CENTRE FOR DISTANCE AND ONLINE EDUCATION

MASTER OF LIBRARY AND INFORMATION SCIENCE

Knowledge Organization

MLIS-102

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Course Name: Knowledge Organization

Course Code: MLIS-102 **Credits: 4**

Course Objective:

To develop an understanding of the concepts of library classification, classification theories and their implication for the development of library classification systems.

Course Outcomes (COs):

S.No.	Course Outcomes (COs)
1.	Understand the general theory of classification and Universe of Knowledge.
2.	Understand the modes of formation of subjects and methods for revision of major Classification Schemes.
3.	Grasp an understanding of special classification schemes.
4.	Understand the contributions of significant people in the field of cataloguing.
5.	Know the Web based cataloguing systems.
6.	Understand subject cataloguing with the help of PRECIS, POPSI and Chain Indexing.

BLOCK I Classification Contributions and Universe of Knowledge

Unit -1 General theory of Classification: Contributions of Richardson, W.C. Berwick Sayers, H.E. Bliss,

Unit - 2 Universe of Knowledge: Mapping and Problems

Unit - 3 Contribution of S.R. Ranganathan and CRG

BLOCK II Formation of Subjects, Features of Classification Schemes & Notations

Unit - 4 Modes of formation of Subjects and Methods of Scholarship vis-à-vis revision of CC,

UDC and DDC

Unit - 5 Features of Special Classification Schemes

Unit - 6 Notation: Definition, Kinds and Function

BLOCK - III Contributions, Resource Description and Access and Online Cataloguing

Unit - 7 Contributions of Cutter, Lubetzky, Ranganathan in the field of Cataloguing.

Unit - 8 Resource Description and Access (RDA) : Concept and Structure.

Unit - 9 Online Cataloging: OPACs and Web OPAC with examples at national and

international level.

BLOCK – IV Subject Cataloguing & Subject Headings

Unit - 10 Subject Cataloguing: Definition and General Principles

Unit - 11 Choice and Rendering of Subject Headings: LCSH, POPSI, PRECIS

Unit - 12 Thesaurus: Need and Guiding Principles for Compilation

BLOCK -V Union Catalogue, Indexing & Abstracting

Unit - 13 Layout and rules for the Union Catalogues of Books, Periodicals

Unit - 14 Indexing and Abstracting Journals

Unit – 15 National Bibliographies.

Unit - 16 Compilation of Local, National and International Union Catalogues, Application of IT

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BLOCK – IV Subject Cataloguing & Subject Headings

Unit 10:

Unit 11:

Unit 12:

BLOCK –V Union Catalogue, Indexing & Abstracting

Unit 16:

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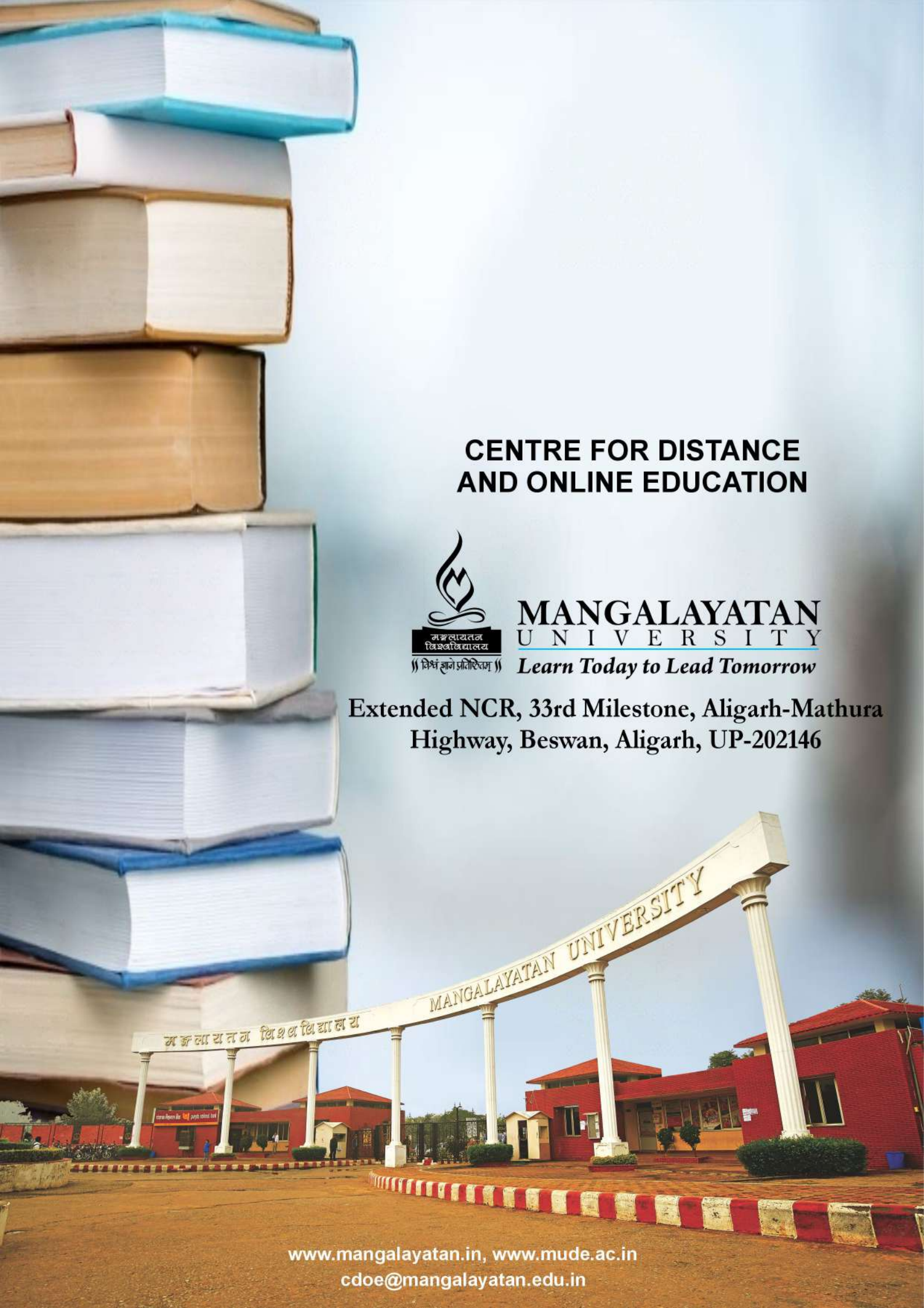

