-verbal communication
- 1.4 Elements of communication, Phases of Development of Human Communication

Unit-2

- 2.1 Barriers of communication
- 2.2 7 Cs of communication
- 2.3 Feedback: concept and effects
- 2.4 SMR and SMCR Model of communication

Unit-3

- .1 Traditional forms of communication
- .2 Various forms of Oral Communication: its meaning and definition
- .3 Story telling
- .4 Folk Media: Concept and Classification

Suggested readings:

- ❖ Kumar, K J. *Mass Communication in India*. New Delhi. JIACO
- ❖ Aggarwal, V B & Gupta, V.S. *Handbook of Journalism and Mass Communication*. Concept Publication, New Delhi

Mathematics

Title of the Course: Arithmetic, Geometry and Statistics.

Course Code: MAT1101003MD.

Category of Course: Multi Disciplinary Course.

NCrF Level: 4.5.

Credits: 2 (L)-1 (T)-0 (P)-3 (C).

Pre-requisite: NA.

Distribution of Marks: End Term Examination-100%.

Course Objectives: The course is designed to develop students' quantitative aptitude, analytical reasoning, geometrical understanding, and statistical thinking required for academic pursuits, competitive examinations, and real-life problem-solving. The objectives of this course are to:

- Develop proficiency in solving problems involving percentages, ratios, interest, profit and loss, time and work, and other quantitative aptitude topics.
- Introduce fundamental concepts of coordinate geometry and trigonometry and their applications in solving geometrical and measurement problems.
- Familiarize students with methods of data collection, organization, representation, and statistical analysis.
- Enable students to interpret numerical and graphical information and make informed decisions based on quantitative data.
- Prepare students for higher studies, competitive examinations, and professional applications requiring quantitative and analytical skills.

Course Learning Outcomes (CLO): After completion of this course, students will be able to:

CLO1: Apply concepts of percentage, ratio, proportion, interest, profit and loss, partnership, and related topics to solve quantitative aptitude problems.

CLO2: Analyze and solve problems involving time and work, pipes and cisterns, time and distance, boats and streams, clocks, calendars, mensuration, and age-related applications.

CLO3: Use trigonometric ratios, identities, and coordinate geometry techniques to solve problems involving heights, distances, straight lines, and geometric measurements.

CLO4: Organize, represent, and interpret statistical data using frequency distributions, graphs, and summary measures.

CLO5: Compute and analyze measures of central tendency, dispersion, skewness, and kurtosis for data interpretation.

Skills to be Learned from the Course:

- Quantitative aptitude and numerical reasoning.
- Mathematical problem-solving techniques.
- Financial literacy and commercial arithmetic skills.
- Trigonometric and geometrical application skills.
- Graphical interpretation of numerical data.
- Preparation for competitive examinations and aptitude tests.
- Real-life application of mathematics in business, finance, and everyday situations.

Contents

Unit I: Percentage, Average, Ratio and Proportion, Partnership, Simple Interest and Compound Interest, Discount, Profit and loss, Stock, Share, Debentures, Time and Work, Work and Wages, Pipes and Cisterns, Clock and Calendar, Time and Distance, Boats and Streams, Clock and Calendar, Problems on Ages, Area and Perimeter, Volume and Surface Area.

Chapter 5 to Chapter 23 of [1].

Lecture-20, Mark-20.

Unit II: Trigonometric Ratios, Trigonometric Identities, Values of Trigonometric Ratios, Problems in Height and Distance; Cartesian Coordinates, Distance between two points, Section formula, Area of Triangle and Quadrilateral, Polar Coordinates, Equation of Straight Lines, Slope of a Straight Line, Angle Between Straight Lines, Length of Perpendicular.

Chapter II and Chapter III of [2].

Chapter II and Chapter IV of [3].

Lecture-15, Mark-15.

Unit III: Frequency Distribution, Graphical Representation of Frequency Distribution (Histogram and Frequency Polygon), Arithmetic mean, Median, Mode, Geometric mean, Harmonic mean, Partition Values; Dispersion, Range, Quartile Deviation, Mean Deviation, Standard Deviation, Coefficient of Dispersion, Moments, Skewness, Kurtosis.

Chapter 2 and Chapter 3 of [4].

