Choice Based Credit System (CBCS) in Light of NEP-2020
BBA+MBA - V SEMESTER (2021-2024)

BBAI501 HUMAN VALUES AND PROFESSIONAL ETHICS

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME					L	T	P	CREDITS
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BBAI501	CC	Human Values and Professional Ethics	60	20	20	-	-	3	-	-	3

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical: **C** - Credit; **CC-** Core Course
*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 Objective
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

Examination Scheme
The internal assessment of the students' performance will be done out of 40 Marks. The semester Examination will be worth 60 Marks. The question paper and semester exam will consist of two sections A and B. Section A will carry 36 Marks and consist of 5 questions, out of which student will be required to attempt any three questions. Section B will comprise of one or more cases / problems worth 24 marks.

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, Need for Human Values, Sources of Values
2. Essence of Values
3. Classification of Values (Temporal Values, Universal Values)
4. Values Across Culture

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Choice Based Credit System (CBCS) in Light of NEP-2020
BBA+MBA - V SEMESTER (2021-2024)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								CREDITS
			THEORY			PRACTICAL		L	T	P	
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BBAI501	CC	Human Values and Professional Ethics	60	20	20	-	-	3	-	-	3

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical: **C** - Credit; **CC**- Core Course
***Teacher Assessment** shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Unit II: Morality
1. Morality its meaning and definition
2. Values Vs Ethics Vs Morality
3. Concept of Impression Management
4. Impression Management Strategies (Intimidation, Ingratiation, Self-promotion, Supplication, Exemplification)

Unit III: Leadership in Indian Ethical Perspective.
1. Leadership, Pre-requisites of Leadership
2. Approaches to Leadership, Leadership Styles
3. Ethical Leadership
4. Values in Leadership

Unit IV: Business Ethics
1. Business Ethics its meaning and definition
2. Relevance of Ethics in Business organizations.
3. Theories of Ethics (Teleological, Deontological)
4. Code of Ethics

Unit V: Globalization and Ethics
1. Globalization and Business Changes
2. Values for Global Managers
3. Corporate Social Responsibility
4. Benefits of Managing Ethics in Work Place.

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Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth	Vishwavidyalaya, Indore	Vishwavidyalaya, Indore
Vishwavidyalaya, Indore	Vishwavidyalaya, Indore		

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Choice Based Credit System (CBCS) in Light of NEP-2020
BBA+MBA - V SEMESTER (2021-2024)

COURSE CODE	CATEGORY	COURSE NAME	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teachers Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teachers Assessment*	L	T	P	CREDITS
BBAI501	CC	Human Values and Professional Ethics	60	20	20	-	-	3	-	-	3

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical: **C** - Credit; **CC-** Core Course
*Teacher Assessment shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Suggested Readings

1. Kaur, T. (2004). *Values and Ethics in Management.* Galgotia Publishing Company: New Delhi
2. Kaushal, S.L. (2006). *Business Ethics. Concepts, Crisis and Solutions.* Deep & Deep Publications Pvt. Ltd.: New Delhi
3. Beteille, Andre (1991). *Society and Politics in India*. AthlonePress: New Jersey.
4. Chakraborty, S. K. (1999). *Values and Ethics for Organizations*. Oxford University Press
5. Fernando, A.C. (2009). *Business Ethics - An Indian Perspective .*India: Pearson Education: India
6. Fleddermann, C. D. (2012). *Engineering Ethics*. New Jersey: Pearson Education / Prentice Hall.
7. Boatright, J.R. (2012). *Ethics and the Conduct of Business.* Pearson. Education: New Delhi.
8. Crane, A.and Matten, D. (2015). *Business Ethics*. Oxford University Press Inc:New York.
9. Murthy, C.S.V. (2016). Business *Ethics – Text and Cases*. Himalaya Publishing House Pvt. Ltd:Mumbai
10. Naagrajan, R.R (2016). *Professional Ethics and Human Values*. New Age International Publications: New Delhi.

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Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Name of the Program: B. Sc. (Mathematics Honours)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM	MST	Q/A	END SEM	Q/A				
BSMHMA 402	DC	**Analysis - III**	60	20	20	-	-	4	0	-	4

Course Objective

To introduce the students with the Mathematical Analysis.