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CENTRE FOR DISTANCE AND ONLINE EDUCATION

MASTER OF LIBRARY AND INFORMATION SCIENCE

Research Methodology & Statistical Techniques

MLIS-103

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Course Name: Research Methodology & Statistical Techniques

Course Code: MLIS-103 **Credits: 4**

Course Objective:

To understand the concept of Research Design, Tools and Techniques for carrying out the research in various fields of Library and Information Science.

Course Outcomes (COs):

S. No.	Course Outcomes (COs)
1.	Understand the concept of research design, tools and techniques
2.	Understand the designing of a Research Proposal
3.	Develop a thorough understanding of research data analysis, interpretation and presentation
4.	Use different statistical techniques and statistical packages
5.	Develop skills for writing and evaluating a research report
6.	Develop skills for Research Ethics & Plagiarism

BLOCK-I Introduction of Research

Unit - 1 Research: Meaning, Need, Importance and kinds

Unit - 2 Identification, Formulation of Problems

Unit - 3 Hypothesis: Definition, Types, Need and Purpose

BLOCK- II Research Design, Methods and Techniques

Unit - 4 Research Design: Concept and Types

Unit - 5 Scientific Method of Research; Ranganathan's Spiral of Scientific Method

Unit - 6 Research Methods: Historical, Descriptive, Case Study, Exploratory

Unit - 7 Research Techniques and Tools: Questionnaire, Interview, Observation Methods

BLOCK -III Statistical Techniques

Unit - 8 Presentation of Data: Tabular, Graphic, Bar Diagram and Pie Chart etc.

Unit - 9 Sampling Techniques: Procedure, Types

Unit - 10 Descriptive Statistics: Measures of Central Tendency (Mean, Mode, Median)

Unit - 11 Measures of Dispersion: Variance and Standard Deviation

BLOCK-IV Statistical Inference, Bibliometrics and Report Writing

Unit - 12 Regression Analysis, Testing of Hypothesis: Chi-Square Test, f-test, t-test, **z**-test

Unit – 13 Bibliometrics: Concept, Need, Laws of Bibliometrics and their Applications

Unit - 14 Citation Analysis, Content Analysis

Unit - 15 Statistical packages – SPSS, (introduction)

Unit - 16 Report Writing

BLOCK-V Research and Publication Ethics and Plagiarism

Unit - 17 Publication ethics: definition, introduction and importance

Unit - 18 Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types

Unit - 19 Violation of publication ethics, authorship and contributorship

Unit - 20 Plagiarism

TABLE OF CONTENTS

Block-I: Introduction to Research

Block-II: Research Design, Methods and Techniques

Unit 9:

Unit 10:

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Block-IV Statistical Inference, Bibliometrics And Report Writing

