

## BBAI501 HUMAN VALUES AND PROFESSIONAL ETHICS

| SUBJECT CODE | SUBJECT NAME                         | TEACHING & EVALUATION SCHEME |               |                      |                         |                      |   |   |   |
|--------------|--------------------------------------|------------------------------|---------------|----------------------|-------------------------|----------------------|---|---|---|
|              |                                      | THEORY                       |               |                      | PRACTICAL               |                      | L | T | P |
|              |                                      | END SEM University Exam      | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* |   |   |   |
| BBAI501      | Human Values and Professional Ethics | 60                           | 20            | 20                   | -                       | -                    | 4 | - | - |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

\*Teacher Assessment shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

### Course Objectives

The objective of the course is to disseminate the theory and practice of moral code of conduct and familiarize the students with the concepts of "right" and "good" in individual, social and professional context

### Course Outcomes

1. Help the learners to determine what action or life is best to do or live.
2. Right conduct and good life.
3. To equip students with understanding of the ethical philosophies, principles, models that directly and indirectly affect business.

## COURSE CONTENT

### Unit I: Human Value

1. Definition, Essence, Features and Sources
2. Sources and Classification
3. Hierarchy of Values
4. Values Across Culture

### Unit II: Morality

1. Definition, Moral Behaviour and Systems
2. Characteristics of Moral Standards
3. Values Vs Ethics Vs Morality
4. Impression Formation and Management

  
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### Unit III: Leadership in Indian Ethical Perspective.

1. Leadership, Characteristics
2. Leadership in Business (Styles), Types of Leadership (Scriptural, Political, Business and Charismatic)
3. Leadership Behaviour, Leadership Transformation in terms of Shastras (Upanihads, Smritis and Manu-smriti).

### Unit IV: Human Behavior – Indian Thoughts

1. Business Ethics its meaning and definition
2. Types, Objectives, Sources, Relevance in Business organisations.
3. Theories of Ethics. Codes of Ethics

### Unit V: Globalization and Ethics

1. Sources of Indian Ethos & its impact on human behavior
2. Corporate Citizenship and Social Responsibility – Concept (in Business),
3. Work Ethics and factors affecting work Ethics.

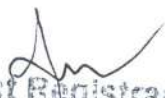
### Suggested Readings

1. Beteille, Andre (1991). *Society and Politics in India*. Athlone Press:New Jersey.
2. Chakraborty, S. K. (1999). *Values and Ethics for Organizations*. oxford university press
3. Fernando, A.C. (2009). *Business Ethics - An Indian Perspective*. India: Pearson Education: India
4. Fleddermann, Charles D. (2012). *Engineering Ethics*. New Jersey: Pearson Education / Prentice Hall.
5. Boatright, John R (2012). *Ethics and the Conduct of Business*. Pearson. Education: New Delhi.
6. Crane, Andrew and Matten, Dirk (2015). *Business Ethics*. Oxford University Press Inc:New York.
7. Murthy, C.S.V. (2016). *Business Ethics – Text and Cases*. Himalaya Publishing House Pvt. Ltd:Mumbai
8. Naagrajan, R.R (2016). *Professional Ethics and Human Values*. New Age International Publications:New Delhi.



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DEGREE PROGRAM

B.Sc. IV Sem

| SUBJECT CODE | Category | SUBJECT NAME                     | TEACHING & EVALUATION SCHEME |               |                       |                         |                       |    |   |   |         |
|--------------|----------|----------------------------------|------------------------------|---------------|-----------------------|-------------------------|-----------------------|----|---|---|---------|
|              |          |                                  | THEORY                       |               |                       | PRACTICAL               |                       | Th | T | P | CREDITS |
|              |          |                                  | End Sem University Exam      | Two Term Exam | Teachers Assessment * | End Sem University Exam | Teachers Assessment * |    |   |   |         |
| BSPH402      | DC       | Electrostatics & Magneto statics | 60                           | 20            | 20                    | 30                      | 20                    | 3  | 1 | 4 | 6       |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;  
Q/A – Quiz/Assignment/Attendance, MST MidSem Test.

\*Teacher Assessment shall be based on following components: Quiz/Assignment/  
Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Objectives:-

1. To develop the comprehensive understanding of laws of physics related to Electrostatics & Magnetostatics and ability to apply them for laying the foundation for research and development.
2. To work ethically as member as well as leader in a diverse team.

Course Outcomes:-

1. Student will be able to understand and solve the problems related to Electrostatics.
2. Student will be able to understand and solve the problem related to Magnetostatics.
3. Student will be able to determine physical parameter experimentally with optimal usage of resources and complete the assignments in time.