Course Outcomes

After the successful completion of this course students will be able to understand and apply the basics of the Differential and the Integral Calculus of the function of the several variables.

Course Content:

Unit I:
Functions of several variables. Continuity. Partial derivatives. Differentiability.
Unit II:
Taylor's theorem. Multiple integrals. Repeated integrals.
Unit III:
The Jacobian theorem. Line, surface and volume integrals. Green's Theorem.
Unit IV:
Statements of Inverse and Implicit Function Theorems.
Unit V:
Maxima and minima. Lagrange multiplier.

Reference Books :

1.   W. Rudin: Principles of Mathematical Analysis.

2.   Tom Apostol: Mathematical Analysis.

3.   Tom Apostol: Calculus I and II.

4.   Terence Tao : Analysis I.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Name of the Program: B. Sc. (Mathematics Honours)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM	MST	Q/A	END SEM	Q/A				
BSMHMA 403	DC	**Geometry**	60	20	20	-	-	4	0	-	4

Course Objective

To introduce the students with the Two and the Three Dimensional Geometry

Course Outcomes

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

1. *understand the fundamental of Geometry*
2. *know the fundamental of* Curves in two and three dimensions
3. *know the applications of Geometry*
4. *analyse and justify the nature of space curves.*

Course Content:

Unit I:
Geometry: Quick review of two-dimensional coordinate geometry, specially conics and system of circle. Rectangular Cartesian co-ordinates, cylindrical, polar and spherical polar co-ordinates in 3-dimensions.

Unit II:
Projection of a vector on a co-ordinate axis. Inclination of a vector with an axis. Direction cosines of a vector. Distance between two points. Division of a directed line segment in a given ratio. Planes: Equation of a plane, signed distance of a point from a plane. Equation of a plane passing through the intersection of two planes. Angle between two intersecting planes. Bi- sectors of angles between two intersecting planes. Parallelism and perpendicularity of two planes.

Unit III:

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Name of the Program: B. Sc. (Mathematics Honours)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM	MST	Q/A	END SEM	Q/A				
BSMHMA 403	DC	**Geometry**	60	20	20	-	-	4	0	-	4

Lines in space: Equations of a line. Rays or half lines. Direction cosines of a ray. Angle between two rays. Distance of a point from a line. Condition of coplanarity of two lines. Skew-lines. Shortest distance.

Unit IV:
Curves in two and three dimensions. Parametrized curves, re-parametrization. Regular and singular points.

Unit V:
Curvature and torsion for space curves. Existence theorem for space curves. Serret-Frenet formula for space curves.

Reference Books:

1.   M.P. do Carmo: Differential Geometry of Curves and Surfaces, Dover Publications.

2.   J. A. Thorpe: Eelementary Topics in Differential Geometry, Springer.

3.   Spivak: Calculus on manifolds, Westview Press.

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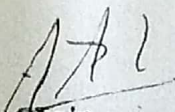## Shri Vaishnav Institute of Science

Department of Physics
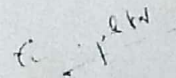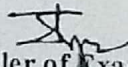
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B. Sc. IV Sem

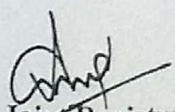| Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								CREDITS
			Theory			Practical		Th	T	P	
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
BSPH402	DC	Electrostatics and Magnetostatics	60	20	20	30	20	3	0	0	3

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 Outcomes	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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Choice Based Credit System (CBCS)

BSPH402: 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.
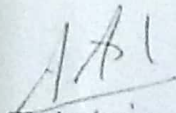
UNIT II: Electrostatics-II

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.
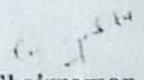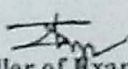
UNIT III: Current Electricity

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).