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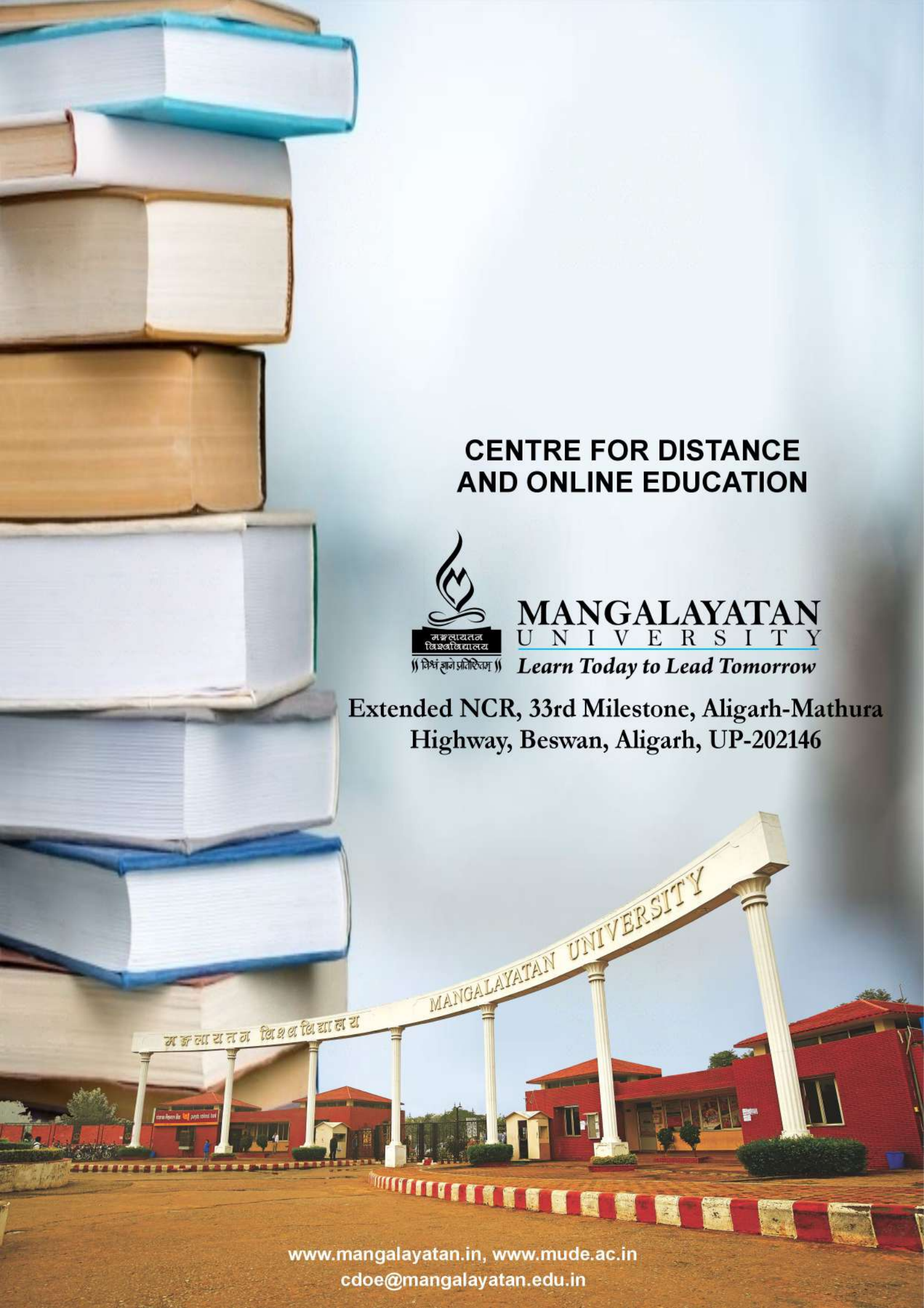

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MASTER OF SCIENCE (CHEMISTRY)

CHL-6111

Instrumental Chemistry of Analysis

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Course Name: Instrumental Chemistry of Analysis

Course Code: CHL-6111 **Credits: 4**

BLOCK I: GENERAL INTRODUCTION TO ANALYTICAL METHODS
UNIT 1:

UNIT 5:

UNIT 6:

BLOCK III: UV-VIS AND RAMAN SPECTROSCOPY

BLOCK IV: INFRARED SPECTROMETRY AND THERMOGRAVIMETRIC ANALYSIS

UNIT 10:

UNIT 11:

UNIT 15

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MASTER OF SCIENCE (CHEMISTRY)

CHL-6213

Transition and Inner Transition Metal Chemistry

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Course Name: Transition and Inner Transition Metal Chemistry

Course Code: CHL-6213 **Credits: 4**

BLOCK I: COORDINATION CHEMISTRY: GENERAL INTRODUCTION
UNIT 1:

UNIT 2:

UNIT 3:

BLOCK II: ELECTRON TRANSFER REACTION

UNIT 4:

UNIT 5:

5.2.3. Metallic character
5.2.4 Ionization energy
5.2.5 Magnetic properties
5.2.6 Uv-visible spectroscopy
5.2.7 IR spectroscopy
5.2.8 NMR spectroscopic properties
5.2.9 Mass Spectrometry
5.2.10 Melting and boiling point
5.2.11 Magnetic susceptibility
5.2.12 Redox properties
5.2.13 Complex ion formation
5.2.14 Catalytic activity
5.3 Summary
5.4 Keywords
5.5 Review Questions
5.6 Further Readings

UNIT 6:

6.0 Objectives
6.1 Introduction
6.1.1 Basic principle of electrochemistry
6.1.2 Importance in transition metal studies
6.2 Types of electrochemical methods
6.2.1 Cyclic Voltammetry
6.2.1.1 Principle and operation
6.2.1.2 Application in transition metal complex
6.2.2 Differential pulse voltammetry
6.2.2.1 Principle and operation
6.2.2.2 Application in transition metal complex
6.2.3 Chronoamperometry
6.2.3.1 Principle and operation
6.2.3.2 Application in transition metal complex
6.2.4 Electrochemical Impedance Spectroscopy
6.2.4.1 Principle and operation
6.2.4.2 Application in transition metal complex
6.3 Electrochemical parameters
6.3.1 Redox potential
6.3.2 Current response
6.4 Applications in Transition metal studies
6.4.1 Redox behavior of transition metal complex
6.4.2 Ligand substitution reaction
6.4.3 Quantitative analysis of complexes
6.5 Challenges and limitations
6.6 Summary
6.7 Keywords
6.8 Review Questions
6.9 Further Readings