Lecture-10, Mark-10.

Textbooks

1. D. Khattar, *The Pearson Guide to Quantitative Aptitude for Competitive Examinations*, Pearson Publication, 2013.
2. S. L. Loney, *Plane Trigonometry, Part I*, Arihant Publications, New Delhi, 2016.
3. S. L. Loney, *The Elements of Coordinate Geometry*, Arihant Publications, New Delhi, 2015.
4. S. C. Gupta, V. K. Kapoor, *Fundamentals of Mathematical Statistics*, S. Chand and Sons, 11th Edition, 2002.

Reference books

5. R. S. Aggarwal, *Quantitative Aptitude*, S. Chand Publishing, New Delhi, 2022.
6. M. R. Spiegel, *Schaum's Outline of Statistics*, McGraw-Hill Education, 4th Edition, 2009.
7. H. S. Hall and S. R. Knight, *Higher Algebra*, Arihant Publications, New Delhi, 2017.
8. A. S. Posamentier and C. Spreitzer, *The Mathematics of Everyday Life*, Prometheus Books, Amherst, New York, 2018.

Philosophy

Bhattadev University, Bajali
FYUGP Syllabus in Philosophy
Multidisciplinary Course (MDC)
Semester-I

Course code: PHI1101003MD

Course Title: Ethics

Total Marks: 50

Credits: 3 -MDC1

Total lectures: 45(L+T)

Course Objectives:

1. To bring to light the basic concepts of ethics.
2. To create ethical awareness among students.
3. To analyze the concept of moral judgment, crime and punishment

Course outcomes:

1. Students will be aware of ethical issues and basic ethical approaches.
2. They will learn some fundamental moral concepts.
3. Students will be able to form moral reasoning and act with ethical deliberations.

Unit-I

(15 Classes)

Meaning, Nature and Scope of Ethics

Branches of Ethics (Normative Ethics,
Meta-Ethics)

Utility of Ethics

Unit-II

(15 Classes)

Fundamental Moral concepts-Is-Ought, Right and Duty

Good and Bad, Highest Good

Purusartha, Moral Judgment

Unit-III

(15 Classes)

Crime and Punishment

Theories of Punishment

Recommended Books:

1. Lillie, William, An Introduction to Ethics, Allied Publishers, New Delhi, 2003
2. Mackenzie, John. S. A Manual of Ethics, Cosimo Classics, New York, 2005
3. Sinha, Jadunath, A manual of Ethics, Sinha Publishing House, 1962
4. Aristotle, Nichomachian Ethics, Harvard University Press, 1962
5. Bhattacharjee, Jyotsna, Nitibijnan, Nilgiri Mansion, 2006
6. Roy, Hemanta, Kr., Nitibijnan, Chandra Prakash, Panbazar, Ghy-1, 2013

Physical Education and Sports

SEMESTER I

Multi-disciplinary course (MDC)

Subject: Introduction To Physical Education and Sports

Course code: PHE1101003MD

Credit: 3 (Theory-03, Practical-00)

Credit Hours: Theory 45

Course Description:

This Multi-Disciplinary Course introduces students from various academic streams to the foundational concepts of Physical Education and Sports. The course aims to promote holistic development in alignment with NEP-2020, emphasizing physical literacy, fitness, wellness, sports culture, and lifelong physical activity. It integrates theoretical understanding with practical exposure to enhance students' physical, mental, and social well-being.

Course Objectives:

The course aims to:

1. Develop a foundational understanding of the meaning, scope, philosophy, and objectives of Physical Education and Sports.
2. Provide knowledge of the historical development and foundational evolution of Physical Education in India and globally.
3. Familiarize students with the Olympic Movement and the structure of sports governance at national and international levels.
4. Create awareness about diverse career opportunities and professional pathways in Physical Education, Sports, fitness, and allied fields.
5. Promote appreciation of Physical Education as an essential component of holistic education and lifelong wellness in alignment with NEP-2020 principles.

