

## SEMESTER I

### Multi-Disciplinary Course

SL. NO.	CODE	NAME OF THE COURSE (MDC) SEM I
1.	MDC 111	CULTURE AND SOCIETY
2.	MDC 112	FUNDAMENTALS OF COMPUTER SYSTEMS
3.	MDC 115	INTRODUCTORY LIFE SCIENCES
4.	MDC 117	INTRODUCTION TO PSYCHOLOGY
5.	MDC 118	MATHEMATICS IN DAILY LIFE
6.	MDC 119	PHILOSOPHY OF CULTURE

**MDC-111: CULTURE AND SOCIETY**  
**(Contact Hours-45, Credits-3)**

**Course Objectives (COs):**

The course intends to familiarize the students with the conceptual and theoretical aspects of society and culture.

**Learning Outcomes (LOs):** The students will be able to develop insights and examine various concepts related to culture and society. The students are expected to learn components of culture and cultural diversity of India and North-East region of India.

**Unit- I: Conceptual and Theoretical Aspects**

Culture, Cultural Lag, Society  
Components of Culture (Edward B. Tylor)  
Functionalist theory of culture (Broislaw Malinowski)  
Symbolic Interaction (George Herbert Mead)

**Unit- II: Culture and its Attributes**

Language  
Food  
Religion  
Technology

**Unit- III: Socio-Cultural Diversity - India and North-East India**

Linguistic, Religious and Ethnic Diversity in India  
Unity in Diversity: Contemporary Understanding  
Socio-cultural Diversity of North-East India  
Indigenous Knowledge Systems of the Tribes of North-East India

**Suggested readings:**

- Back, les and Andy Bennett et al.2012. *Cultural Sociology- An Introduction*. Wiley Publishers Oxford, UK.
- Beattie, John. 1976. *Other Cultures*. London: OUP.
- Majumdar,D.N. and T.N Madan.2022.*An Introduction to Social Anthropology*.NewDelhi: Mayur Books.
- Marak, Queenbala. 2020. *The cultural Heritage of Meghalaya...* New Delhi: IGRMS and Manohar.
- Marak, Queenbala. 2021. *Food Politics: Studying Food, Identity and Difference among the Garos*. New Castle. CSP.
- Miller, B.2011.CulturalAnthropology. PHI Learning Pvt. Ltd.
- Ogburn, William F.1922. *Social Change with Respect to Nature and Original change*. Chicago: Chicago Press.
- Ranjan, Geetika. 2016. *Approaches to the study of Indian Culture and Society*. New Delhi: Pragun Publications.
- Shangpliang,Rekha M.2010 .*Forest in the Life of the Khasi* .New Delhi: Concept Publications.
- Singer,Milton.1955. *The Cultural Pattern of Indian Civilization*. The Far Eastern Quarterly.15(1).

- Subba, T.B. 2016. *North-East India: A Handbook of Anthropology*. New Delhi: OrientBlackswan.
- Tylor, E. B. 2012. *Primitive Culture*. Cambridge University Press. London.
- Vidyarthi, L. P and Rai B.K.1985.*Tribal Culture in India*. New Delhi: Concept Publishing Co.
- Williams, R .1990.*Cultural Anthropology*. New Jersey: Prentice Hall.

## MDC- 112: FUNDAMENTALS OF COMPUTER SYSTEMS

(Contact Hours-45, Credits-3)

### Course Objectives (COs):

To understand the fundamental organization of a digital computer. To understand data representation along with theoretical basic knowledge of operating systems.

*Learning Outcomes (LOs):* Students will be able to understand the basic information related to hardware and software. To gain basic knowledge of number system, Boolean logic along with types of operating system and network.