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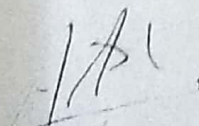
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BSPH402: Electrostatics and Magnetostatics
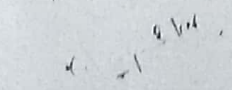
UNIT V: Magnetostatics

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 gyromagnetic ratio. Biot and Savart's law. calculation of H for simple geometrical situations such as Solenoid, Anchor ring. Ampere's Law, $\nabla \times B = \mu_0 J$, $\nabla . B = 0$.
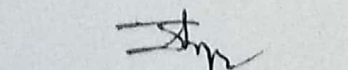
References
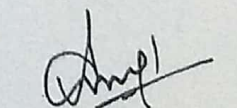
1. Berkley Physics Course. Electricity and Magnetism Ed. E. M. Purcell Mcgraw Hill
2. Physics Volume 2, D. Halliday and R. Resnick
3. Introduction to Electrodynamics: D. J. Griffiths, 4" Edition, Printice Hall.
4. Electricity and Magnetism: S. S. Atwood Dover.
5. Electrodynamics: Emi Cossor and Bassin Lorraine. Asahi Shimbunsha Publishing Ltd.

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Shri Vaishnav Vidyapeeth Vishwavidyalaya
B.Sc. (Chemistry Hons)
Choice Based Credit System (CBCS)(2021-2024)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME					Th	T	P	CREDITS
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSHCH 405	HONS	ADVANCED CONCEPTS OF GENERAL CHEMISTRY - II	60	20	20	0	0	3	0	0	3

Semester IV (B.Sc. Honours) Chemistry Syllabus for Physics & Maths Honours

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

*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 Objective:
(i) To develop the understanding of fundamentals of Organic, Inorganic and Physical Chemistry.
(ii) To give knowledge of Chemistry.

Course Outcomes: -

After completion of this course the students are expected to be able to demonstrate following knowledge, skills, and attitudes. The student will demonstrate capability of

CO1 Fundamentals of Chemistry of Carbonyl compounds and Carbohydrates.

CO2. Use the synthetic chemistry learnt in this course to do functional group transformations.

CO3. Understanding the concept of Chemical thermodynamics and Electrochemistry.

CO4. Demonstrate a fundamental/systematic understanding of the practical field of Organic Chemistry

Unit I: Carbonyl Compounds:
Structure, reactivity, preparation, and properties.

Nucleophilic additions, Nucleophilic addition-elimination reactions with ammonia derivatives with mechanism.

Mechanisms of Aldol and Benzoin condensation, Knoevenagel condensation, Claisan-Schmidt, Perkin, Cannizzaro and Wittig reaction. Beckmann and Benzil-Benzilic acid rearrangements, haloform reaction and Baeyer Villiger oxidation.

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Physical Sciences	Science		

Shri Vaishnav Vidyapeeth Vishwavidyalaya
B.Sc. (Chemistry Hons)
Choice Based Credit System (CBCS)(2021-2024)

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*				
BSHCH 405	HONS	ADVANCED CONCEPTS OF GENERAL CHEMISTRY - II	60	20	20	0	0	3	0	0	3

Addition reactions of á, â-unsaturated carbonyl compounds: Michael addition. Active methylene compounds:Keto-enoltautomerism. Preparation and synthetic applications of diethyl malonate and ethyl acetoacetate.

Unit II: Carbohydrates
Occurrence, classification and their biological importance Monosaccharides: Constitution and absolute configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth projections and conformational structures; Interconversions of aldoses and ketoses; Killiani-Fischer synthesis and Ruff degradation; Disaccharides – Structure elucidation of maltose, lactose and sucrose Polysaccharides – Elementary treatment of starch, cellulose and glycogen.

Unit III : Chemical thermodynamics:
Intensive and extensive variables; state and path functions; isolated, closed and open systems; zeroth law of thermodynamics.
First law: Concept of heat, q, work, w, internal energy U and statement of first law; enthalpy, H, relation between heat capacities, calculations of q, w, U and H for reversible, irreversible and free expansion of gases (ideal and van der Waals) under isothermal and adiabatic conditions.

Thermochemistry: Heats of reactions: standard states; enthalpy of formation of molecules and ions and enthalpy of combustion and its applications; calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, effect of temperature (Kirchoff's equations) and pressure on enthalpy of reactions. Adiabatic flame temperature, explosion temperature.