Course Outcomes:

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

1. Define and explain the meaning, scope, philosophy, goals, and objectives of Physical Education and Sports.
2. Explain the structure, ideals, and significance of the Olympic Movement, including the role of the International Olympic Committee and sports governance in India.
3. Identify various national and international sports federations and understand the administrative framework of sports in India.
4. Analyze career opportunities and professional pathways in teaching, coaching, fitness, health promotion, and sports management sectors.
5. Demonstrate informed awareness of Physical Education as a multidisciplinary and career-oriented field contributing to individual and societal development.

Syllabus:

Unit I: Foundation of Physical Education (15 Lectures)

1. Meaning, Definition, and Scope of Physical Education.
2. Aims, Objectives and Philosophy of Physical Education.
3. Historical development of Physical Education: Primitive Society, Ancient Civilizations (Greece, Rome, China, and India), and Modern India.
4. Role of Physical Education in Modern Society.

Unit II: Olympic Movement and Sports Structure (15 Lectures)

1. Olympic Movement: Ancient and Modern Olympic Games
2. Motto, Flag, Symbol, and Ideals.

3. Development of sports in India: Pre-Independence and Post-Independence.
4. Sports Governance: International Olympic Committee (IOC), Indian Olympic Association (IOA), Sports Authority of India (SAI)

Unit III: Careers and Professional Considerations (15 Lectures)

1. Career and Professional Development: Career planning, professional ethics, responsibilities, and essential competencies.
2. Teaching and Coaching Careers: Physical education teaching, sports coaching, fitness training, and health and wellness professions.
3. Career in Sports Industries: Sports management and administration, sports journalism, sports officiating, sports entrepreneurship, and emerging career opportunities.

References:

1. Ajmer Singh, Jagdish Bains, et al. History, Principles and Foundation of Physical Education.
2. A.K. Uppal. Physical Education and Health Education.
3. D.C. Bhattacharya. History and Principles of Physical Education.
4. V.K. Sharma. Health and Physical Education.
5. Ramesh Chandra. Physical Education and Sports.
6. Ministry of Youth Affairs & Sports. National Sports Development Code of India (latest edition).
7. International Olympic Committee. Olympic Charter (latest edition)

Physics

PHY-1101003MD: PHYSICS FOR EVERYONE

NCrF Level:	4.5	
Programme:	Four-Year Undergraduate Programme	Semester: First
Course Category:	Multi-disciplinary Course (MDC)	
Credits (L – T – P):	3- 0- 0	
Credit Hours	Theory: 45 Hours	
Prerequisite:	Class IX & X (NCrF Level 2.0 & 2.5) Science and Mathematics	

1.0 COURSE LEARNING OBJECTIVES

This multidisciplinary course introduces students from non-science backgrounds to fundamental physical phenomena encountered in everyday life, explaining basic concepts, principles and applications of Physics in a simple, intuitive and accessible manner to promote scientific awareness and logical understanding. The Learning Objectives of the course are:

- To introduce students to the nature, scope and societal relevance of Physics, emphasizing its historical, philosophical and practical evolution.
- To develop an understanding of the growth of Physics across major historical periods and its diversification into classical and modern branches.
- To enable students to correctly use measurement systems, units and numerical rules and to follow the scientific method through observation, experimentation and data analysis.
- To build foundational problem-solving skills in mechanics and to relate concepts of waves, thermal physics, magnetism and electromagnetism to everyday physical phenomena.

2.0 COURSE LEARNING OUTCOME

After completing this course, students will be able to,

CLO	Outcomes
CLO1:	Explain physics' nature, scope and importance, tracing its development from preliterate origins through ancient civilizations, revolutions and modern scientific branches.
CLO2:	Learn the fundamentals of scientific observation, experimentation, data analysis, distinguish theory and experiment as well as to analyse the motion of objects and their laws.
CLO3:	Learn the fundamentals of scientific observation, experimentation, distinguish between theoretical and experimental approaches and analyse object motion and its governing laws.
CLO4:	Learn the fundamentals of oscillatory motion and wave behaviour; analyse key optical principles, theories and instruments; and explain heat, temperature, thermal processes.
CLO5:	Get the knowledge of magnetic properties, Earth's field, induction and AC generation and understand electromagnetic waves, spectrum regions and their practical applications.
CLO6:	Demonstrate conceptual understanding of waves, optics, thermal physics, magnetism and electromagnetic waves, relating these phenomena to everyday life.