### UNIT -I: Computer Fundamentals

15 Hours

Generations of Computer (I-V) , Block Diagram of a Computer Functions of the Different Units ( Input unit, Output unit, CPU (ALU+CU)) , Input & Output Devices , Memories, Memory hierarchy, Registers and Types, Cache Memory , Primary Memory ( Ram, How data is stored in a RAM) DRAM and SRAM, ROM ROM BIOS/ Firmware Types of ROM Secondary Memories , Solid State Drive , CD /DVD. Software, System Software and Application Software , Computer Languages: Machine language, Assembly language, High level language, Program Language Translators, Compiler, Assembler Interpreter.

### UNIT -II: Number Systems and Boolean Algebra

15 Hours

Bit, Byte, Nibble, Word, Binary Number, Binary Arithmetic (Addition, Subtraction, Multiplication, Division), Hexadecimal number system, Octal number system, Conversion between number systems, Binary codes (BCD, ASCII, EBCDIC). Gates AND, OR, NOT, NAND, NOR, XOR and XNOR operations, Boolean variables, postulates and theorems of Boolean Algebra, Boolean functions, Simplification of Boolean expressions by algebraic method, Dual and Complement of a Boolean expression.

### UNIT -III: Basics of Operating System & Network Hours

15

Operating System: Overview, Evolution of Operating System, functions and importance of operating system, types of operating system (GUI and Non GUI), Open source and Non Open Operating System, their advantage and disadvantage , Batch Operating System , Real-Time , Operating System , Distributed Operating System , Embedded Operating System , Network Operating System , Mobile Operating System. Basics of Networking , LAN ,MAN ,Wan , Arpanet.

### Suggested Readings:

### Text Books:

1. Rajaraman, Neeharika Adabala, Fundamentals of Computers 6<sup>th</sup> Edition , Prentice Hall India Learning Private Limited, 2014.
2. Morris. M. Mano, *Digital Logic and Computer design*, 3<sup>rd</sup> Edition, Prentice Hall India 2002.

**Reference Books:**

1. Malvino& Leach, Digital Computer and Applications, 4<sup>th</sup> Edition, Tata Mc-Graw Hill Company, 2015.
2. Reema Thareja, Fundamentals Of Computers 2<sup>nd</sup> Edition, Oxford University Press, 2026.

**MDC-115: INTRODUCTORY LIFE SCIENCES**  
**(Contact Hours-45, Credits-3)**

**Course Objectives (COs)**

- The aim of Introductory Life Sciences course will be to impart knowledge to students related to topics of general aspects of Life Sciences

**Learning Outcomes**

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

- Know about the concept of general diversity and classification of life forms.
- Know about the concept of Origin of Life.
- Understand about the structural and functional features of prokaryotic and eukaryotic cells.
- Understand the basic concept of genes and their role in inheritance.
- Understand the process of evolution and importance of basic ecological principles.
- Understand the concept of Biodiversity, and appreciate the importance of Wildlife and their conservation.

**Unit-I:** General features of life form and their classification (up to kingdom); Origin of life.

**Unit II:** Structure and function of prokaryotic and eukaryotic cells. Introduction to biomolecules (nucleic acids, proteins, carbohydrates and lipids). Basic concept of genes and their role in inheritance.

**Unit III:** Bio-resources and their economic importance (microbes, plants, and animals). Concepts of evolution, ecology, biodiversity, and wildlife management.

**Suggested Readings:**

1. Bruce, A., Dennis, B., Karen, H., Alexander, J., Julian, L., Martin, R., Keith, R. and Peter W. (2009). Essential Cell Biology. (3rd ed.). Garland Publishing. London.
2. De Robertis, E. D. P. and De Robertis, L. M. F. (1987). Cell and Molecular Biology, (8th ed.). Lea and Febiger.
3. Gardener, E. J., Simmons, M. J., and Snustad, D. P. (2005). Principles of Genetics. (8th ed.). John Wiley and Sons.
4. Hall, B.K. and Hallgrimsson, B. (2008), Strickberger's Evolution, (4th ed.). Jones and Bartlett Publishers.
5. Krishnamurthy, K.V. (2003). Textbook of Biodiversity. (1st ed.). Science Publisher, Chennai.
6. Mader, S.S. (2008). Concepts of Biology. (Indian ed.).CBS Publishers. New Delhi.
7. Sharma B.D. (1999). Indian Wildlife Resources, Ecology and Development. (1st ed.).Daya Publishing House, Delhi.
8. Sharma, P. D. (1990). Ecology and Environment, 7th Edition. Rastogi Publications. Meerut.
9. Singh S.K. (2005). Textbook of Wildlife Management (2nd ed.). International Book Distributing Company, Lucknow.