BLOCK III: METAL-METAL BONDED COMPOUNDS AND BIOINORGANIC CHEMISTRY

UNIT 7:

UNIT 8:

UNIT 9:

BLOCK IV: TRANSITION ELEMENTS

UNIT 10:

UNIT 11:

UNIT 12:

BLOCK V: CHEMISTRY OF SOME ELEMENTS

UNIT 13:

UNIT 14:

UNIT 15:

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CENTRE FOR DISTANCE AND ONLINE EDUCATION

BACHELOR OF LIBRARY AND INFORMATION SCIENCE

Knowledge Organization Classification

BLO-1102

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Course Name: Knowledge Organization Classification (Theory)

Course Code: BLO-1102 **Credits: 4**

Course Objective: To develop an understanding of the concepts, theories and importance of library classification, and its use in the organization of knowledge in libraries.

Course Outcomes (COs):

S. No.	Course Outcomes (COs)
1.	Understand the meaning, purpose, functions, theories and canons of library classification
2.	Analyze the characteristics, merits and demerits of different species of library classification schemes
3.	Highlight salient features of major classification schemes
4.	Elucidate various facets of notation and call number
5.	Review current trends in library classification

Block I: Library Classification

Unit 1: Classification: Definition, Need, Purpose
Unit 2: Terminology of Classification
Unit 3: General Theory of Classification
Unit 4: Species of Classification

Block II: Major Classification

Unit 5: Major Schemes of Classification: An Overview
Unit 6: DDC,
Unit 7: CC,
Unit 8: UDC,

Block III: Normative Principles of Classification

Unit 9: Work of Classification in three Planes: Canons and their applications in Standard Schemes
Unit 10: Fundamental Categories
Unit 11: Phase Relation and Common Isolates

Block IV: Mnemonics

Unit 12: Definition, types, Canons and their applications in Standard Schemes

Unit 13: Hospitality in Notational System: Canons and Devices
Unit 14: Notation: Need, Purpose, Types and Qualities
Unit 15: Mechanics

Block V: Facet Sequence

Unit 16: Concept and Principles
Unit 17: Postulation Steps in Practical Classification
Unit 18: Book Number and Collection Number
Unit 19: Library Classification and Trends

Text and Reference Books

1. Hunter, Eric J. Classification made Simple, Taylor and Francis, 2002
2. Krishan Kumar. Theory of classification, Vikas, New Delhi, 1993
3. Shabhahat, Husain. Library Classification: Facets and Analysis, 2nd rev ed., B.R. Publications, Delhi, 2002.

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Block-II: Major Classification

Block -III Normative Principles of Classification

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Unit 12:

Unit 13:

Block-V Facet Sequence

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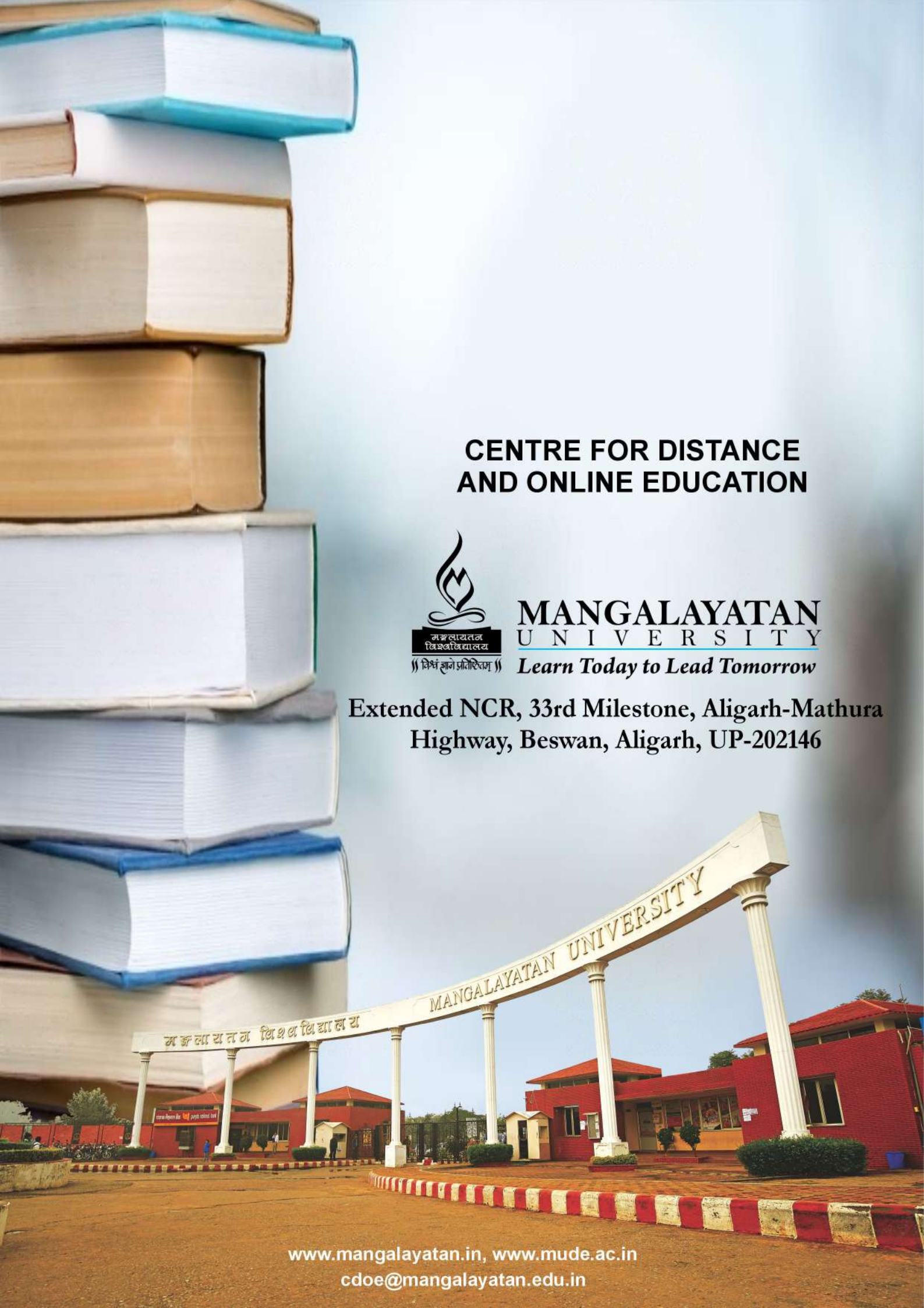