3.0 SKILLS TO BE LEARNED

- Explain physics concepts, relevance and historical evolution from ancient to modern.
- Apply measurement systems, SI units, significant figures and numerical accuracy.
- Use scientific methods: observation, experimentation, data analysis and laws.
- Apply mechanics and physical phenomena concepts to everyday situations.

4.0 DETAILED CONTENTS OF THE COURSE: THEORY

Credit: 3

Classroom Teaching: 45 Hours

SECTION 1:

Physics and its Historical development: What are physics and its importance in our life, The historical, philosophical and practical evolution of Physics from its roots in ancient natural philosophy. Preliterate origins, Ancient Egypt and Mesopotamia, modern science after 15th centuries. A golden age of physics. Modern Physics, various branches of physics [5 hours]

Measurement system: Measurement and its importance in physics, History of unit and measurement systems, international system of units, significant figures and rounding off in measurement, rules for arithmetic operation with significant digits. [5 hours]

Observation and experimentation in Physics: Steps of scientific study of natural behaviour of objects, observation, design of experiment, experimental data collection, analysis of experimental data: drawing curve, formation of equation, development of phenomena, Importance of curve and equation in physics. Theoretical physics and experimental physics, importance of experimentation. [5 hours]

SECTION 2:

Motion of object: Scalar and vector quantities with examples, displacement, speed and velocity, acceleration, momentum, Newton's laws of motion and its applications. [5 hours]

Work, Energy and Power: Work done, Kinetic energy and potential energy, power [2 hours]

Rotational Motion: Rigid body under rotation, rotational axis, centre of mass, angular velocity, angular acceleration, Torque, center of gravity, idea about moment of inertia and its applications. [3 hours]

Gravitation: Kepler's laws, Universal Law of Gravitation: Gravitational constant, acceleration due to gravity, variation of acceleration due to gravity on earth (above and below earth surface), Escape speed, Artificial Satellites- geosynchronous satellites. [5 hours]

SECTION 3:

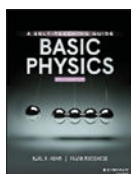
Waves and Optics: Oscillatory motion, waves – frequency and wavelength, transverse and longitudinal wave, sound wave, historical development of light – corpuscular theory to electromagnetic wave, curved mirrors and lens – telescope and microscope, interference, diffraction and polarization of light, [3 hours]

Thermal Physics: Heat and temperature – measurement techniques, heat transfer: conduction, convection and radiation, Newton's laws of cooling, fundamental ideas about heat engines. [5 hours]

Magnetism: Properties of magnets, lines of forces and flux, magnetic needle, earth's magnetic field, artificial magnet, electromagnetic induction: Lenz's law, AC generator [4 hours]

Electromagnetic waves: Nature of electromagnetic waves, electromagnetic spectrum, radio waves, microwave, infra-red waves, visible rays, UV-rays, X-rays and gamma rays and their applications. [3 hours]

5.0 TEXT BOOKS



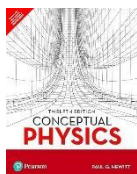
Name: Basic Physics: A Self-Teaching Guide

Author: Karl F. Kuhn and Frank Noschese

Edition: 3rd Ed.

Publisher: Jossey-Bass

ISBN: 978-1119629900



Name: Conceptual Physics

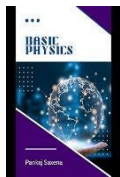
Author: Paul G. Hewitt

Edition: 12th Ed.

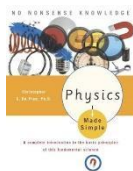
Publisher: Pearson Education

ISBN: 978-9352861774

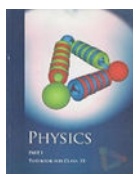
6.0 REFERENCE BOOKS AND MATERIALS



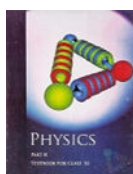
Name: Basic Physics
Author: Pankaj Saxena
Edition: 2023
Publisher: Notion Press
ISBN: 979-8891332300



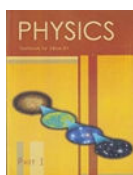
Name: Physics Made Simple: A Complete Introduction to the Basic Principles of This Fundamental Science
Author: Christopher G. De Pree
Edition: 2nd Ed.
Publisher: Crown
ISBN: 978-0767917018