## **MDC- 117: INTRODUCTION TO PSYCHOLOGY**

**(Contact Hours-45, Credits-3)**

**Programme Objectives:** This programme will develop interest among the learners towards Psychology. It aims to help learners to understand behaviours and mental processes of people. It will also develop awareness of the empirical knowledge to improve the lives of people.

### **Learning Outcomes**

At the end of the Course students are able to:

1. identify basic concepts of psychology and apply psychological principles to everyday life
2. determine the relationship between the physical functioning of an organism and its behaviour
3. make use of a wide range of actions such as helping, sharing, comforting and cooperating with others

### **UNIT I            Concept of Psychology**

- Meaning, Nature and Scope of Psychology, Psychology as a Science
- Principles of Psychology
- Branches of Psychology
- Approaches in Psychology: Behaviourism, Cognitive, Psychodynamic and Biological

### **UNIT II            Physiological Basis of Psychology**

- Physiological Characteristics
- Nervous System and Endocrine System
- Hemispheric Division and its features
- Neurons: Definition, Structure and Types

### **UNIT III            Pro- Social Behaviour**

- Meaning and determinants of Pro-social Behaviour
- Types: Proactive, Reactive and Altruistic
- Influences on Pro-social Behaviour
- Benefits of Pro-social Behaviour

### **Assignments (Choose any one)**

1. Prepare a sketch on how to promote pro-social behaviour
2. Use a pro-social behaviour scale to measure the Pro-Social Behaviour of a student.
3. Engage yourself in any one prosocial activities: like Clubs(e.g. art, biking, robotics, scouts, chess etc); or day camps; or creative arts/music/theatre or volunteer opportunities through community organizations

## References -

- Ashok Kumar. E and Laurence Kharluni (2021) *Social Behaviour Scale (SBS-EKAKL)*. National Psychological Corporation (NPC), Agra
- Bierhoff, H. (2005). *Prosocial Behaviour*. United Kingdom: Taylor & Francis.
- Bron R.A. Allyn & Bacon (2002). *Essentials of Psychology*, Guwahati, Nivedita DK. Distributors.
- Chand T. (2002). *Educational Psychology*, Agra, Bhargava Book House,
- Crow, R.B. & Crow (1964). *Educational Psychology*, New Delhi, Eurasia Publishing House,
- Development and Maintenance of Prosocial Behavior: International Perspectives on Positive Morality. (2013). Germany: Springer US.
- Glassman, W. E., Hadad, M. (2004). *Approaches to Psychology*. United Kingdom: Open University Press.
- Mangal. S.K. (2011) *Essentials of Educational Psychology*, PHI Pvt. Ltd, New Delhi.
- Sahoo F.M.(2002) *Psychology in Indian Context*, Agra, Bhargava Book House.
- Schroeder, D. A., Piliavin, J. A., Dovidio, J. F., Penner, L. A. (2017). *The Social Psychology of Prosocial Behavior*. United Kingdom: Taylor & Francis.
- Sharmila P. (2004). *Textbook of Educational Psychology*, Kanishka Publication, New Delhi.

**MDC-118: MATHEMATICS IN DAILY LIFE**  
**(Contact Hours-45, Credits-3)**

**Learning Objectives:** To introduce the basic mathematical concepts that are used in different aspects of our daily life.

**Unit I : Arithmetical Ability** (15 hours)

Unit conversion (length, mass, time); Number System; Decimal Fractions; Square Roots and Cube Roots; Problems on Numbers; Problems on Ages; Use of concepts of HCF and LCM; Percentage; Ratio and Proportion; Time and Distance; Allegations or Mixture; Area, Volume, Surface Areas; Trigonometric ratios; Height and Distance in our everyday life.

**Unit II : Banking Ability** (15 hours)

Interest - Concept of Present value and Future value, Simple interest, Compound interest, Nominal and Effective rate of interest; Depreciation and discount; Annuity - Ordinary annuity, sinking fund, annuity due, present value and future value of annuity; Equated Monthly Installments (EMI) by Interest of Reducing Balance and Flat Interest methods - examples and problems.

**Unit III : Data Interpretation** (15 hours)

Probability; Classification of data - Frequency distribution, Tabulation; Graphical representation of data - Bar Graphs, Pie Charts, Line Graphs; Calendar and Clocks.

**Course Outcomes :** After this course students will be able to understand everyday banking transactions, identify patterns and relationships. Students will be able to perform basic calculations and measurement and also understand about ratios and proportions.

**Notes:** A candidate must obtain the minimum pass marks (as per NEHU Rule) to clear the course.

**Suggested Readings:**

1. Quantitative Aptitude, R.S. Aggarwal, S. Chand Publishing (2022).
2. Fundamentals of Business Mathematics, M.K. Bhowal, Asian Books (2009).
3. Fundamentals of Mathematical Statistics, S.C. Gupta, V.K. Kapoor, Sultan Chand and Sons (2020).
4. The Mathematics of Everyday Life, A.S. Posamentier, C. Spreitzer, Prometheus Books, Illustrated Edition (2018).

## **MDC-119: PHILOSOPHY OF CULTURE**

**(Contact Hours-45, Credits-3)**

**Course Objectives (COs):** Imparting basics of Human Culture, developing core concepts of cultural understanding of knowledge and society.

**Learning Outcomes (LOs):** To develop cultural sensibility and to make students responsive towards diversity and difference.

### **Unit-I: Concepts of Culture**

- (a) Meaning of Culture
- (b) Kinds of Culture ( Material, non-material,etc.)
- (c) Understanding roots of Culture

### **Unit- II: World View**

- (a) Belief Systems, Practices and Performances
- (b) Tribal Cultures: Case Studies from NE-India.
- (c) Holistic understanding of Cultural Identity

### **Unit-III: Cultures of Nationalism**

- (a) Indian Culture, Vedic and Buddhist
- (b) Decolonization of Knowledge and Culture
- (c) Cultural Nationalism

### **Suggested Readings:**

1. Aurobindo, Sri, *The Foundations of Indian Culture*, Vol 1., Sri Aurobindo Ashram Publications, Pondicherry, 1972.
2. Radhakrishnan, S. et.al., (Eds.), *The Cultural Heritage of India*, Vol 1 & 2, Ramakrishna Mission, Kolkata, 1970.
3. Panikkar, K.M., *The Essential Features of Indian Culture*, Chapters 1 & 2, Bharatiya Vidya Bhavan, Mumbai, 1974.
4. Pande, G. C., *Foundations of Indian Culture*, vol 1 & 2
5. Radhakrishnan, S, *The Hindu View of Life*, Macmillan, London, 1962.
6. Mohammada, Malika,, *The Foundations of the Composite Culture in India*, Aakar Books, 2007.
7. Smith, Philip, *Cultural Theory*, Blackwell Publishers, Oxford, 2001.
8. Uberoi, Jeet, *Science and Culture*, Oxford University Press, New Delhi, 1978.
9. Biswas, Prasenjit, *Ethnic Life-World(s) in North-East India*, SAGE, New Delhi, 2008.
10. Ndlovu-Gatsheni, Sabelo J (2020). "The Dynamics of Epistemological Decolonisation in the 21st Century: Towards Epistemic Freedom", *Strategic Review for Southern Africa*. 40 (1): 16–45.