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CENTRE FOR DISTANCE AND ONLINE EDUCATION

BACHELOR OF LIBRARY AND INFORMATION SCIENCE

Management of Libraries and Information Centers

BLO-1201

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Course Name: Management of Libraries and Information Centers

Course Code: BLO-1201 **Credits: 4**

Course Objective:

To equip students with an understanding of the concept and principles of library management and its application in the organization and management of building, operations, services and human resource of the library.

Course Outcomes (COs):

S. No.	Course Outcomes (COs)
1.	Understand the concept and scope of library management
2.	Elaborate principles and functions of library management
3.	Efficiently carry out various operations of Library and Information Centers
4.	Comprehend the concept of Financial Management and Human Resource Management
5.	Designing of library and information system/ MIS
6.	Maintain the library statistics and prepare annual report

Block I: Essentials of Management

Unit 1: Concept, history and functions of Management
Unit 2: Principles of Management & their application in Libraries and Information Centers
Unit 3: Elements of Management Process: POSDCORB
Unit 4: Concept, Policy, Elements and Principles and TQM

Block II: Library Management-General aspects

Unit 5: HRM
Unit 6: Job Description: Analysis, Specification and Evaluation**,** Selection and Recruitment
Unit 7: Motivation
Unit 8: Training and Development, Performance Appraisal
Unit 9: Sources of Library Finance

Block III: Library Management-General aspects

Unit 10: Library Authority and Library Committee
Unit 11: Staffing, Different Sections of Libraries and their working
Unit 12: Selection – tools for book and non-book materials
Unit 13: Handling of Government Documents and Manuscripts

Block IV: Collection Development and Management

Unit 14: Acquisition, Technical and Circulation, Serial Control Sections and their processing
Unit 15: System analysis, Design of Library system

Unit 16: Preservation and Conservation of Library Resources (printed and digital)
Unit 17: Stock Verification

Block V: Financial Management and Annual Report

Unit 18: Financial Management in Libraries, Budget Estimation – Line Budget, Program Budget, Performance Budget
Unit 19: Organizational Structure: Centralized and Decentralized
Unit 20: Library Statistics, Annual Report: Compilation, Contents and Style

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Unit 4: Concept, Policy, Elements and Principles and TQM