*(Handwritten signatures and initials)*



BSPH 402-Electrostatics & Magnetostatics

Unit-1

Electric Circuits AC Circuits: - Complex Reactance and Impedance. Series LCR Circuit: Resonance, Power Dissipation and Quality Factor, and Band Width. Parallel LCR Circuit. Network theorems: - Ideal Constant voltage and Constant-current Sources, Network Theorems: Thevenin theorem, Norton theorem, Superposition theorem, Reciprocity theorem, and Maximum Power Transfer theorem.

Unit-2

Electrostatics Coulombs law in vacuum expressed in vector forms, calculations of electric field  $E$  for simple distributions of charge at rest, dipole and quadruple fields. Relation between electric field & electric potential ( $E = -\nabla V$ ), torque on a dipole in a uniform electric field and its energy, flux of the electric field, Gauss's law and its application. Dielectrics, parallel plate capacitor with a dielectric, dielectric constant, polarization and polarization vector  $P$ , relation between displacement vector  $D$ ,  $E$  and  $P$ . Molecular interpretation of Claussius-Mossotti equation

Unit-3

Magnetostatics Force on a moving charge, Lorentz force equation and definition of  $B$ , force on a straight conductor carrying current in a uniform magnetic field, torque on a current loop, magnetic dipole moment, angular momentum and gyro magnetic ratio, Biot and Savart's law, Electromagnetic induction, Faraday's Laws, Electromotive force, Integral and differential forms of Faraday's laws, Self and mutual inductance, Transformers, Energy in a static magnetic field, Maxwell's displacement current, Derivations of Maxwell's equations, Electromagnetic field energy density, Poynting vector,

Unit-4

Current Electricity: Steady current, current density  $J$ , non-steady currents and continuity equation, Kirchoff's laws and analysis of multi loop circuits, growth and decay of current in LR and CR circuits, decay constants, LCR circuits. AC circuits, complex numbers and their applications in solving AC circuits problems, complex impedance and reactance, series and parallel resonance. Q-factor, power consumed by an A.C. circuit, power factor, Y and  $\Delta$  networks and transmission of electric power.

Unit-5

Dielectric Properties of Matter Dielectrics:- Electric Field in Matter. Dielectric Constant. Parallel Plate Capacitor with a Dielectric. Polarization, Polarization Charges and Polarization Vector. Electric Susceptibility. Gauss's law in Dielectrics. Displacement vector  $D$ . Relations between the three Electric Vectors. Capacitors filled with Dielectrics.

*Supriya* *Ch* *Shruti*



### References:

1. Introduction to Electrodynamics: David J. Griffiths, 4th Edition, Printice Hall.
2. Classical Electrodynamics: Jhon David Jackson, Jhon Wiley & Sons.
3. Electrodynamics: Emi Cossor & Bassin Lorraine, Asahi Shimbunsha Publishing Ltd.
4. From Neuron to Brain: Kuffler and Nicholas, Sinauer Associates, Inc Pub. Sunderland, Masschuetts (Reference for topics of Bioelectricity) Department of Higher Education, Government of Mad

### List of Experiments:

1. Hall probe method for measurement of resistivity. ✓
2. To Study Series Resonance CKT
3. Charging and discharging of Capacitor through resistance ✓
4. Study of B-H Curve (Magneto statics)
5. To study Parallel Resonance ✓
6. Measurement of Frequency of A.C. mains by electrically maintained vibrating rod. (Electromagnetic induction)
7. Growth and decay of current in LR
8. Determination of  $e/m$  using Thomson's method. ✓
9. Verification of Thevenin theorem
10. Verification of Norton theorem
11. Verification of Superposition theorem
12. Verification of Maximum Power Transfer theorem.

Supriya

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# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Name of the Program: B. Sc. (Plain)

| SUBJECT CODE | Category | SUBJECT NAME                                   | TEACHING & EVALUATION SCHEME |     |     |           |     |    |   |   |         |
|--------------|----------|------------------------------------------------|------------------------------|-----|-----|-----------|-----|----|---|---|---------|
|              |          |                                                | THEORY                       |     |     | PRACTICAL |     | Th | T | P | CREDITS |
|              |          |                                                | END SEM                      | MST | Q/A | END SEM   | Q/A |    |   |   |         |
| BSMA 403     | DC       | <b>Analytical Geometry of three dimensions</b> | 60                           | 20  | 20  | -         | -   | 3  | 1 | - | 4       |

### Course Objective

*To introduce the students with the Fundamentals of the Analytical Geometry of three dimensions.*

### Course Outcomes

*After the successful completion of this course students will be able to*

- 1. understand and solve problems of the straight lines in 3D.*
- 2. solve the problems of the planes.*
- 3. know the solution of the problems of the spheres.*
- 4. understand and apply the concepts of the algebra of the Right circular cone.*

### Course Content:

#### UNIT – I

Rectangular Cartesian co-ordinates: Distance between two points. Division of a line segment in a given ratio. Direction cosines and direction ratios of a straight line. Projection of a line segment on another line. Angle between two straight lines.

#### UNIT – II

  
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## Name of the Program: B. Sc. (Plain)

Equation of a Plane: General form. Intercept and Normal form. Angle between two planes. Signed distance of a point from a plane. Bisectors of angles between two intersecting planes.

### UNIT – III

Equations of Straight line: General and symmetric form. Distance of a point from a line. Coplanarity of two straight lines. Shortest distance between two skew-lines.

### UNIT – IV

Sphere and its tangent plane.

### UNIT – V

Right circular cone.

#### Texts:

1. Co-ordinate Geometry – S. L. Loney.
2. Co-ordinate Geometry of Three Dimensions – Robert J. T. Bell.
3. Elementary Treatise on Conic sections – C. Smith.
4. Solid Analytic Geometry – C. Smith.
5. Higher Geometry – Efimov.

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# Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore

## Shri Vaishnav Institute of Computer Applications

Name of Program: B.Sc. (Computer Science)

| Subject Code | Category   | Subject Name               | Teaching & Evaluation Scheme |               |                    |                         |                    |   |   |   |         |
|--------------|------------|----------------------------|------------------------------|---------------|--------------------|-------------------------|--------------------|---|---|---|---------|
|              |            |                            | Theory                       |               |                    | Practical               |                    | L | T | P | CREDITS |
|              |            |                            | End Sem University Exam      | Two Term Exam | Teacher Assessment | End Sem University Exam | Teacher Assessment |   |   |   |         |
| BSCS404      | Compulsory | Database Management System | 60                           | 20            | 20                 |                         |                    | 3 | 1 | 0 | 4       |

**Legends:** L – Lecture; T – Tutorial/Teacher Guided Student Activity; P – Practical; Q/A – Quiz/Assignment/Attendance; MST – Mid Semester Test.

**\*Teacher Assessment** shall be based on following components: Quiz/Assignment/Project/Participation in class activities, given that no component shall exceed more than 10 marks

### Course Education Objectives (CEOs):

- To provide a sound introduction to the discipline of database management as a subject in its own right, rather than a compendium of techniques and product specific tools.
- To give a good formal foundation on the relational model of data.
- To present SQL and procedural interfaces to SQL comprehensively.
- To give an introduction to systematic database design approaches covering conceptual design, logical design and an overview of physical design.
- To introduce the concepts of transactions and transaction processing.

### Course Outcomes (COs):

- Design any Desktop application using an entity relationship diagrams (ERD) to express requirements and demonstrates skills to model data requirements and create data models.
- Understanding of database systems theory in order to apply that knowledge to any particular database implementation using Structured Query Language (SQL).
- To learn and understand various Database Architectures and Applications.
- Develop an ability to remove data redundancy by translating created relational model into normalized designs.

### UNIT-I

**Introduction:** An overview of database management system, database system Vs file system, Characteristics of database approach, DBMS architecture, data models, schema and instances, data independence.

### UNIT II

**Data Modelling using Entity Relationship Model:** Entity, Entity types, entity set, notation for ER diagram, attributes and keys, Concepts of composite, derived and multivalued attributes, Super Key.

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candidate key, primary key, relationships, relation types, weak entities, enhanced E-R and object modelling, Sub Classes:, Super classes, inheritance, specialization and generalization.

#### UNIT – III

**Introduction to SQL:** Overview, Characteristics of SQL. Advantage of SQL, SQL data types and literals.

**Types of SQL commands:** DDL, DML, DCL. Basic SQL Queries.

**Logical operators:** BETWEEN, IN, AND, OR and NOT

**Null Values:** Disallowing Null Values, Comparisons Using Null Values

**Integrity constraints:** Primary Key, Not NULL, Unique, Check, Referential key Introduction to Nested Queries, Correlated Nested Queries, Set-Comparison Operators, Aggregate Operators: The GROUP BY and HAVING Clauses,

**Joins:** Inner joins, Outer Joins, Left outer, Right outer, full outer joins. Overview of views and indexes.

#### UNIT – IV

**Relational Data Model:** Relational model terminology domains, Attributes, Tuples, Relations, characteristics of relations, relational constraints domain constraints, key constraints and constraints on null, relational DB schema. Codd's Rules.