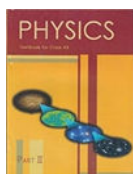
Name: Physics Textbook P For Class - 11
Author: NCERT
Edition: 2023
Publisher: National Council of Education Research and Training
ISBN: 978-8174505088



Name: Physics Textbook Part - 1 For Class - 11
Author: NCERT
Edition: 2023
Publisher: National Council of Education Research and Training
ISBN: 978-8174505668



Name: Physics Textbook Part - 1 For Class - 12
Author: NCERT
Edition: 2023
Publisher: National Council of Education Research and Training
ISBN: 978-8174506313



Name: Physics Textbook Part - 2 For Class - 12
Author: NCERT
Edition: 2023
Publisher: National Council of Education Research and Training
ISBN: 978-8174506719

Political Science

POL1101003MD : BASICS OF POLITICAL THEORY

NCrF Level:	4.5	Semester: One
Programme:	Four Year Undergraduate Programme	
Course Category:	Multi-Disciplinary Course (Departmental Elective Course)	
Credit (L:T:P):	2:1:0	
Credit Hours:	Lecture : 30 Hours, Tutorial: 15 Hours	

Course Objectives: The course aims:

1. To introduce the foundational concepts of politics, political science, and the distinct traditions of political theory (Liberal and Marxist).
2. To familiarize students with the core normative concepts of governance and society, specifically Rights, State, Citizenship, and Democracy.
3. To critically engage students with contemporary ethical, social, and legal issues like Affirmative Action, Capital Punishment, and the Rights of the Girl Child.
4. To bridge the gap between theoretical political frameworks and practical, real-world application in day-to-day life.

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

- CO1 (Understand & Differentiate): Define the core parameters of Politics, Political Theory, and Political Science, and distinguish between the Liberal and Marxist traditions of political thought.
- CO2 (Analyze & Critique): Analyze the structural evolution of the State, the modern definition of Citizenship, and the foundational pillars of Democracy.
- CO3 (Evaluate): Critically evaluate complex social debates surrounding Affirmative Action, Capital Punishment, and gender-specific rights (Rights of the Girl Child).
- CO4 (Apply): Demonstrate the ability to apply abstract political concepts and theoretical frameworks to interpret, critique, and solve real-life civic and political situations.

Unit I: Politics, Political Theory and Political Science (15 hours)

- What is Politics; Understanding Political Theory and its relevance
- Political Science as a discipline and its relevance
- Traditions of Political Theory: Liberal and Marxist

Reading List:

Farrelly, C. (2003). An Introduction to Contemporary Political Theory. Sage Publications.

Gaubha, O. P. (2019). An Introduction to Political Theory. National Paperbacks.

Political Theory (Class XI). National Council of Educational Research and Training (NCERT).

Ramaswamy, S. (2010). Political Theory: Ideas and Concepts. PHI Learning Pvt. Ltd.

Unit II: Key Concepts (15 hours)

- Rights
- State and Citizenship
- Democracy

Reading List:

Farrelly, C. (2003). An Introduction to Contemporary Political Theory. Sage Publications.

Gauba, O. P. (2019). An Introduction to Political Theory. National Paperbacks.

Political Theory (Class XI). National Council of Educational Research and Training (NCERT).

Ramaswamy, S. (2010). Political Theory: Ideas and Concepts. PHI Learning Pvt. Ltd.

Unit III: Important Issues (15 hours)

- Affirmative Action
- Capital Punishment
- Rights of the girl child

Reading List:

Farrelly, C. (2003). An Introduction to Contemporary Political Theory. Sage Publications.

Gauba, O. P. (2019). An Introduction to Political Theory. National Paperbacks.

Political Theory (Class XI). National Council of Educational Research and Training (NCERT).

Ramaswamy, S. (2010). Political Theory: Ideas and Concepts. PHI Learning Pvt. Ltd.