BLOCK II: LIBRARY MANAGEMENT- GENERAL ASPECTS

Unit 5: HRM

Unit 9: Sources of Library Finance

Block III: Library Management-General aspects

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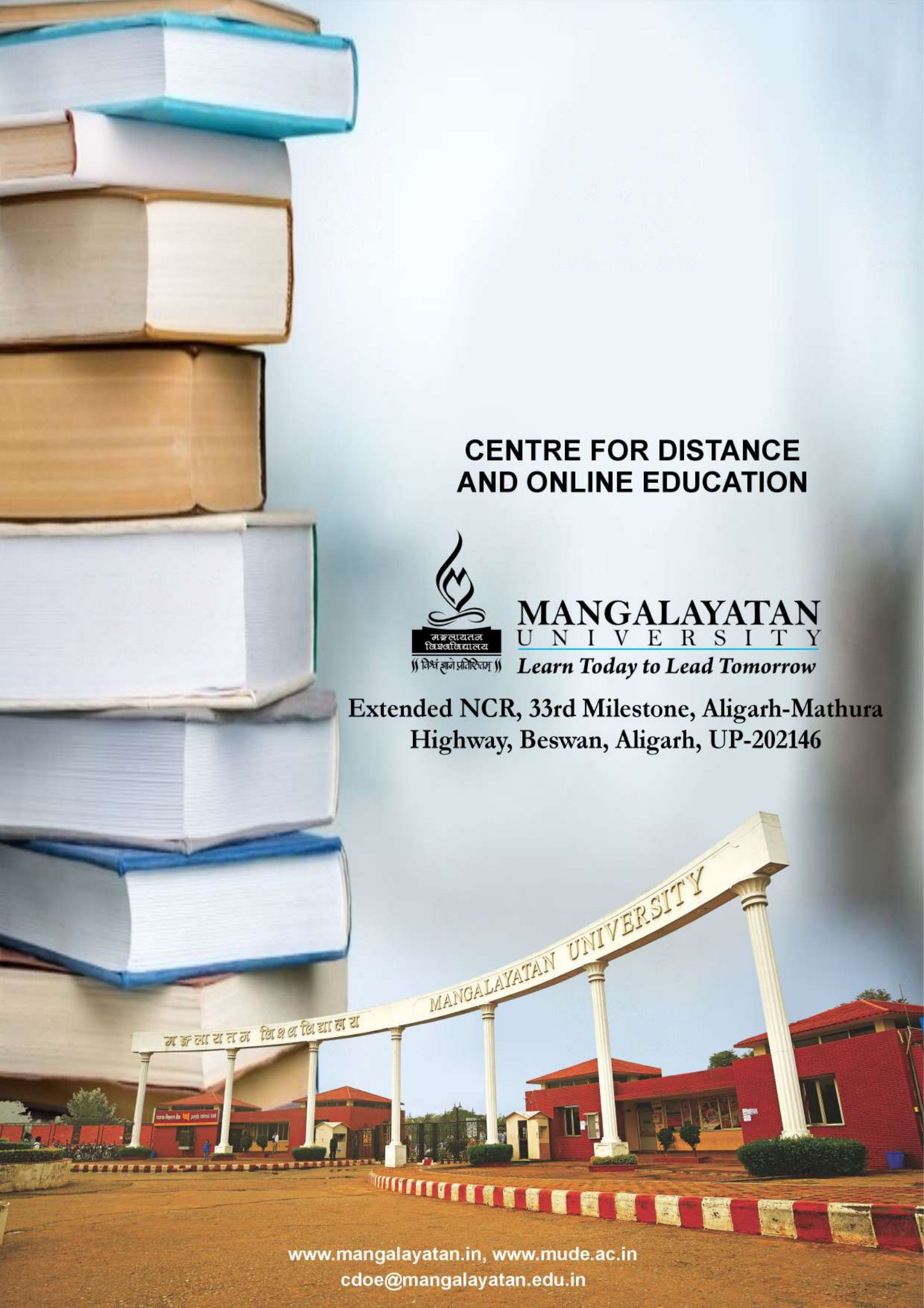

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MASTER OF SCIENCE
(Physics)

PHO-6111

Mathematical Physics-I

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Course Code: PHO-6111

Course: Mathematical Physics-I

Credit: 4

Block – 1: Theory of Functions of a Complex Variable

Unit-1: Cauchy-Reimann Equation

Unit-2: Taylor' Series and Laurent's series expansion

Unit-3: Residues and Cauchy's Residue theorem

Unit-4: Definite Integrals

Block – 2: Fourier Transform

Unit-5: Fourier Transform and Dirac Delta Function

Unit-6: Properties of Fourier Transforms

Unit-7: Parseval's Theorem and Convolution Theorem

Block – 4: Group Theory

Unit-13: Concept of a group

Unit-14: Matrix representation

Unit-15: The Great Orthogonality Theorem

Unit-16: Lie groups

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MASTER OF SCIENCE
(Physics)

PHO-6112

Classical Mechanics

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Course Code: PHO-6112

Course: Classical Mechanics

Credit: 4

Block – 1: Classical Mechanics Fundamentals and Principles

Unit-1: Newtonian physics

Unit-2: D'Alembert's principle

Unit-3: Hamilton's principle

Unit-4: Generalized momenta

Block – 2: Canonical Transformations and Hamilton-Jacobi Method

Unit-5: Canonical transformation

Unit-6: Poisson and Lagrange brackets

Unit-7: Equations of motion in infinitesimal canonical transformation

Unit-8: Hamilton Jacobi Method

Block – 3: Celestial Mechanics and Small Oscillations

Unit-9: Two body central force problem

Unit-10: Motion in a central force field

Unit-11: Kepler problem

Unit-12: Small oscillations

Block – 4: Relativistic mechanics

Unit-13: Lorentz transformations

Unit-14: Four vectors

Unit-15: Equation of motion in four vector form

Unit-16: Relativistic Lagrangian and Hamiltonian

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BACHELOR OF JOURNALISM AND MASS COMMUNICATION

History of Mass Media

JMO- 1102

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COURSE NAME: History of Mass Media

COURSE CODE: JMO 1102

Block 1

BLOCK 3

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BACHELOR OF JOURNALISM AND MASS COMMUNICATION

Print Media

JMO- 1201

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COURSE NAME: PRINT MEDIA
COURSE CODE: JMO-1201

BLOCK 1

BLOCK 2

BLOCK 3

BLOCK 4

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Bachelor of Science

ZCO-1211

Biochemistry and Physiology

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Subject Code: ZCO-1211 **L T P C**
Subject: Biochemistry and Physiology **4 0 0 4**

Block 1: Structure and Function of Biomolecules

Unit-1:

