BBAI501 HUMAN VALUES AND PROFESSIONAL ETHICS

SUBJECT CODE	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
		THEORY			PRACTICAL		L	T	P	CREDITS
		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	-	-	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 and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
BSPH 402	DC	Electrostatics and Magnetostatics	60	20	20	30	20	3	1	0	4

Course Objectives	1. To develop the comprehensive understanding of laws of physics related to Electrostatics and 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 Ourcomes	1. Student will be able to understand and solve the problems related to Electrostatics and Magnetostatics. 2. Student will be able to determine physical parameter experimentally with optimal usage of resources and complete the assignments in time.

Abbreviation		**Teacher Assessment (Theory) shall be based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall be exceed 10 Marks).**
Th	Theory	
T	Tutorial	**Teacher Assessment (Practical) shall be based on following components: Viva/ File/ Participation in Lab work (Given that no component shall be exceed 50% of Marks).**
P	Practical	

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BSPH 402: Electrostatics and Magnetostatics

UNIT I: Electrostatics-I

Coulombs law, calculations of electric field E for simple distributions of charge at rest, dipole and quadruple fields. Work done on a charge in an electrostatic field, conservative nature of the electrostatic field, Relation between electric field and electric potential, torque on a dipole in a uniform electric field and its energy. flux of the electric field.

UNIT II: Electrostatics-II

Gauss's law and its application, Capacitors, conducting sphere in a uniform electric field, point charge in front of a grounded infinite conductor. Dielectrics, parallel plate capacitor with a dielectric. dielectric constant. polarization and polarization vector P, relation between displacement vector D, E and P.

UNIT III: Current Electricity

Steady current, current density J, non-steady currents and continuity equation. Kirchoff's laws and analysis of multiloop 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, scries and parallel resonance. Q-factor, Network theorem: Thevenin theorem, Norton theorem, superposition theorem, maximum power transfer theorem.

UNIT IV: Motion of Charged Particles

E as an accelerating field, electron gun, discharge tube, linear accelerator, E as deflecting field, Principle and working of cyclotron, CRO, Sensitivity of CRO, Transverse B field, 180 deflection, Mass spectrograph (Bainbridge Mass spectrograph), Discovery of isotopes, curvatures of tracks for energy determination for nuclear particles, Mutually parallel E & B fields; Positive ray parabolas, Discovery of isotopes, principle of magnetic focusing (lenses).

UNIT V: Magnetostatics

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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 gyromagnetic ratio. Biot and Savart's law. calculation of H for simple geometrical situations such as Solenoid, Anchor ring. Ampere's Law, $\nabla \times B = \mu_0 J$, $\nabla . B = 0$. Field due to a magnetic dipole, free and bound currents, magnetization vector (M), relationship between B, H and M. Derivation of the relation $\nabla \times M$.

References

1. Berkley Physics Course. Electricity and Magnetism Ed. E. M. Purcell Mcgraw Hill
2. Physics Volume 2, D. Halliday and R. Resnick
3. Introduction to Electrodynamics: D. J. Griffiths, 4" Edition, Printice Hall.
4. Electricity and Magnetism: S. S. Atwood Dover.
5. Electrodynamics: Emi Cossor and Bassin Lorraine. Asahi Shimbunsha Publishing Ltd.

List of Experiments

1. To study Series and Parallel resonance circuit.
2. Charging and discharging of capacitor through resistance.
3. To compare Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac distribution function Vs temperature using M. S. Excel / C++.
4. Measurement of frequency of AC mains by electrically maintained vibrating rod.
5. Growth and decay of current in LR.
6. Verification of thevenin theorem.
7. Verification of Norton theorem.
8. Verfication of superposition theorem.
9. Verfication of maximum power transfer theorem.
10. Conversion of Galvanometer to Voltmer and its caliberation.

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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	**Analytical Geometry of three dimensions**	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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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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ShriVaishnav 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 forER 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 andgeneralization.

UNIT – III

Introduction to SQL: Overview, Characteristics of SQL. Advantage of SQL, SQL data typesand 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 andconstraints 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 3rd normal form.

TEXT BOOKS:

1. R. Elmarsi and SB Navathe, "Fundamentals of Database Systems", Pearson,6th 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", 4th Edition, McGraw Hill, 1997.
2. Jim Melton, Alan Simon, "Understanding the new SQL: A complete Guide", MorganKaufmann 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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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 x 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 – Hernstein.
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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