Sanskrit

SKT – 1101003MD : Fundamental Concepts of Sanskrit

NCrF Level : 4.5

Programme :Four –Year Undergraduate Programme

Difficulty Level: 100

Course Category : Multidisciplinry Course

Credits (L-T-P-C): 3-0-0-3

Evaluation Method: End Semester 50%

Classes 45

(A) Prescribed Courses:

Marks

Section I	Introduction to Sanskrit Language and Devanagari Script.	10
Section II	Mahesvarasutra and Uccharanasthana of Sanskrit Sounds.	15
Section III	Introduction to Vedic Literature.	12
Section IV	Introduction to Classical Sanskrit Literature	13

(B) Course Objectives:

Students will be able to gather knowledge of the history and background of Sanskrit Language along with the development of Devanagari script.It will make the Students enable to have the introductory knowledge of the Vedic and Classical Sanskrit Literature. It will open the vast treasure of Indian heritage before the students .

(C) Course Outcomes :

After pursuing this course the students will be able

- to grasp the linguistic significance of Sanskrit and the stages of development of Devanagari script.
- to have introductory knowledge of the Vedic Literature.
- to appreciate the vast treasure of Classical Sanskrit Literature.

(D) Section Wise Division:

Section I : Introduction to Sanskrit language and Devanagari Script

(Lectures 12)

Introduction, Linguistic name of Sanskrit, Concept of IE, Sanskrit as a member of IE family of language, Origin and development of Devanagari Script.

Section II : Mahesvarasutra and Uccharanasthana of Sanskrit Sounds.

(Lectures 12)

Introduction, concept of Mahesvarasutra and Uccharanasthana of the sounds of Sanskrit as stated in the Paninian school of Grammar.

Section III : Introduction to Vedic Literature

(Lectures 11)

Concept of Samhita, Brahmana, Aranyaka, Upanisadas and Vedangas, Four parts of the four Vedas Viz., Rigveda, Yajurveda, Samaveda and Atharvaveda, Six divisions of the Vedangas.

Section IV : Introduction to Classical Sanskrit Literature.

(Lectures 10)

Introduction to the Classical Sanskrit literature, Ramayana, Mahabharata, Puranas, Works of Bhasa, Brief description of the texts prescribed in the courses and their significant features.

Recommend Books /Readings:

1. Keith, A. B.; : History of Sanskrit Literature, Also Hindi Translation, MLBD, Delhi
2. Shastri, Gaurinath ; A Concise History of Sanskrit Literature, MLBD, Delhi.
3. Winternitz, Maurice ; History of Indian Literature (Vols I - III) , MLBD, Delhi.
4. Bose, Dr. Jogiraj ; Vedar Parichay, Publication Board, Assam, Guwahati.
5. Sarmah, Dr. Thaneswar ; Sanskrit Sahityar Itivritta, Chandra Prakash, Guwahati
6. Goswami, Harmohan; Sanskrit Sahityar Buranji, Book Land, Guwahati-1, 1992.

7. Agrawal, Prof. Hansaraj, Sanskritasahityetihasa, Chaukhamba Surbharati Prakashan, Varanasi, 1986.
8. Baladev Upadhyaya, Sanskrit Sahitya ka Itihas, Sharda Niketan, Varanasi.
9. Satyamurti K, Text Book of Indian Epigraphy, Lower Price in Publication, Delhi 1992
10. Dr Thaneswar Sarmah, Sanskrit Sahityar Itivritta, Chandra Prakash, Guwahati – I
11. Vidyasagar, Isvarchandra, Samagra Vyakarana Kaumudi, Deva Sahitya Kutir Privat Limited, Kolkata, 2014

Sociology

SOC1101003MD Indian Society: Images and Realities

NCrF Level: 4.5 (Course Level: 100)

Course Category: MDC

Marks: 50

Credits: 3 (Lecture, Tutorial)

Credit Hours: 45 Hrs

Course Objectives: The objective of the course is to provide an interdisciplinary introduction to Indian society.

Course Outcomes: After completion of the course, the learner will be able to understand the sociological explanation about Indian society and India as a nation and as a civilization; Understand the major social institution of Indian society and the processes of functioning of these institutions. The students will be able to comprehend the practical applicability of various concepts of the discipline.

Unit1: Sociological understanding of Ideas of India (15 Periods)

1.1: Civilization

1.2: Colony

1.3: Nation

1.4: Society

Unit 2: Institutions and Processes (15 Periods)

2.1: Village, Town & Region

2.2: Caste: Meaning & features, Caste and Class

2.3: Religion & Ethnicity

Unit 3: Family and Gender (15 Periods)

3.1: Meaning and types of Family

3.2: Sex and Gender

3.3: Feminism

Suggested Readings

- Embree, Ainslie Thomas. *Imagining India*. Delhi: Oxford University Press, 1989. Chapter 1- Brahmanical Ideology and Regional Identities. Pp. 9 – 27

- Cohn, Bernard. India: Social Anthropology of a Civilization, Delhi: OUP. Chapters 1, 3, 5 & 8 (1-7, 24-31, 51-59, 79-97)
- Breman, Jan. The Village in Focus from the Village Asia Revisited, Delhi: OUP 1997. Pp. 15-64
- Cohn, Bernard, An Anthropologist Among Historians and Other Essays, Delhi: OUP, 1987, Chapters. 4 and 6. Pp.78-85 & 100 – 135
- Mines, Diane P. Caste in India. Ann Arbor, Mich.: Association for Asian Studies, 2009. Pp. 1-35
- Fuller, C. J. The Camphor Flame: Popular Hinduism and Society in India. Delhi: Viking, 1992. Chapter 1. Pp. 3 – 28.
- Ahmad, Imtiaz et.al (eds). Pluralism and Equality: Values in Indian Society and Politics, Sage: New Delhi, 2000. Chapter: Basic Conflict of 'we' and 'they' Between religious traditions, between Hindus, Muslims and Christians.
- Dube, Leela. On the Construction of Gender: Hindu Girls in Patrilineal India', Economic and Political Weekly, Vol. 23, No. 18 (Apr. 30, 1988), pp. WS11 WS19
- Gray, John N. & David J. Mearns. Society from the Inside Out: Anthropological Perspectives on the South Asian Household. New Delhi: Sage, 1989. Chapter 3. (Sylvia Vatuk) Household Form and Formation: Variability and Social Change among South Indian Muslims. Pp. 107-137
- Omvedt, Gail. Understanding Caste. New Delhi: Orient Black Swan, 2011. Chapters. 5, 9, 11 and Conclusion. Pp. 30-38, 67-73, 83-90, 97-105
- Sangari, Kumkum and Sudesh Vaid. Recasting Women: Essays in Indian Colonial History. New Brunswick: Rutgers University Press. Introduction, pp. 1-25

SEMESTER ONE

Statistics

STA1101003MD: Descriptive Statistics

Title of the course: Descriptive Statistics

Course Code: STA1101003MD

Course Category: Multidisciplinary Courses

Level: 100, NCrF Level: 4.5 Credits: 3(L) -0(T)-0(P)-3(C)

Distribution of Marks: Internal Assessment: 0, Practical: 0, End Semester Examination: 50

Course Objective: The objective of the paper is to describe the basic features of the data in a study and also to provide simple summaries about the sample and the measures.

Course Learning Outcomes:

- I. Knowledge of Statistics, its scope and importance in various fields.
- II. Ability to understand concepts of sample vs. population and difference between different types of data.
- III. Knowledge of methods for summarizing data sets, including common graphical tools (such as histograms, Pie chart, Ogive etc.). Interpret histograms and Ogive.
- IV. Ability to describe data with measures of central tendency and measures of dispersion. Ability to understand measures of skewness and kurtosis and their utility and significance.
- V. Ability to find the correlation between two variables and form regression lines.

Theory Part

Unit I: Introduction

(Lectures: 11)

Origin and Development of Statistics, Definition Scope and importance of Statistics, Limitations, Statistical populations and sample, Census and Sampling. Types of frequency distribution, Construction of Continuous frequency distribution, Graphical representation of frequency distribution.

Unit II: Statistical data

(Lectures: 11)

Introduction, Primary and Secondary data, Distinction between Primary and Secondary data, Methods of Primary and Secondary data collection, Drafting of questionnaire, Qualitative and Quantitative data, Time series and chronological data, Cross Sectional data.