1.0 Objectives
1.1 Introduction
1.2 Structure and Biological importance of carbohydrates
    1.2.1 Monosaccharides
    1.2.2 Disaccharides
    1.2.3 Polysaccharides
    1.2.4 Glycoconjugates
1.3 Lipids
    1.3.1 saturated and unsaturated fatty acids
    1.3.2 Tri-acylglycerols
    1.3.3 Phospholipids
    1.3.4 Glycolipids
    1.3.5 Steroids
1.4 Summary
1.5 Keywords
1.6 Review Questions
1.7 Further Readings

Unit-2:

2.0 Objectives
2.1 Introduction
2.2 Structure of α-amino acids
2.3 Classification and General properties
2.4 Essential and non-essential α-amino acids
2.5 Levels of organization in proteins
2.6 Simple and conjugate proteins
2.7 Summary
2.8 Keywords
2.9 Review Questions
2.10 Further Readings

Unit-3:

3.0 Objectives
3.1 Introduction
3.2 Nomenclature and classification of enzymes
3.3 Cofactors
3.4 Specificity of enzyme action
3.5 Isozymes
3.6 Mechanism of enzyme action
3.7 Summary
3.8 Keywords
3.9 Review Questions

13.4 Origin of action potential and its propagation across the myelinated and unmyelinated nerve fibers
13.5 Types of synapse
13.6 Summary
13.7 Keywords
13.8 Review Questions
13.9 Further Readings

Unit-14:
14.0 Objectives
14.1 Introduction
14.2 Endocrine glands
- 14.2.1 pineal
- 14.2.2 pituitary
- 14.2.3 thyroid
- 14.2.4 parathyroid
- 14.2.5 pancreas
- 14.2.6 adrenal

14.3 Classification of hormones
14.4 Mechanism of Hormone action
14.5 Summary
14.6 Keywords
14.7 Review Questions
14.8 Further Readings

Unit-15:
15.0 Objectives
15.1 Introduction
15.2 Muscular System Histology of different types of muscle
15.3 Ultra structure of skeletal muscle
15.4 Molecular and chemical basis of muscle contraction
15.5 Characteristics of muscle twitch
15.6 Motor unit
15.7 summation and tetanus
15.8 Summary
15.9 Keywords
15.10 Review Questions
15.11 Further Readings

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Bachelor of Science

BDO -1111

Microbiology & Plant Pathology

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Subject Code: BDO-1111 **L T P C**
Subject: Microbiology & Plant Pathology **4 0 0 4**

Block-I: Introduction to Indian ancient,
Unit-1:
1.0 Objectives
1.1 Introduction
1.2 Vedic and heritage Botany
1.3 contribution of Indian Botanists
1.4 Summary
1.5 Keywords
1.6 Review Questions
1.7 Further Readings

Unit-2:
2.0 Objectives
2.1 Introduction
2.2 Microscopy –Light, phase contrast
2.3 electron
2.4 scanning and transmission electron microscopy
2.5 staining techniques for light microscopy
2.5 sample preparation for electron microscopy.
2.6 Summary
2.7 Keywords
2.8 Review Questions
2.9 Further Readings

Unit 3:
3.0 Objectives
3.2 Introduction
3.3 principle working
    3.3.1 autoclave
    3.3.2 oven
    3.3.3 laminar air flow
    3.3.4 centrifuge
3.4 Colorimetry and spectrophotometry
3.5 immobilization methods
3.6 fermentation and fermenters.
3.7 Summary
3.8 Keywords
3.9 Review Questions
3.10 Further Readings

Unit-4:
4.0 Objectives
4.1 Introduction

4.2 Cell structure of Eukaryotic and prokaryotic cells
4.3 Gram positive and Gram-negative bacteria
4.4 Structure of a bacteria; Bacterial Chemotaxis and Quorum sensing
4.5 Bacterial Growth curve
4.6 factors affecting growth of microbes
4.7 measurement of growth
4.8 Batch culture
4.9 fed batch culture and continuous culture
4.10 Synchronous growth of microbes
4.11 Sporulation and reproduction and recombination in bacteria.
4.12 Summary
4.13 Keywords
4.14 Review Questions
4.15 Further Readings

Unit-5:
5.0 Objectives
5.1 Introduction
5.2 Viruses
    5.2.1 general characteristics
    5.2.2 viral culture
    5.2.3 Structure of viruses
5.3 Bacteriophages
5.4 Structure of T4 & λ-phage
5.5 Lyticand Lysogenic cycles
5.6 viroid, Prions & mycoplasma & phytoplasma
5.7 Actinomycetes & plasmids and their economicuses.
5.8 Summary
5.9 Keywords
5.10 Review Questions
5.11 Further Readings

Block-2

Unit-6:
6.0 Objectives
6.1 Introduction
6.2 Range of thallus organization in Algae
6.3 Pigments
6.4 Reserve food –Reproduction - Classification and life cycle
    6.4.1 *Nostoc*
    6.4.2 Chlorella
    6.4.3 *Volvox*
    6.4.4 Hydrodictyon
    6.4.5 Oedogonium
    6.4.6 Chara
    6.4.7 Sargassum

9.9 Further Readings

Block-3 Mushroom Cultivation, Lichenology & Mycorrhiza

Unit-10
10.0 Objectives
10.1 Introduction
10.2 Mushroom cultivation
10.3 General account of lichens
10.4 reproduction and significance
10.5 *Mycorrhiza*
10.6 ectomycorrhiza
10.7 endomycorrhiza
10.8 Summary
10.9 Keywords
10.10 Review Questions
10.11 Further Readings

Unit-11
11.0 Objectives
11.1 Introduction
11.2 Disease concept
11.3 Symptoms
11.4 Etiology & causal complex
11.5 Primary and secondary inoculum
11.6 Infection
11.7 Pathogenicity and pathogenesis.
11.8 Summary
11.9 Keywords
11.10 Review Questions
11.11 Further Readings

Unit-12
12.0 Objectives
12.1 Introduction
12.2 Koch's Postulates
12.3 Mechanism of infection (Brief idea about Pre-penetration, Penetration and Postpenetration)
12.4 Summary
12.5 Keywords
12.6 Review Questions
12.7 Further Readings

Unit-13
13.0 Objectives
13.1 Introduction
13.2 Disease cycle (monocyclic, polycyclic and polyetic)

16.2.2 Biological
16.2.3 Integrated pest disease management
16.4 Summary
16.5 Keywords
16.6 Review Questions
16.7 Further Readings

Unit-17
17.0 Objectives
17.1 Introduction
17.2 Food fermentations and food produced by microbes
17.3 amino acids, Production of antibiotics
17.4 enzymes, vitamins, alcoholic beverages
17.5 organic acid & genetic recombinant vaccines
17.6 Mass production of bacterial biofertilizers
17.7 blue green algae
17.8 Summary
17.9 Keywords
17.10 Review Questions
17.11 Further Readings

Books Recommended/Suggested Reading:

1. Lodish et al: Molecular Cell Biology: Freeman & Co, USA (2004).
2. Alberts et al: Molecular Biology of the Cell: Garland (2002).
3. Cooper: Cell: A Molecular Approach: ASM Press (2000).
4. Karp: Cell and Molecular Biology: Wiley (2002). Pierce B. Genetics. Freeman (2004).
5. Lewin B. Genes VIII. Pearson (2004).
6. Watson et al. Molecular Biology of the Gene. Pearson (2004).
7. Thomas J. Kindt, Richard A. Goldsby, Barbara A. Osborne, Janis KubyKuby Immunology. W
8. Delves Peter J., Martin Seamus J., Burton Dennis R., Roitt Ivan M. Roitt's Essential Immunology, 13th Edition. Wiley Blackwell (2017).
9. Shetty Nandini Immunology Introductory Textbook. New Age International. (2005)

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BACHELOR OF SCIENCE

CHO-1111

Inorganic Chemistry

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Course Title: Inorganic Chemistry **Credit: 4**
Course Code: CHO-1111

BLOCK I: ATOMIC STRUCTURE

UNIT 1:

UNIT 2:

UNIT 3:

BLOCK II: CHEMICAL BONDING

UNIT 4:

UNIT 5:

UNIT 6:

BLOCK III: ALKALI AND ALKALINE EARTH METALS

UNIT 7:

UNIT 8:

UNIT 9:

BLOCK IV: GROUP 13, 14 AND 15 ELEMENTS

UNIT 10:

UNIT 11:

UNIT 12:

BLOCK V: GROUP 16, 17 AND 18 ELEMENTS

UNIT 13:

UNIT 14:

UNIT 15:

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BACHELOR OF SCIENCE

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Mechanics and Wave Motion

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Course Name: Mechanics and Wave Motion
Course Code: PHO-1111
Credits: 4

Block – 1: Dynamics of System of Particles

Unit-1: Frame of reference

1.0 Objectives
1.1 Introduction
1.2 Inertial and Non-inertial reference frames,
1.3 Newton's laws of motion,
1.4 GalileanTransformations
1.5 Galilean Invariance
1.6 Summary
1.7 Keywords
1.8 Review questions
1.9 Further readings

Unit-2: Conservative and non conservative forces

2.0 Objectives
2.1 Introduction
2.2 Work
2.3 kinetic and potential energy
2.4 Conservative and Non-conservative forces
2.5 Summary
2.6 Keywords
2.7 Review questions
2.8 Further readings

Unit-3: Linear momentum

3.0 Objectives
3.1 Introduction
3.2 Conservation of energy
3.3 linear momentum
3.4 Summary
3.5 Keywords
3.6 Review questions
3.7 Further readings

Unit-4: Collision in one and two dimensions

Block – 2: Rotational Mechanics

Unit-5: Angular momentum and Torque

Unit-6: Angular momentum and Torque

Unit-7: Rotational energy and rotational inertia for simple bodies

Unit-8: Combined translation and rotational and motion of a rigid body on horizontal and inclined planes

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Bachelor of Science

MAO-1111

Calculus

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Course Name: Calculus **Course Code: MAO-1111**
Credits: 4

Block I: Limit, Continuity and Differentiability

Unit 1: $\varepsilon-\delta$ definition of the limit of a function and algebra of limits

Unit 2: Continuous functions and Classification of discontinuities

Unit 3: Differentiability and Chain rule of differentiability

Unit 4: Successive differentiation and Leibnitz's theorem

Block II: Differential Calculus-I

Block III: Differential Calculus-II

Block IV: Integral Calculus-I

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