**Relational algebra:** Basic operations selection and projection, Set Theoretic operations Union, Intersection, set difference and division,

**Join operations:** Inner, Outer, Left outer, Right outer and full outer join.

#### UNIT V

**ER to relational Mapping:** Data base design using ER to relational language.

**Data Normalization:** Functional dependencies, Armstrong's inference rule, Normal form up to 3<sup>rd</sup> normal form.

#### TEXT BOOKS:

1. R. Elmasri and SB Navathe, "Fundamentals of Database Systems", Pearson, 6<sup>th</sup> ed.
2. Singh S.K., "Database System Concepts, design and application", Pearson Education
3. Ramakrishnan and Gherke, "Database Management Systems", TMH.

#### REFERENCE BOOKS:

1. Abraham Silberschatz, Henry Korth, S. Sudarshan, "Database Systems Concepts", 4<sup>th</sup> Edition, McGraw Hill, 1997.
2. Jim Melton, Alan Simon, "Understanding the new SQL: A complete Guide", Morgan Kaufmann Publishers, 1993.
3. A.K. Majumdar, P. Battacharya, "Data Base Management Systems", TMH, 1996.
4. Bipin Desai, "An Introduction to database Systems", Galgotia Publications, 2012.

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# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Name of the Program: B. Sc. (Plain)

| SUBJECT CODE | Category | SUBJECT NAME   | TEACHING & EVALUATION SCHEME |     |     |           |     |    |   |   |         |
|--------------|----------|----------------|------------------------------|-----|-----|-----------|-----|----|---|---|---------|
|              |          |                | THEORY                       |     |     | PRACTICAL |     | Th | T | P | CREDITS |
|              |          |                | END SEM                      | MST | Q/A | END SEM   | Q/A |    |   |   |         |
| BSMA 405     | DC       | Modern Algebra | 60                           | 20  | 20  | -         | -   | 3  | 1 | - | 4       |

### Course Objective

To introduce the students with the Fundamentals of the Modern Algebra.

### Course Outcomes

*After the successful completion of this course students will be able to*

- 1. understand and solve problems of the classical set theory.*
- 2. solve the problems of the group theory.*
- 3. apply the techniques of the ring and field theories.*
- 4. solve the problems of the vector space.*
- 5. understand and apply the concepts of the algebra of matrices.*

### Course Content:

#### UNIT – I

**Basic concept:** Sets, Sub-sets, Equality of sets, Operations on sets: Union, intersection and complement. Verification of the laws of Algebra of sets and De Morgan's Laws. Cartesian product of two sets. Mappings, One-One and onto mappings. Composition of Mappings—concept only, Identity and Inverse mappings. Binary Operations in a set. Identity element. Inverse element.

#### UNIT – II

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## Name of the Program: B. Sc. (Plain)

Introduction of Group Theory: Definition and examples taken from various branches (examples from number system, roots of unity,  $2 \times 2$  real matrices, non-singular real matrices of a fixed order). Elementary properties using definition of Group. Definition and examples of sub-group – Statement of necessary and sufficient condition – its applications.

### UNIT – III

Definitions and examples of (i) Ring, (ii) Field, (iii) Sub-ring, (iv) Subfield.

### UNIT – IV

Concept of Vector space over a Field: Examples, Concepts of Linear combinations, Linear dependence and independence of a finite set of vectors, Sup-space. Concepts of generators and basis of a finite-dimensional vector space. Problems on formation of basis of a vector space (No proof required).

### UNIT – V

Real Quadratic Form involving not more than three variables – Problems only. Characteristic equation of a square matrix of order not more than three – determination of Eigen Values and Eigen Vectors – Problems only. Statement and illustration of Cayley-Hamilton Theorem.

### Texts:

1. Modern Algebra – Surjeet Singh & Zameruddin.
2. First Course in Abstract Algebra – Fraleigh.
3. Topics in Algebra – Herstein.
4. Test book of algebra – Leadership Project Committee (University of Bombay).
5. Elements of Abstract Algebra – Sharma, Gokhroo, saini (Jaipur Publishing House, S.M.S. Highway, Jaipur - 3).
6. Abstract Algebra – N. P. Chaudhuri (Tata Mc.Graw Hill).
7. Linear Algebra – Hadley

  
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