Unit III: Measure of Central Tendency and Dispersion

(Lectures: 12)

Introduction, Characteristics of an Ideal Average, Arithmetic Mean, Median, Mode, Harmonic Mean and Geometric Mean, Relationship among Mean, Median, Mode, Concept of Range, Quartile Deviation, Mean Deviation and Standard Deviation. Skewness and Kurtosis (Definition only)

Unit IV: Correlation and Regression

(Lectures: 11)

Bivariate Data: Definition, Scatter Diagram, Different types of Correlation, Karl Pearson's Coefficient of Correlation –Assumptions and Properties, Simple linear regression, Properties of Regression Co-efficient.

Reference Books

1. Bhowal M.K., Barua P. (2019): A first Course in Statistics, 3rd Edition, Kalyani Publishers, New Delhi.
2. Gupta S.C., Kapoor V.K. (2014): Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.

3. Choudhury L., ParamvikParisankhya-Bigyan, Bookland, Guwahati

Zoology

ZOO1101003MD: FUNDAMENTALS OF ANIMAL DIVERSITY

1stSemester

NCrF Level: 4.5

Programme: Four-Year Undergraduate Programme

Difficulty Level: 100 levels

Course category: Multidisciplinary Course (MD)

Credits (L-T-P-C) 3-0-0-3

Evaluation Method: End Semester 50%

Total lectures: 45L

Course Objectives

- To introduce students to the diversity and classification of animals.
- To provide knowledge about the basic characteristics and body organization of major animal groups.
- To understand the general features of non-chordates and chordates with suitable examples.
- To develop awareness about the ecological and economic importance of animals.
- To introduce students to the role of animals in maintaining ecosystem structure and ecological balance, emphasizing their importance in food chains, food webs, and biodiversity conservation.
- To develop awareness of the ecological services provided by animals, such as soil formation, seed dispersal, and wildlife conservation, and their significance for environmental sustainability.

Course Learning Outcomes

After completion of the course, students will be able to:

- Describe the diversity and general characteristics of major animal groups.
- Identify the distinguishing features of non-chordates and chordates.
- Understand the basic structural and functional organization of animals.
- Explain the importance of animals in environment and human welfare.
- Explain the ecological roles of animals in ecosystems, including their contributions to ecological balance, food chains, food webs, soil fertility, and seed dispersal.
- Recognize the importance of wildlife and biodiversity conservation and appreciate the need for protecting ecosystem services for sustainable development.

THEORY

SECTION–1: Basics of Classification and Identification

6L(6 marks)

1. Introduction to Animal Kingdom
2. Animal diversity and its significance
3. Animal products in daily life

SECTION–2: Introduction of Non-Chordate Animals

13L(13 marks)

1. Basic characters and examples of: (Kingdom Protista, Phylum Porifera, Cnidaria, Platyhelminthes, Nematoda, Annelida, Arthropoda, Mollusca, Echinodermata)
2. Pollinators and beneficial insects.

SECTION–3: Basic Concepts of Chordates

13L(13 marks)

1. General features of Chordates and Protochordates
2. Basic features of : Pisces, Amphibia, Reptilia, Aves, Mammalia
3. Difference between venomous and non- venomous snakes.
4. Importance of vertebrate in human welfare.

SECTION–4: Animals in Ecosystem.

13L(13 marks)

1. Ecosystem and Ecological balance
2. Food chain and food web
2. Wildlife and its importance.
3. Invertebrates in soil formation and fertility.
4. Conservation of indigenous fish resources.
4. Ecological functions of birds in seed dispersals and pest control.

SUGGESTED READINGS

1. Kotpal, R. L. (2019). *Modern Textbook of Invertebrate Zoology*. Rastogi Publications, Meerut.
2. Ruppert, E. E. and Barnes, R. D. (2006). *Invertebrate Zoology*, 8th Edition, Holt Saunders International Edition
3. Barrington, E. J. W. (1979). *Invertebrate Structure and Functions*, 2nd Edition, E.L.B.S. and Nelson
4. Young, J. Z. (2004). *The Life of Vertebrates*, 3rd Edition, Oxford University Press
5. Singh, J. S., Singh, S. P., & Gupta, S. R. (2014). *Ecology, environmental science and conservation*. S. Chand Publishing.
6. Singh, R. K. P. (2003). *Economics of Aquaculture*. Danika Publishing Company.
7. SWAYAM. Applied and Economic Zoology. Available at:
https://swayam.gov.in/nd2_cec20_ge23/preview