Second Law: Concept of entropy; thermodynamic scale of temperature, statement of the second law of thermodynamics; molecular and statistical interpretation of entropy. Calculation of entropy change for reversible and irreversible processes.

Unit IV: Electrochemistry
Quantitative aspects of Faraday's laws of electrolysis, rules of oxidation/reduction of ions

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Board of Studies	**Faculty of Studies**	**SVVV, Indore**	**SVVV, Indore**
Physical Sciences	**Science**		

Shri Vaishnav Vidyapeeth Vishwavidyalaya
B.Sc. (Chemistry Hons)
Choice Based Credit System (CBCS)(2021-2024)

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*				
BSHCH 405	HONS	ADVANCED CONCEPTS OF GENERAL CHEMISTRY - II	60	20	20	0	0	3	0	0	3

based on half-cell potentials, applications of electrolysis in metallurgy and industry. Chemical cells, reversible and irreversible cells with examples. Electromotive force of a cell and its measurement, Nernst equation; Standard electrode (reduction) potential and its application to different kinds of half-cells. Qualitative discussion of potentiometric titrations (acid-base, redox, precipitation).

Unit V: Coordination Chemistry
Werner's theory, valence bond theory (inner and outer orbital complexes), Electro neutrality principle and back bonding. Crystal field theory, measurement of 10 Dq ($\Box$o), CFSE in weak and strong fields, pairing energies, factors effecting the magnitude of 10 Dq ($\Box$o, $\Box$t). Octahedral vs. tetrahedral coordination, tetragonal distortions from octahedral geometry Jahn-Teller theorem, square planar geometry. Qualitative aspect of Ligand field and MO Theory. IUPAC nomenclature of coordination compounds, isomerism in coordination compounds. Stereochemistry of complexes with 4 and 6 coordination numbers. Chelate

Books:
1. Atkins, P. W. & Paula, J. de *Atkin's Physical Chemistry* 8th Ed., Oxford University Press.
2. Castellan, G. W. *Physical Chemistry* 4th Ed. Narosa (2004).
3. Engel, T. & Reid, P. *Thermodynamics, Statistical Thermodynamics, & Kinetics* Pearson Education, Inc: New Delhi (2007).
4. McQuarrie, D. A. & Simon, J. D. *Molecular Thermodynamics* Viva Books
5. Morrison, R. T. & Boyd, R. N. *Organic Chemistry*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
6. Finar, I. L. *Organic Chemistry* (*Volume 1*), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).

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Physical Sciences	Science		

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BSMHMA404	DC	Computer Programming	3	0	0	3	60	20	20	0	0

Course Educational Objective:

- To introduce the students with the basic concepts of computer programming.

Course Outcome:

- After the successful completion of this course students will be able to understand and apply the basics of the computer programming for computer based problem solving.

Syllabus:

UNIT-I:

Basic concept of algorithms and flowcharts, Basic concept of a program and characteristics of a good program, a brief introduction to various types of programming languages- High Level, Low Level, Assembly language etc. Writing algorithms and drawing flowcharts.

UNIT-II:

Introduction to C programming language, history of development of C language, general format of a C program, data types, conversion specification, type conversion, identifiers, variables, constants, input/output statements, operators and their precedence.

UNIT-III:

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							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BSMHMA404	DC	Computer Programming	3	0	0	3	60	20	20	0	0

Control structures- for loop, while loop, do-while loop, if, if-else, switch-case, nested control structures. Arrays- 1 and 2 dimensional arrays, break and continue, Functions, call by value, call by reference, Recursion.

UNIT-IV:
Pointer, basic Pointer arithmetic, string handling. Structures and union, The C preprocessor and directives related with it, importance of library functions.

UNIT-V:
File handling in C, types of files, opening and closing files, reading from files, writing in and appending to files

Text Books:

1. Brian Kernighan and Dennis Ritchie: The C Programming Language, PHI, second edition
2. Gottfried, Programming in C, Schaum Series, McGraw Hill, 2018
3. Mullish and Cooper, The spirit of C, Jaico Publishing, 1998
4. Yashwant Kanetkar, Let us C, BPB publications, 2017.

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Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore